



## D2600V2, Serial No. 1061 Extended Dipole Calibrations

Referring to KDB 865664 D01 v01r02, if dipoles are verified in return loss ( $< -20\text{dB}$ , within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

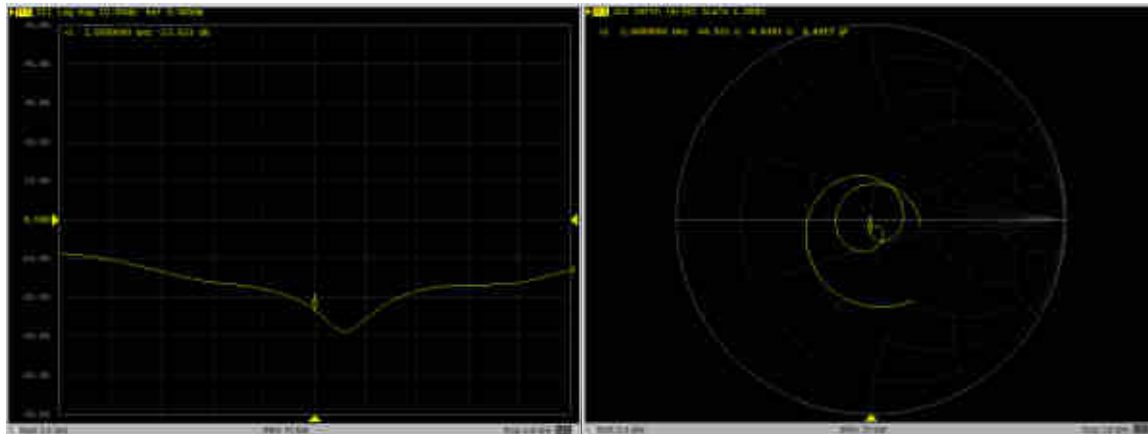
| 2600V2 – serial no. 1061 |                  |           |                      |             |                           |             |                  |           |                      |             |                           |             |
|--------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
|                          | 2600 Head        |           |                      |             |                           |             | 2600 Body        |           |                      |             |                           |             |
| Date of Measurement      | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 2018.12.07               | -23.1            |           | 49.8                 |             | -7                        |             | -22.8            |           | 45.6                 |             | -5.41                     |             |
| 2019.11.27               | -23.0            | 0.00      | 48.9                 | 0.90        | -6.83                     | 0.17        | -22.6            | 0.01      | 44.6                 | 1           | -5.29                     | 0.12        |

### <Justification of the extended calibration>

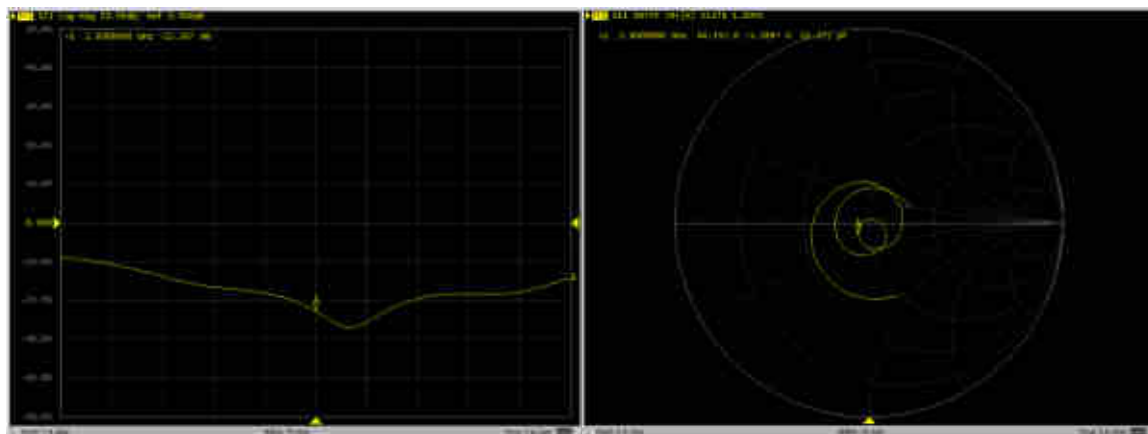
The return loss is  $< -20\text{dB}$ , within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D2600V2, serial no. 1061

2600MHz – Head



2600MHz – Body





Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **D5GHzV2-1113\_Sep19**

## CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN:1113**

Calibration procedure(s) **QA CAL-22.v4  
Calibration Procedure for SAR Validation Sources between 3-6 GHz**

Calibration date: **September 24, 2019**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards               | ID #               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|---------------------------------|--------------------|-----------------------------------|------------------------|
| Power meter NRP                 | SN: 104778         | 03-Apr-19 (No. 217-02892/02893)   | Apr-20                 |
| Power sensor NRP-Z91            | SN: 103244         | 03-Apr-19 (No. 217-02892)         | Apr-20                 |
| Power sensor NRP-Z91            | SN: 103245         | 03-Apr-19 (No. 217-02893)         | Apr-20                 |
| Reference 20 dB Attenuator      | SN: 5058 (20k)     | 04-Apr-19 (No. 217-02894)         | Apr-20                 |
| Type-N mismatch combination     | SN: 5047.2 / 06327 | 04-Apr-19 (No. 217-02895)         | Apr-20                 |
| Reference Probe EX3DV4          | SN: 3503           | 25-Mar-19 (No. EX3-3503_Mar19)    | Mar-20                 |
| DAE4                            | SN: 601            | 30-Apr-19 (No. DAE4-601_Apr19)    | Apr-20                 |
| Secondary Standards             | ID #               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B              | SN: GB39512475     | 30-Oct-14 (in house check Feb-19) | In house check: Oct-20 |
| Power sensor HP 8481A           | SN: US37292783     | 07-Oct-15 (in house check Oct-18) | In house check: Oct-20 |
| Power sensor HP 8481A           | SN: MY41092317     | 07-Oct-15 (in house check Oct-18) | In house check: Oct-20 |
| RF generator R&S SMT-06         | SN: 100972         | 15-Jun-15 (in house check Oct-18) | In house check: Oct-20 |
| Network Analyzer Agilent E8358A | SN: US41080477     | 31-Mar-14 (in house check Oct-18) | In house check: Oct-19 |

|                |                               |                                          |               |
|----------------|-------------------------------|------------------------------------------|---------------|
| Calibrated by: | Name<br><b>Jeton Kastrati</b> | Function<br><b>Laboratory Technician</b> | Signature<br> |
| Approved by:   | <b>Katja Pokovic</b>          | <b>Technical Manager</b>                 |               |

Issued: September 25, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

**Glossary:**

|       |                                 |
|-------|---------------------------------|
| TSL   | tissue simulating liquid        |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A   | not applicable or not measured  |

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                                                                      |                                  |
|------------------------------|----------------------------------------------------------------------|----------------------------------|
| DASY Version                 | DASY5                                                                | V52.10.2                         |
| Extrapolation                | Advanced Extrapolation                                               |                                  |
| Phantom                      | Modular Flat Phantom V5.0                                            |                                  |
| Distance Dipole Center - TSL | 10 mm                                                                | with Spacer                      |
| Zoom Scan Resolution         | dx, dy = 4.0 mm, dz = 1.4 mm                                         | Graded Ratio = 1.4 (Z direction) |
| Frequency                    | 5250 MHz $\pm$ 1 MHz<br>5600 MHz $\pm$ 1 MHz<br>5750 MHz $\pm$ 1 MHz |                                  |

## Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

|                                         | Temperature         | Permittivity   | Conductivity         |
|-----------------------------------------|---------------------|----------------|----------------------|
| Nominal Head TSL parameters             | 22.0 °C             | 35.9           | 4.71 mho/m           |
| Measured Head TSL parameters            | (22.0 $\pm$ 0.2) °C | 35.1 $\pm$ 6 % | 4.53 mho/m $\pm$ 6 % |
| Head TSL temperature change during test | < 0.5 °C            | ----           | ----                 |

## SAR result with Head TSL at 5250 MHz

|                                                       |                    |                              |
|-------------------------------------------------------|--------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL | Condition          |                              |
| SAR measured                                          | 100 mW input power | 8.09 W/kg                    |
| SAR for nominal Head TSL parameters                   | normalized to 1W   | 80.5 W/kg $\pm$ 19.9 % (k=2) |

|                                                         |                    |                              |
|---------------------------------------------------------|--------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL | condition          |                              |
| SAR measured                                            | 100 mW input power | 2.33 W/kg                    |
| SAR for nominal Head TSL parameters                     | normalized to 1W   | 23.1 W/kg $\pm$ 19.5 % (k=2) |

## Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

|                                         | Temperature         | Permittivity   | Conductivity         |
|-----------------------------------------|---------------------|----------------|----------------------|
| Nominal Head TSL parameters             | 22.0 °C             | 35.5           | 5.07 mho/m           |
| Measured Head TSL parameters            | (22.0 $\pm$ 0.2) °C | 34.6 $\pm$ 6 % | 4.88 mho/m $\pm$ 6 % |
| Head TSL temperature change during test | < 0.5 °C            | ---            | ----                 |

## SAR result with Head TSL at 5600 MHz

|                                                       |                    |                              |
|-------------------------------------------------------|--------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL | Condition          |                              |
| SAR measured                                          | 100 mW input power | 8.40 W/kg                    |
| SAR for nominal Head TSL parameters                   | normalized to 1W   | 83.4 W/kg $\pm$ 19.9 % (k=2) |

|                                                         |                    |                              |
|---------------------------------------------------------|--------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL | condition          |                              |
| SAR measured                                            | 100 mW input power | 2.40 W/kg                    |
| SAR for nominal Head TSL parameters                     | normalized to 1W   | 23.8 W/kg $\pm$ 19.5 % (k=2) |

## Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

|                                         | Temperature     | Permittivity | Conductivity     |
|-----------------------------------------|-----------------|--------------|------------------|
| Nominal Head TSL parameters             | 22.0 °C         | 35.4         | 5.22 mho/m       |
| Measured Head TSL parameters            | (22.0 ± 0.2) °C | 34.4 ± 6 %   | 5.03 mho/m ± 6 % |
| Head TSL temperature change during test | < 0.5 °C        | ----         | ----             |

## SAR result with Head TSL at 5750 MHz

|                                                             |                    |                                 |
|-------------------------------------------------------------|--------------------|---------------------------------|
| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b> | Condition          |                                 |
| SAR measured                                                | 100 mW input power | 8.06 W/kg                       |
| SAR for nominal Head TSL parameters                         | normalized to 1W   | <b>80.0 W/kg ± 19.9 % (k=2)</b> |

|                                                               |                    |                                 |
|---------------------------------------------------------------|--------------------|---------------------------------|
| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b> | condition          |                                 |
| SAR measured                                                  | 100 mW input power | 2.30 W/kg                       |
| SAR for nominal Head TSL parameters                           | normalized to 1W   | <b>22.8 W/kg ± 19.5 % (k=2)</b> |

## Appendix (Additional assessments outside the scope of SCS 0108)

### Antenna Parameters with Head TSL at 5250 MHz

|                                      |                               |
|--------------------------------------|-------------------------------|
| Impedance, transformed to feed point | 51.7 $\Omega$ - 6.2 $j\Omega$ |
| Return Loss                          | - 24.0 dB                     |

### Antenna Parameters with Head TSL at 5600 MHz

|                                      |                               |
|--------------------------------------|-------------------------------|
| Impedance, transformed to feed point | 56.0 $\Omega$ - 2.7 $j\Omega$ |
| Return Loss                          | - 24.1 dB                     |

### Antenna Parameters with Head TSL at 5750 MHz

|                                      |                               |
|--------------------------------------|-------------------------------|
| Impedance, transformed to feed point | 56.7 $\Omega$ - 1.0 $j\Omega$ |
| Return Loss                          | - 23.9 dB                     |

### General Antenna Parameters and Design

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.195 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1113**Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz,  
Frequency: 5750 MHzMedium parameters used:  $f = 5250$  MHz;  $\sigma = 4.53$  S/m;  $\epsilon_r = 35.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5600$  MHz;  $\sigma = 4.88$  S/m;  $\epsilon_r = 34.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.03$  S/m;  $\epsilon_r = 34.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.4, 5.4, 5.4) @ 5250 MHz, ConvF(4.95, 4.95, 4.95) @ 5600 MHz, ConvF(4.98, 4.98, 4.98) @ 5750 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

**Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan,****dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 78.54 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 27.9 W/kg

**SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.33 W/kg**

Maximum value of SAR (measured) = 18.1 W/kg

**Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan,****dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 78.00 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 31.1 W/kg

**SAR(1 g) = 8.40 W/kg; SAR(10 g) = 2.40 W/kg**

Maximum value of SAR (measured) = 19.4 W/kg

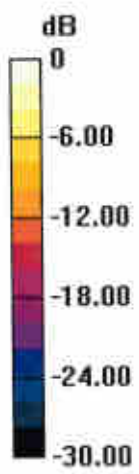
**Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan,****dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 75.13 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 31.8 W/kg

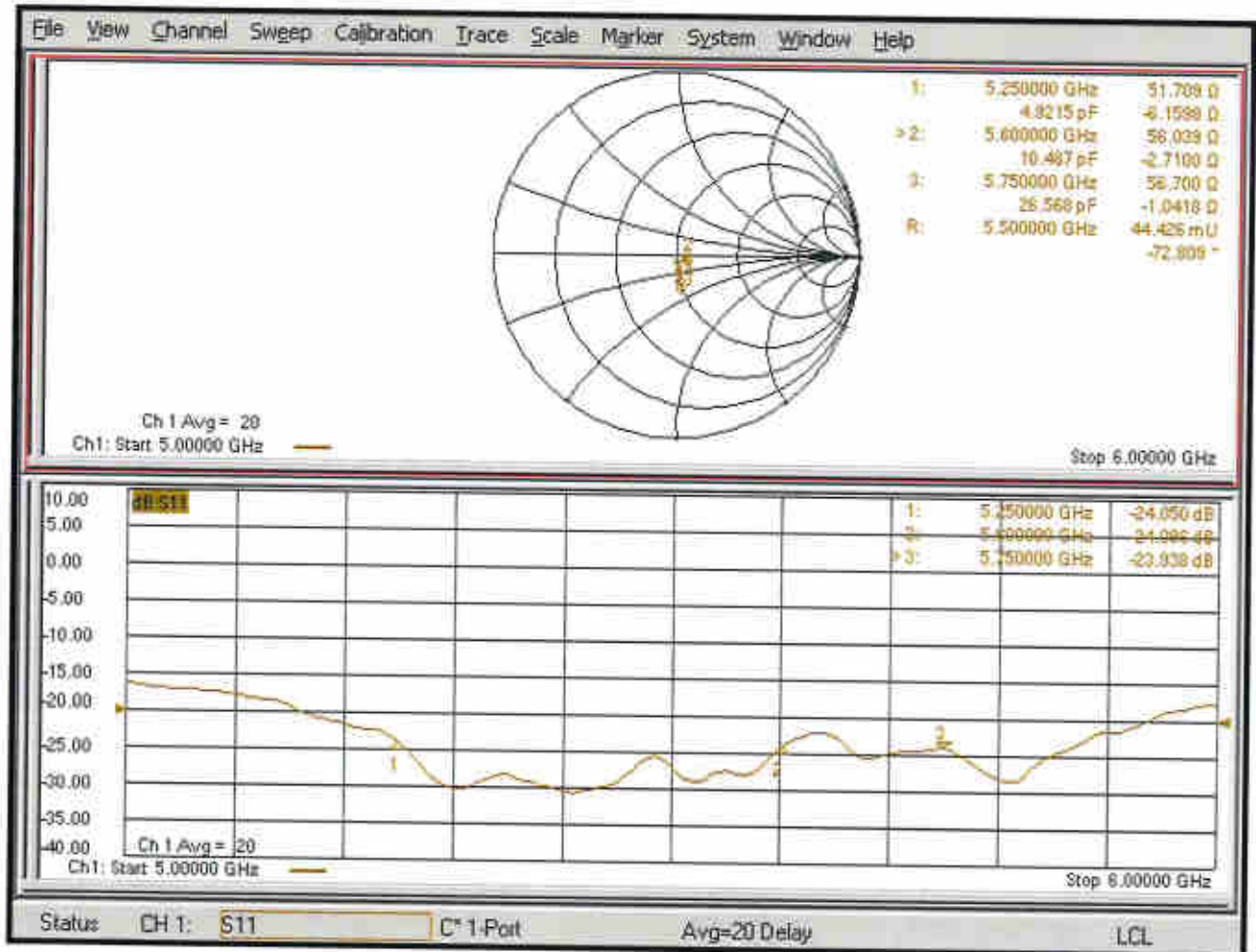
**SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.30 W/kg**

Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 18.1 W/kg = 12.58 dBW/kg

## Impedance Measurement Plot for Head TSL





Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: SCS 0108

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Client **Sporton**

Certificate No: DAE4-1338\_Nov19

## CALIBRATION CERTIFICATE

Object **DAE4 - SD 000 D04 BM - SN: 1338**

Calibration procedure(s) **QA CAL-06.v29**  
**Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **November 20, 2019**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards                                | ID #               | Cal Date (Certificate No.) | Scheduled Calibration  |
|--------------------------------------------------|--------------------|----------------------------|------------------------|
| Keithley Multimeter Type 2001                    | SN: 0810278        | 03-Sep-19 (No:25949)       | Sep-20                 |
| Secondary Standards                              | ID #               | Check Date (in house)      | Scheduled Check        |
| Auto DAE Calibration Unit<br>Calibrator Box V2.1 | SE LWS 053 AA 1001 | 07-Jan-19 (in house check) | In house check: Jan-20 |
|                                                  | SE UMS 006 AA 1002 | 07-Jan-19 (in house check) | In house check: Jan-20 |

|                |                              |                                   |               |
|----------------|------------------------------|-----------------------------------|---------------|
| Calibrated by: | Name<br><b>Eric Hainfeld</b> | Function<br>Laboratory Technician | Signature<br> |
|----------------|------------------------------|-----------------------------------|---------------|

|              |           |                |  |
|--------------|-----------|----------------|--|
| Approved by: | Sven Kühn | Deputy Manager |  |
|--------------|-----------|----------------|--|

Issued: November 20, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

## Glossary

|                 |                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------|
| DAE             | data acquisition electronics                                                            |
| Connector angle | information used in DASY system to align probe sensor X to the robot coordinate system. |

## Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

## Appendix (Additional assessments outside the scope of SCS0108)

### 1. DC Voltage Linearity

| High Range        | Reading ( $\mu\text{V}$ ) | Difference ( $\mu\text{V}$ ) | Error (%) |
|-------------------|---------------------------|------------------------------|-----------|
| Channel X + Input | 200032.47                 | -3.15                        | -0.00     |
| Channel X + Input | 20005.24                  | -0.41                        | -0.00     |
| Channel X - Input | -20006.33                 | -0.08                        | 0.00      |
| Channel Y + Input | 200035.56                 | -0.12                        | -0.00     |
| Channel Y + Input | 20004.04                  | -1.44                        | -0.01     |
| Channel Y - Input | -20008.42                 | -2.09                        | 0.01      |
| Channel Z + Input | 200033.57                 | -2.10                        | -0.00     |
| Channel Z + Input | 20004.49                  | -0.96                        | -0.00     |
| Channel Z - Input | -20008.50                 | -2.10                        | 0.01      |

| Low Range         | Reading ( $\mu\text{V}$ ) | Difference ( $\mu\text{V}$ ) | Error (%) |
|-------------------|---------------------------|------------------------------|-----------|
| Channel X + Input | 2001.19                   | 0.11                         | 0.01      |
| Channel X + Input | 201.01                    | -0.01                        | -0.00     |
| Channel X - Input | -199.18                   | -0.36                        | 0.18      |
| Channel Y + Input | 2001.08                   | 0.17                         | 0.01      |
| Channel Y + Input | 199.87                    | -0.94                        | -0.47     |
| Channel Y - Input | -200.25                   | -1.26                        | 0.64      |
| Channel Z + Input | 2000.89                   | -0.01                        | -0.00     |
| Channel Z + Input | 199.87                    | -0.86                        | -0.43     |
| Channel Z - Input | -199.91                   | -0.91                        | 0.46      |

### 2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | Common mode Input Voltage (mV) | High Range Average Reading ( $\mu\text{V}$ ) | Low Range Average Reading ( $\mu\text{V}$ ) |
|-----------|--------------------------------|----------------------------------------------|---------------------------------------------|
| Channel X | 200                            | 7.80                                         | 5.74                                        |
|           | - 200                          | -6.09                                        | -7.67                                       |
| Channel Y | 200                            | -21.26                                       | -21.58                                      |
|           | - 200                          | 19.76                                        | 19.35                                       |
| Channel Z | 200                            | -2.47                                        | -2.52                                       |
|           | - 200                          | 0.78                                         | 0.74                                        |

### 3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | Input Voltage (mV) | Channel X ( $\mu\text{V}$ ) | Channel Y ( $\mu\text{V}$ ) | Channel Z ( $\mu\text{V}$ ) |
|-----------|--------------------|-----------------------------|-----------------------------|-----------------------------|
| Channel X | 200                | -                           | 3.28                        | -2.96                       |
| Channel Y | 200                | 7.86                        | -                           | 4.97                        |
| Channel Z | 200                | 8.87                        | 6.08                        | -                           |

## DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1  $\mu$ V , full range = -100...+300 mV

Low Range: 1LSB = 61 nV , full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| Calibration Factors | X                         | Y                         | Z                         |
|---------------------|---------------------------|---------------------------|---------------------------|
| High Range          | 403.688 $\pm$ 0.02% (k=2) | 404.268 $\pm$ 0.02% (k=2) | 404.224 $\pm$ 0.02% (k=2) |
| Low Range           | 3.97425 $\pm$ 1.50% (k=2) | 3.97933 $\pm$ 1.50% (k=2) | 3.97493 $\pm$ 1.50% (k=2) |

## Connector Angle

|                                           |                                     |
|-------------------------------------------|-------------------------------------|
| Connector Angle to be used in DASY system | 239.5 $^{\circ}$ $\pm$ 1 $^{\circ}$ |
|-------------------------------------------|-------------------------------------|

#### 4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | High Range (LSB) | Low Range (LSB) |
|-----------|------------------|-----------------|
| Channel X | 16190            | 14025           |
| Channel Y | 16291            | 16862           |
| Channel Z | 16104            | 15099           |

#### 5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10M $\Omega$

|           | Average ( $\mu$ V) | min. Offset ( $\mu$ V) | max. Offset ( $\mu$ V) | Std. Deviation ( $\mu$ V) |
|-----------|--------------------|------------------------|------------------------|---------------------------|
| Channel X | -0.07              | -1.18                  | 1.09                   | 0.42                      |
| Channel Y | -0.64              | -1.62                  | 0.80                   | 0.39                      |
| Channel Z | -0.63              | -1.81                  | 0.20                   | 0.36                      |

#### 6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

#### 7. Input Resistance (Typical values for information)

|           | Zeroing (kOhm) | Measuring (MOhm) |
|-----------|----------------|------------------|
| Channel X | 200            | 200              |
| Channel Y | 200            | 200              |
| Channel Z | 200            | 200              |

#### 8. Low Battery Alarm Voltage (Typical values for information)

| Typical values | Alarm Level (VDC) |
|----------------|-------------------|
| Supply (+ Vcc) | +7.9              |
| Supply (- Vcc) | -7.6              |

#### 9. Power Consumption (Typical values for information)

| Typical values | Switched off (mA) | Stand by (mA) | Transmitting (mA) |
|----------------|-------------------|---------------|-------------------|
| Supply (+ Vcc) | +0.01             | +6            | +14               |
| Supply (- Vcc) | -0.01             | -8            | -9                |



In Collaboration with  
**s p e a g**  
CALIBRATION LABORATORY



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L0570

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504  
E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

Client : **Amphenol**

Certificate No: **Z20-60071**

## CALIBRATION CERTIFICATE

Object **DAE4 - SN: 799**

Calibration Procedure(s) **FF-Z11-002-01**  
**Calibration Procedure for the Data Acquisition Electronics (DAEx)**

Calibration date: **February 10, 2020**

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards      | ID #    | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
|------------------------|---------|------------------------------------------|-----------------------|
| Process Calibrator 753 | 1971018 | 24-Jun-19 (CTTL, No.J19X05126)           | Jun-20                |

|                | Name        | Function           | Signature |
|----------------|-------------|--------------------|-----------|
| Calibrated by: | Yu Zongying | SAR Test Engineer  |           |
| Reviewed by:   | Lin Hao     | SAR Test Engineer  |           |
| Approved by:   | Qi Dianyuan | SAR Project Leader |           |

Issued: February 11, 2020

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



In Collaboration with

**s p e a g**

**CALIBRATION LABORATORY**

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: [ctl@chinattl.com](mailto:ctl@chinattl.com)

[Http://www.chinattl.cn](http://www.chinattl.cn)

### **Glossary:**

DAE data acquisition electronics  
Connector angle information used in DASY system to align probe sensor X to the robot coordinate system.

### **Methods Applied and Interpretation of Parameters:**

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The report provide only calibration results for DAE, it does not contain other performance test results.



In Collaboration with

**s p e a g**  
**CALIBRATION LABORATORY**

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: cttl@chinattl.com

Http://www.chinattl.cn

## DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 $\mu$ V, full range = -100...+300 mV

Low Range: 1LSB = 61nV, full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| Calibration Factors | X                         | Y                         | Z                         |
|---------------------|---------------------------|---------------------------|---------------------------|
| High Range          | 405.644 $\pm$ 0.15% (k=2) | 405.087 $\pm$ 0.15% (k=2) | 405.831 $\pm$ 0.15% (k=2) |
| Low Range           | 3.98565 $\pm$ 0.7% (k=2)  | 4.00142 $\pm$ 0.7% (k=2)  | 4.00514 $\pm$ 0.7% (k=2)  |

## Connector Angle

|                                           |                |
|-------------------------------------------|----------------|
| Connector Angle to be used in DASY system | 177° $\pm$ 1 ° |
|-------------------------------------------|----------------|



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client Sporton-CN (Auden)

Certificate No: DAE4-1210\_Jul19

## CALIBRATION CERTIFICATE

Object DAE4 - SD 000 D04 BM - SN: 1210

Calibration procedure(s) QA CAL-06.v29  
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: July 23, 2019

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards             | ID #               | Cal Date (Certificate No.) | Scheduled Calibration  |
|-------------------------------|--------------------|----------------------------|------------------------|
| Keithley Multimeter Type 2001 | SN: 0810278        | 03-Sep-18 (No:23488)       | Sep-19                 |
| Secondary Standards           | ID #               | Check Date (in house)      | Scheduled Check        |
| Auto DAE Calibration Unit     | SE UWS 053 AA 1001 | 07-Jan-19 (in house check) | In house check: Jan-20 |
| Calibrator Box V2.1           | SE UMS 006 AA 1002 | 07-Jan-19 (in house check) | In house check: Jan-20 |

|                |                        |                                   |               |
|----------------|------------------------|-----------------------------------|---------------|
| Calibrated by: | Name<br>Adrian Gehring | Function<br>Laboratory Technician | Signature<br> |
| Approved by:   | Sven Kühn              | Deputy Manager                    |               |

Issued: July 23, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

## Glossary

|                 |                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------|
| DAE             | data acquisition electronics                                                            |
| Connector angle | information used in DASY system to align probe sensor X to the robot coordinate system. |

## Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

## DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1  $\mu$ V , full range = -100...+300 mV

Low Range: 1LSB = 61 nV , full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| Calibration Factors | X                         | Y                         | Z                         |
|---------------------|---------------------------|---------------------------|---------------------------|
| High Range          | 404.166 $\pm$ 0.02% (k=2) | 404.988 $\pm$ 0.02% (k=2) | 405.096 $\pm$ 0.02% (k=2) |
| Low Range           | 3.99856 $\pm$ 1.50% (k=2) | 3.98348 $\pm$ 1.50% (k=2) | 3.99912 $\pm$ 1.50% (k=2) |

## Connector Angle

|                                           |                   |
|-------------------------------------------|-------------------|
| Connector Angle to be used in DASY system | 345.5 ° $\pm$ 1 ° |
|-------------------------------------------|-------------------|

## Appendix (Additional assessments outside the scope of SCS0108)

### 1. DC Voltage Linearity

| High Range        | Reading ( $\mu\text{V}$ ) | Difference ( $\mu\text{V}$ ) | Error (%) |
|-------------------|---------------------------|------------------------------|-----------|
| Channel X + Input | 199994.14                 | -1.58                        | -0.00     |
| Channel X + Input | 20003.24                  | 1.63                         | 0.01      |
| Channel X - Input | -19999.69                 | 2.15                         | -0.01     |
| Channel Y + Input | 199994.24                 | -1.47                        | -0.00     |
| Channel Y + Input | 19999.92                  | -1.59                        | -0.01     |
| Channel Y - Input | -20002.36                 | -0.45                        | 0.00      |
| Channel Z + Input | 199993.01                 | -3.18                        | -0.00     |
| Channel Z + Input | 20001.72                  | 0.33                         | 0.00      |
| Channel Z - Input | -20001.83                 | 0.22                         | -0.00     |

| Low Range         | Reading ( $\mu\text{V}$ ) | Difference ( $\mu\text{V}$ ) | Error (%) |
|-------------------|---------------------------|------------------------------|-----------|
| Channel X + Input | 2000.95                   | 0.12                         | 0.01      |
| Channel X + Input | 201.39                    | 0.23                         | 0.11      |
| Channel X - Input | -198.00                   | 0.76                         | -0.38     |
| Channel Y + Input | 2000.37                   | -0.36                        | -0.02     |
| Channel Y + Input | 200.27                    | -0.81                        | -0.40     |
| Channel Y - Input | -199.65                   | -0.81                        | 0.41      |
| Channel Z + Input | 2000.08                   | -0.54                        | -0.03     |
| Channel Z + Input | 200.54                    | -0.42                        | -0.21     |
| Channel Z - Input | -199.83                   | -0.88                        | 0.44      |

### 2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | Common mode Input Voltage (mV) | High Range Average Reading ( $\mu\text{V}$ ) | Low Range Average Reading ( $\mu\text{V}$ ) |
|-----------|--------------------------------|----------------------------------------------|---------------------------------------------|
| Channel X | 200                            | -6.17                                        | -7.94                                       |
|           | - 200                          | 9.53                                         | 7.51                                        |
| Channel Y | 200                            | -9.87                                        | -9.68                                       |
|           | - 200                          | 8.28                                         | 8.02                                        |
| Channel Z | 200                            | 12.52                                        | 12.54                                       |
|           | - 200                          | -13.97                                       | -14.14                                      |

### 3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | Input Voltage (mV) | Channel X ( $\mu\text{V}$ ) | Channel Y ( $\mu\text{V}$ ) | Channel Z ( $\mu\text{V}$ ) |
|-----------|--------------------|-----------------------------|-----------------------------|-----------------------------|
| Channel X | 200                | -                           | 2.17                        | -3.57                       |
| Channel Y | 200                | 8.43                        | -                           | 2.81                        |
| Channel Z | 200                | 9.90                        | 6.07                        | -                           |

#### 4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | High Range (LSB) | Low Range (LSB) |
|-----------|------------------|-----------------|
| Channel X | 15961            | 16608           |
| Channel Y | 15954            | 15680           |
| Channel Z | 15869            | 16574           |

#### 5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10M $\Omega$

|           | Average ( $\mu$ V) | min. Offset ( $\mu$ V) | max. Offset ( $\mu$ V) | Std. Deviation ( $\mu$ V) |
|-----------|--------------------|------------------------|------------------------|---------------------------|
| Channel X | -0.75              | -1.83                  | 0.18                   | 0.39                      |
| Channel Y | 0.12               | -0.92                  | 0.78                   | 0.38                      |
| Channel Z | 1.30               | -0.57                  | 3.07                   | 0.63                      |

#### 6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

#### 7. Input Resistance (Typical values for information)

|           | Zeroing (kOhm) | Measuring (MOhm) |
|-----------|----------------|------------------|
| Channel X | 200            | 200              |
| Channel Y | 200            | 200              |
| Channel Z | 200            | 200              |

#### 8. Low Battery Alarm Voltage (Typical values for information)

| Typical values | Alarm Level (VDC) |
|----------------|-------------------|
| Supply (+ Vcc) | +7.9              |
| Supply (- Vcc) | -7.6              |

#### 9. Power Consumption (Typical values for information)

| Typical values | Switched off (mA) | Stand by (mA) | Transmitting (mA) |
|----------------|-------------------|---------------|-------------------|
| Supply (+ Vcc) | +0.01             | +6            | +14               |
| Supply (- Vcc) | -0.01             | -8            | -9                |



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **ES3-3293\_Nov19**

## CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3293**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v7  
Calibration procedure for dosimetric E-field probes**

Calibration date: **November 25, 2019**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP            | SN: 104778       | 03-Apr-19 (No. 217-02892/02893)   | Apr-20                 |
| Power sensor NRP-Z91       | SN: 103244       | 03-Apr-19 (No. 217-02892)         | Apr-20                 |
| Power sensor NRP-Z91       | SN: 103245       | 03-Apr-19 (No. 217-02893)         | Apr-20                 |
| Reference 20 dB Attenuator | SN: S5277 (20x)  | 04-Apr-19 (No. 217-02894)         | Apr-20                 |
| DAE4                       | SN: 660          | 07-Oct-19 (No. DAE4-660_Oct19)    | Oct-20                 |
| Reference Probe ES3DV2     | SN: 3013         | 31-Dec-18 (No. ES3-3013_Dec18)    | Dec-19                 |
| Secondary Standards        | ID               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B         | SN: GB41293874   | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| Power sensor E4412A        | SN: MY41498087   | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| Power sensor E4412A        | SN: 000110210    | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| RF generator HP 8648C      | SN: US3642U01700 | 04-Aug-99 (in house check Jun-18) | In house check: Jun-20 |
| Network Analyzer E8358A    | SN: US41080477   | 31-Mar-14 (in house check Oct-19) | In house check: Oct-20 |

|                                                                                                                 | Name          | Function              | Signature |
|-----------------------------------------------------------------------------------------------------------------|---------------|-----------------------|-----------|
| Calibrated by:                                                                                                  | Leif Klysner  | Laboratory Technician |           |
| Approved by:                                                                                                    | Katja Pokovic | Technical Manager     |           |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |               |                       |           |
| Issued: November 26, 2019                                                                                       |               |                       |           |



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

### Glossary:

|                          |                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                      | tissue simulating liquid                                                                                                                                |
| NORM <sub>x,y,z</sub>    | sensitivity in free space                                                                                                                               |
| ConvF                    | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                              |
| DCP                      | diode compression point                                                                                                                                 |
| CF                       | crest factor (1/duty_cycle) of the RF signal                                                                                                            |
| A, B, C, D               | modulation dependent linearization parameters                                                                                                           |
| Polarization $\phi$      | $\phi$ rotation around probe axis                                                                                                                       |
| Polarization $\vartheta$ | $\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\vartheta = 0$ is normal to probe axis |
| Connector Angle          | information used in DASY system to align probe sensor X to the robot coordinate system                                                                  |

### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3293

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2) |
|-----------------------------------------------------------|----------|----------|----------|-----------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 1.09     | 0.90     | 0.71     | ± 10.1 %  |
| DCP (mV) <sup>B</sup>                                     | 105.6    | 104.0    | 109.8    |           |

### Calibration Results for Modulation Response

| UID | Communication System Name |   | A<br>dB | B<br>dB $\sqrt{\mu\text{V}}$ | C   | D<br>dB | VR<br>mV | Max<br>dev. | Unc <sup>E</sup><br>(k=2) |
|-----|---------------------------|---|---------|------------------------------|-----|---------|----------|-------------|---------------------------|
| 0   | CW                        | X | 0.0     | 0.0                          | 1.0 | 0.00    | 197.9    | ±3.5 %      | ± 4.7 %                   |
|     |                           | Y | 0.0     | 0.0                          | 1.0 |         | 199.0    |             |                           |
|     |                           | Z | 0.0     | 0.0                          | 1.0 |         | 206.6    |             |                           |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 5).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3293

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | -4.6       |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 10 mm      |
| Tip Diameter                                  | 4 mm       |
| Probe Tip to Sensor X Calibration Point       | 2 mm       |
| Probe Tip to Sensor Y Calibration Point       | 2 mm       |
| Probe Tip to Sensor Z Calibration Point       | 2 mm       |
| Recommended Measurement Distance from Surface | 3 mm       |

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3293

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>H</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 6.56    | 6.56    | 6.56    | 0.80               | 1.23                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 6.39    | 6.39    | 6.39    | 0.80               | 1.26                    | ± 12.0 %  |
| 900                  | 41.5                               | 0.97                            | 6.23    | 6.23    | 6.23    | 0.72               | 1.30                    | ± 12.0 %  |
| 1450                 | 40.5                               | 1.20                            | 5.89    | 5.89    | 5.89    | 0.48               | 1.49                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 5.53    | 5.53    | 5.53    | 0.55               | 1.38                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 5.32    | 5.32    | 5.32    | 0.67               | 1.30                    | ± 12.0 %  |
| 2000                 | 40.0                               | 1.40                            | 5.25    | 5.25    | 5.25    | 0.50               | 1.55                    | ± 12.0 %  |
| 2300                 | 39.5                               | 1.67                            | 4.89    | 4.89    | 4.89    | 0.63               | 1.42                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 4.60    | 4.60    | 4.60    | 0.80               | 1.33                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 4.39    | 4.39    | 4.39    | 0.75               | 1.41                    | ± 12.0 %  |

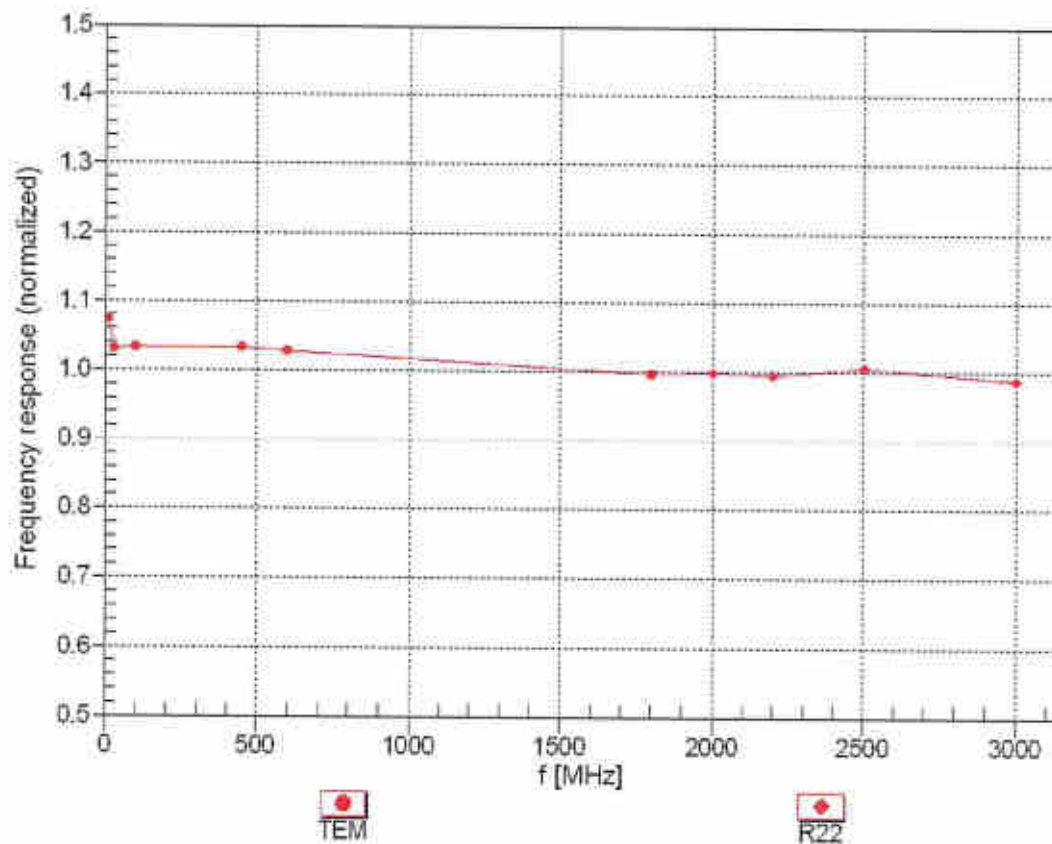
<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-8 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>H</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## Frequency Response of E-Field

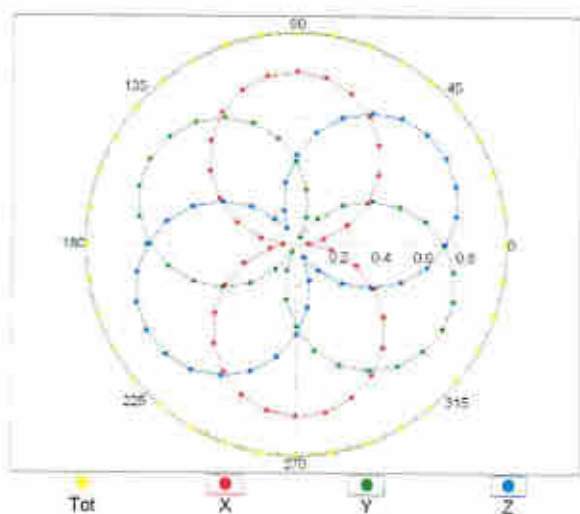
(TEM-Cell:ifi110 EXX, Waveguide: R22)



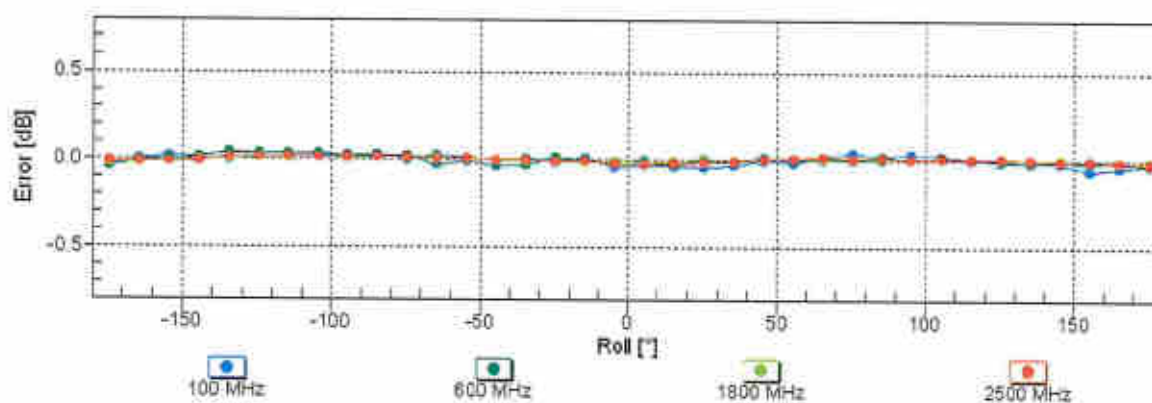
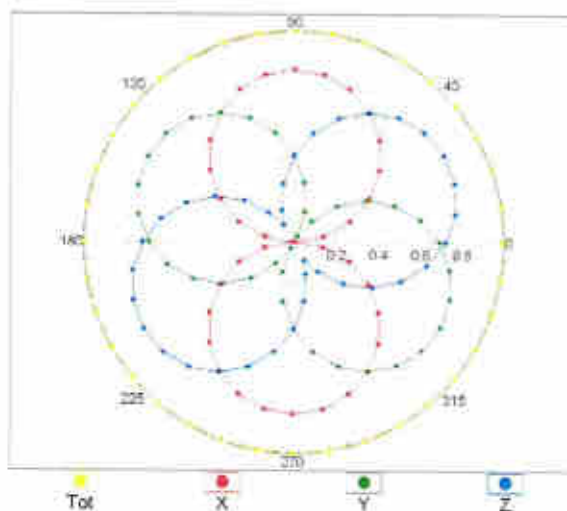
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$

f=600 MHz,TEM

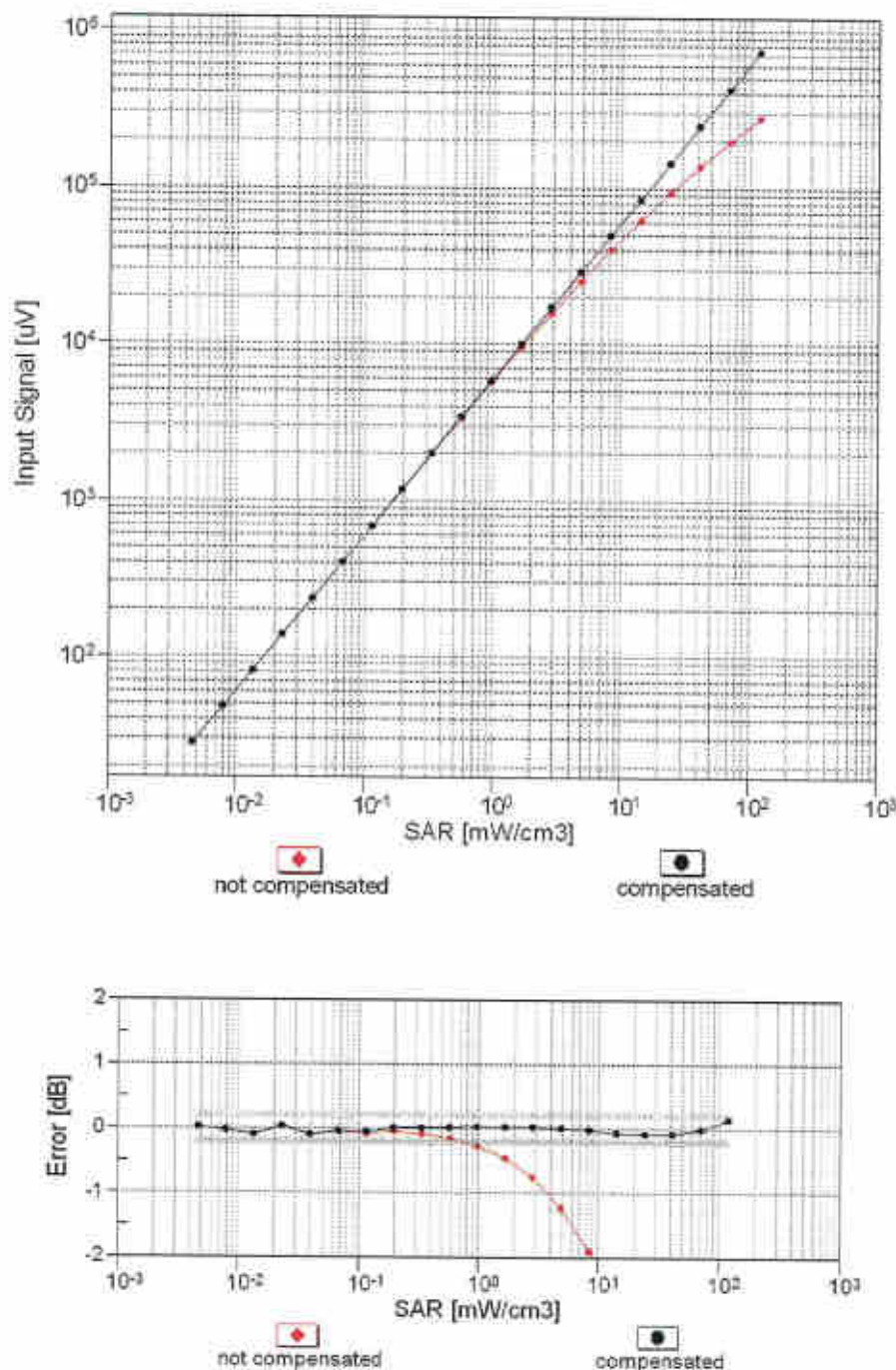


f=1800 MHz,R22



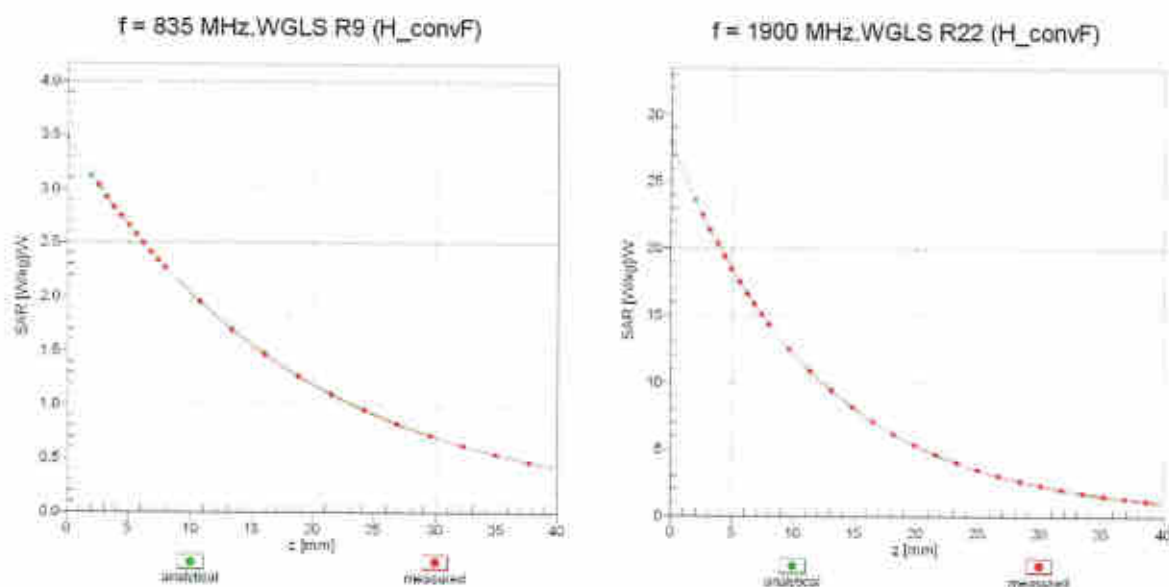
Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

Dynamic Range f(SAR<sub>head</sub>)  
(TEM cell , f<sub>eval</sub>= 1900 MHz)



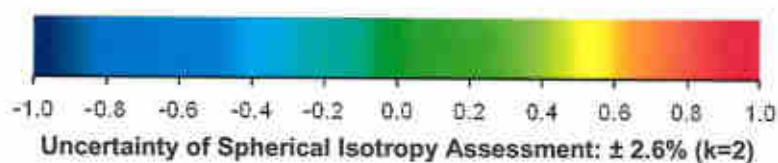
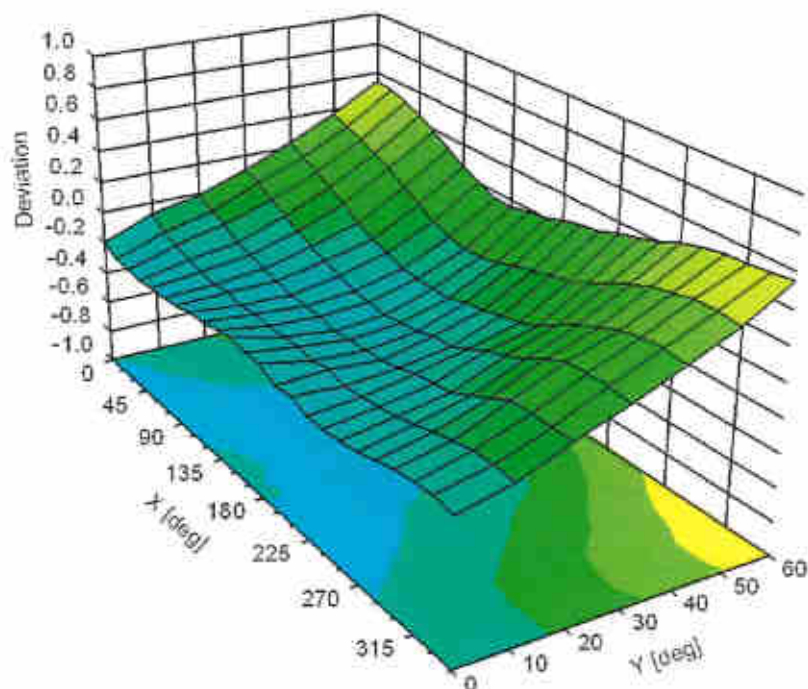
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

## Conversion Factor Assessment



## Deviation from Isotropy in Liquid

Error ( $\phi, \theta$ ),  $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Client **Sporton**

Certificate No: **EX3-3857\_May19**

## CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3857**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7  
Calibration procedure for dosimetric E-field probes**

Calibration date: **May 27, 2019**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP            | SN: 104778       | 03-Apr-19 (No. 217-02892/02893)   | Apr-20                 |
| Power sensor NRP-Z91       | SN: 103244       | 03-Apr-19 (No. 217-02892)         | Apr-20                 |
| Power sensor NRP-Z91       | SN: 103245       | 03-Apr-19 (No. 217-02893)         | Apr-20                 |
| Reference 20 dB Attenuator | SN: S5277 (20x)  | 04-Apr-19 (No. 217-02894)         | Apr-20                 |
| DAE4                       | SN: 660          | 19-Dec-18 (No. DAE4-660 Dec18)    | Dec-19                 |
| Reference Probe ES3DV2     | SN: 3013         | 31-Dec-18 (No. ES3-3013 Dec18)    | Dec-19                 |
| Secondary Standards        | ID               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B         | SN: GB41293874   | 06-Apr-16 (in house check Jun-16) | In house check: Jun-20 |
| Power sensor E4412A        | SN: MY41498087   | 06-Apr-16 (in house check Jun-16) | In house check: Jun-20 |
| Power sensor E4412A        | SN: 000110210    | 06-Apr-16 (in house check Jun-16) | In house check: Jun-20 |
| RF generator HP 8848C      | SN: US3642U01700 | 04-Aug-99 (in house check Jun-16) | In house check: Jun-20 |
| Network Analyzer E8358A    | SN: US41080477   | 31-Mar-14 (in house check Oct-18) | In house check: Oct-19 |

|                                                                                                                 | Name           | Function              | Signature            |
|-----------------------------------------------------------------------------------------------------------------|----------------|-----------------------|----------------------|
| Calibrated by:                                                                                                  | Jeton Kastrati | Laboratory Technician |                      |
| Approved by:                                                                                                    | Katja Pokovic  | Technical Manager     |                      |
|                                                                                                                 |                |                       | Issued: May 28, 2019 |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                |                       |                      |



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

### Glossary:

|                       |                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                   | tissue-simulating liquid                                                                                                                          |
| NORM <sub>x,y,z</sub> | sensitivity in free space                                                                                                                         |
| ConvF                 | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                        |
| DCP                   | diode compression point                                                                                                                           |
| CF                    | crest factor (1/duty_cycle) of the RF signal                                                                                                      |
| A, B, C, D            | modulation dependent linearization parameters                                                                                                     |
| Polarization $\phi$   | $\phi$ rotation around probe axis                                                                                                                 |
| Polarization $\theta$ | $\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\theta = 0$ is normal to probe axis |
| Connector Angle       | information used in DASY system to align probe sensor X to the robot coordinate system                                                            |

### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\theta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3857

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|-----------------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 0.17     | 0.43     | 0.45     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 102.0    | 100.4    | 103.0    |               |

### Calibration Results for Modulation Response

| UID       | Communication System Name   |   | A<br>dB | B<br>dB $\mu\text{V}$ | C     | D<br>dB | VR<br>mV | Max<br>dev.  | Max<br>Unc <sup>E</sup><br>(k=2) |
|-----------|-----------------------------|---|---------|-----------------------|-------|---------|----------|--------------|----------------------------------|
| 0         | CW                          | X | 0.00    | 0.00                  | 1.00  | 0.00    | 149.1    | $\pm 3.5 \%$ | $\pm 4.7 \%$                     |
|           |                             | Y | 0.00    | 0.00                  | 1.00  |         | 142.5    |              |                                  |
|           |                             | Z | 0.00    | 0.00                  | 1.00  |         | 128.7    |              |                                  |
| 10352-AAA | Pulse Waveform (200Hz, 10%) | X | 5.02    | 71.79                 | 14.46 | 10.00   | 60.0     | $\pm 3.0 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 15.00   | 85.65                 | 19.05 |         | 60.0     |              |                                  |
|           |                             | Z | 15.00   | 87.33                 | 19.76 |         | 60.0     |              |                                  |
| 10353-AAA | Pulse Waveform (200Hz, 20%) | X | 4.88    | 73.94                 | 13.94 | 6.99    | 80.0     | $\pm 1.7 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 15.00   | 86.82                 | 18.12 |         | 80.0     |              |                                  |
|           |                             | Z | 15.00   | 88.67                 | 19.12 |         | 80.0     |              |                                  |
| 10354-AAA | Pulse Waveform (200Hz, 40%) | X | 7.38    | 78.94                 | 13.73 | 3.98    | 95.0     | $\pm 1.4 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 15.00   | 86.36                 | 16.11 |         | 95.0     |              |                                  |
|           |                             | Z | 15.00   | 93.83                 | 20.13 |         | 95.0     |              |                                  |
| 10355-AAA | Pulse Waveform (200Hz, 60%) | X | 0.64    | 63.16                 | 6.75  | 2.22    | 120.0    | $\pm 1.5 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 13.05   | 81.68                 | 12.64 |         | 120.0    |              |                                  |
|           |                             | Z | 15.00   | 101.47                | 22.26 |         | 120.0    |              |                                  |
| 10387-AAA | QPSK Waveform, 1 MHz        | X | 1.68    | 72.66                 | 15.43 | 0.00    | 150.0    | $\pm 2.7 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 0.57    | 60.00                 | 7.58  |         | 150.0    |              |                                  |
|           |                             | Z | 0.99    | 66.12                 | 11.92 |         | 150.0    |              |                                  |
| 10388-AAA | QPSK Waveform, 10 MHz       | X | 3.08    | 73.93                 | 18.74 | 0.00    | 150.0    | $\pm 1.2 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 2.07    | 67.07                 | 15.14 |         | 150.0    |              |                                  |
|           |                             | Z | 2.60    | 71.16                 | 17.43 |         | 150.0    |              |                                  |
| 10396-AAA | 64-QAM Waveform, 100 kHz    | X | 3.51    | 72.69                 | 19.87 | 3.01    | 150.0    | $\pm 1.6 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 2.69    | 68.94                 | 18.38 |         | 150.0    |              |                                  |
|           |                             | Z | 3.62    | 74.43                 | 20.55 |         | 150.0    |              |                                  |
| 10399-AAA | 64-QAM Waveform, 40 MHz     | X | 3.84    | 69.00                 | 17.04 | 0.00    | 150.0    | $\pm 2.3 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 3.40    | 66.62                 | 15.52 |         | 150.0    |              |                                  |
|           |                             | Z | 3.68    | 68.33                 | 16.53 |         | 150.0    |              |                                  |
| 10414-AAA | WLAN CCDF, 64-QAM, 40MHz    | X | 5.12    | 66.37                 | 16.23 | 0.00    | 150.0    | $\pm 4.3 \%$ | $\pm 9.6 \%$                     |
|           |                             | Y | 4.79    | 65.33                 | 15.44 |         | 150.0    |              |                                  |
|           |                             | Z | 4.99    | 66.28                 | 15.97 |         | 150.0    |              |                                  |

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 5).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3857

### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>$V^{-1}$ | T1<br>$ms.V^{-3}$ | T2<br>$ms.V^{-1}$ | T3<br>ms | T4<br>$V^{-2}$ | T5<br>$V^{-1}$ | T6   |
|---|----------|----------|----------------------|-------------------|-------------------|----------|----------------|----------------|------|
| X | 59.0     | 455.93   | 38.07                | 9.66              | 1.32              | 5.00     | 0.00           | 0.69           | 1.01 |
| Y | 45.9     | 356.07   | 37.98                | 10.21             | 0.83              | 5.05     | 0.00           | 0.48           | 1.01 |
| Z | 48.1     | 356.44   | 35.21                | 11.94             | 0.51              | 5.06     | 1.47           | 0.28           | 1.01 |

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | -43.5      |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 9 mm       |
| Tip Diameter                                  | 2.5 mm     |
| Probe Tip to Sensor X Calibration Point       | 1 mm       |
| Probe Tip to Sensor Y Calibration Point       | 1 mm       |
| Probe Tip to Sensor Z Calibration Point       | 1 mm       |
| Recommended Measurement Distance from Surface | 1.4 mm     |

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3857

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 9.77    | 9.77    | 9.77    | 0.42               | 0.99                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 9.48    | 9.48    | 9.48    | 0.46               | 0.80                    | ± 12.0 %  |
| 900                  | 41.5                               | 0.97                            | 9.34    | 9.34    | 9.34    | 0.29               | 1.12                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 8.46    | 8.46    | 8.46    | 0.34               | 0.80                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 8.10    | 8.10    | 8.10    | 0.34               | 0.80                    | ± 12.0 %  |
| 2000                 | 40.0                               | 1.40                            | 8.04    | 8.04    | 8.04    | 0.26               | 0.88                    | ± 12.0 %  |
| 2300                 | 39.5                               | 1.67                            | 7.88    | 7.88    | 7.88    | 0.33               | 0.90                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 7.50    | 7.50    | 7.50    | 0.37               | 0.93                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 7.31    | 7.31    | 7.31    | 0.35               | 0.93                    | ± 12.0 %  |
| 3300                 | 38.2                               | 2.71                            | 6.96    | 6.96    | 6.96    | 0.30               | 1.25                    | ± 14.0 %  |
| 3500                 | 37.9                               | 2.91                            | 6.92    | 6.92    | 6.92    | 0.30               | 1.25                    | ± 14.0 %  |
| 3700                 | 37.7                               | 3.12                            | 6.65    | 6.65    | 6.65    | 0.30               | 1.25                    | ± 14.0 %  |
| 3900                 | 37.5                               | 3.32                            | 6.60    | 6.60    | 6.60    | 0.40               | 1.60                    | ± 14.0 %  |
| 4100                 | 37.2                               | 3.53                            | 5.99    | 5.99    | 5.99    | 0.40               | 1.60                    | ± 14.0 %  |
| 4200                 | 37.1                               | 3.63                            | 5.98    | 5.98    | 5.98    | 0.40               | 1.70                    | ± 14.0 %  |
| 4400                 | 36.9                               | 3.84                            | 5.86    | 5.86    | 5.86    | 0.45               | 1.75                    | ± 14.0 %  |
| 4600                 | 36.7                               | 4.04                            | 5.83    | 5.83    | 5.83    | 0.45               | 1.75                    | ± 14.0 %  |
| 4800                 | 36.4                               | 4.25                            | 5.73    | 5.73    | 5.73    | 0.45               | 1.75                    | ± 14.0 %  |
| 4950                 | 36.3                               | 4.40                            | 5.53    | 5.53    | 5.53    | 0.40               | 1.80                    | ± 14.0 %  |
| 5250                 | 35.9                               | 4.71                            | 5.19    | 5.19    | 5.19    | 0.40               | 1.80                    | ± 14.0 %  |
| 5600                 | 35.5                               | 5.07                            | 4.92    | 4.92    | 4.92    | 0.40               | 1.80                    | ± 14.0 %  |
| 5750                 | 35.4                               | 5.22                            | 5.17    | 5.17    | 5.17    | 0.40               | 1.80                    | ± 14.0 %  |

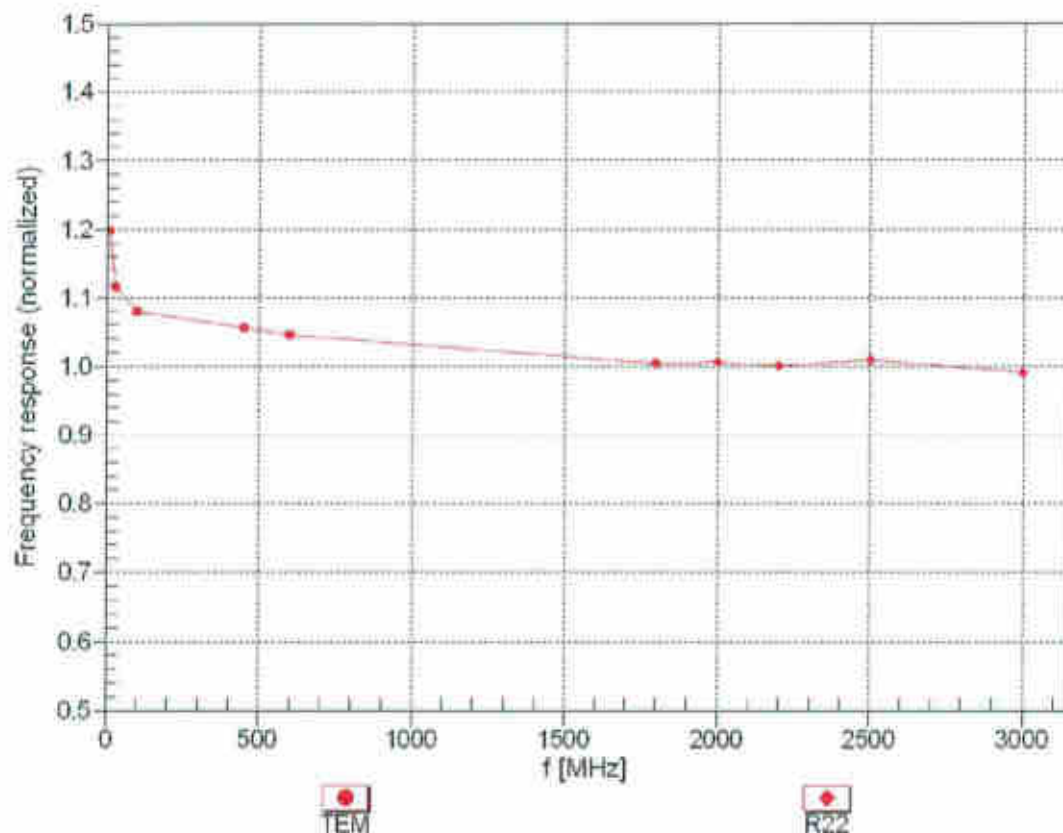
<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## Frequency Response of E-Field

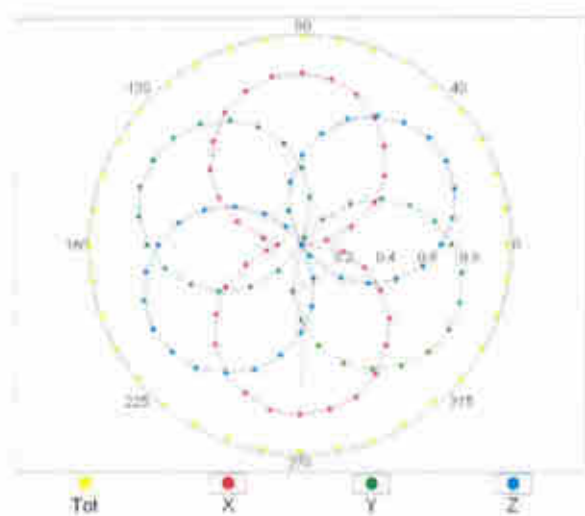
(TEM-Cell:ifi110 EXX, Waveguide: R22)



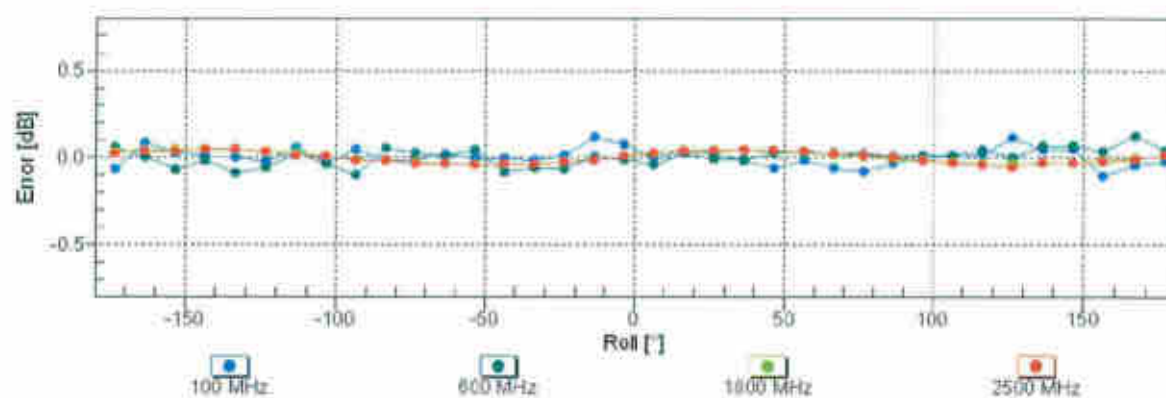
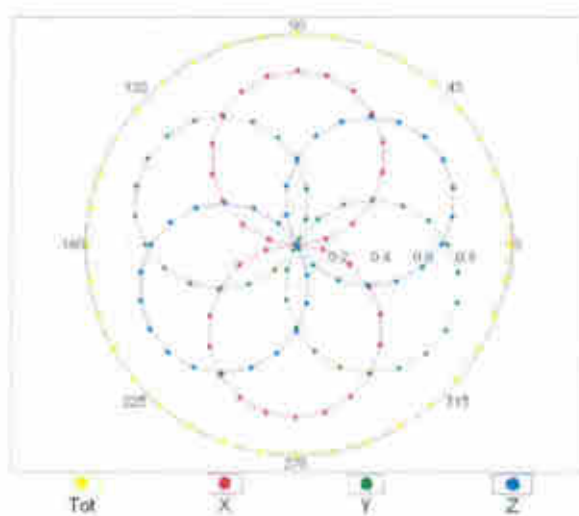
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$

f=600 MHz,TEM

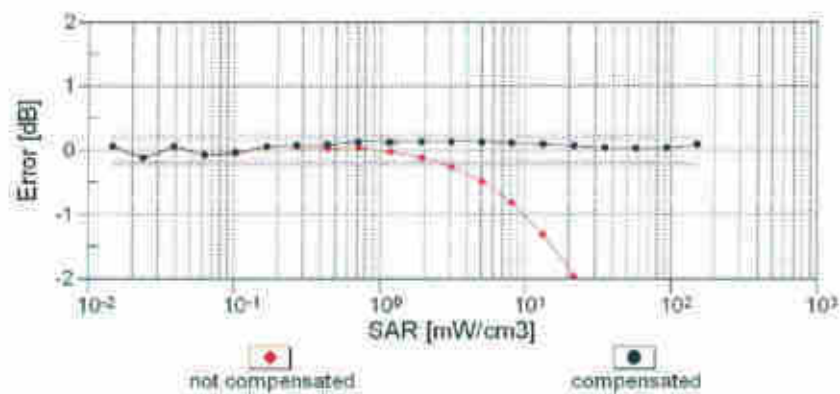
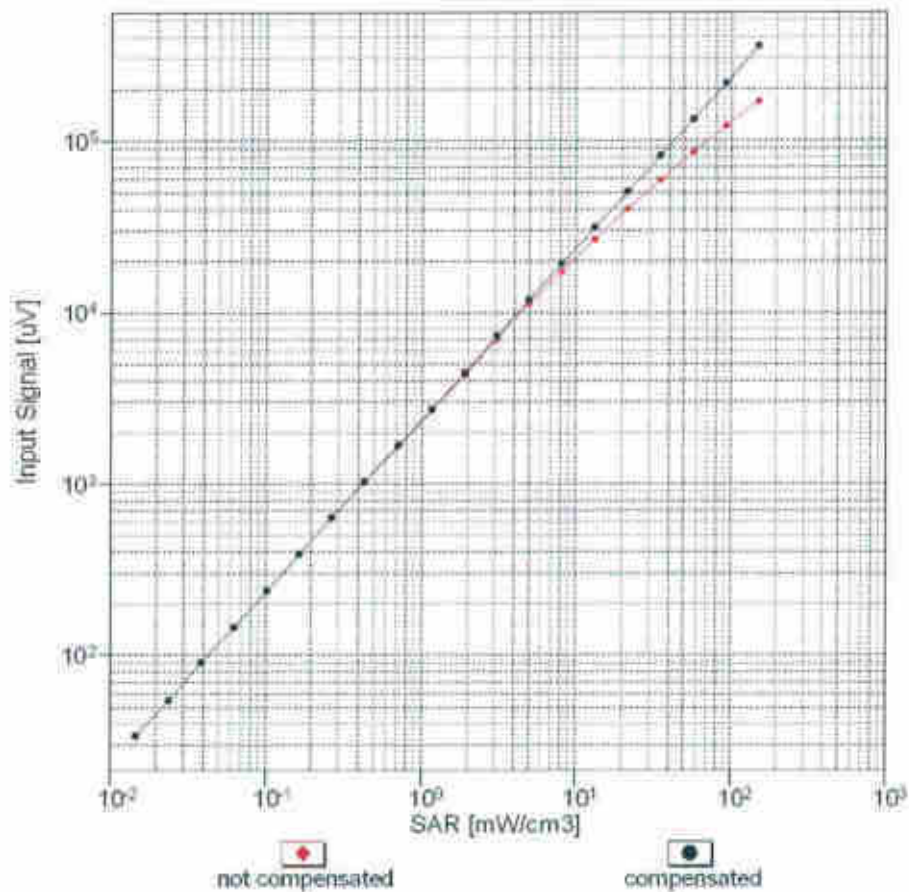


f=1800 MHz,R22



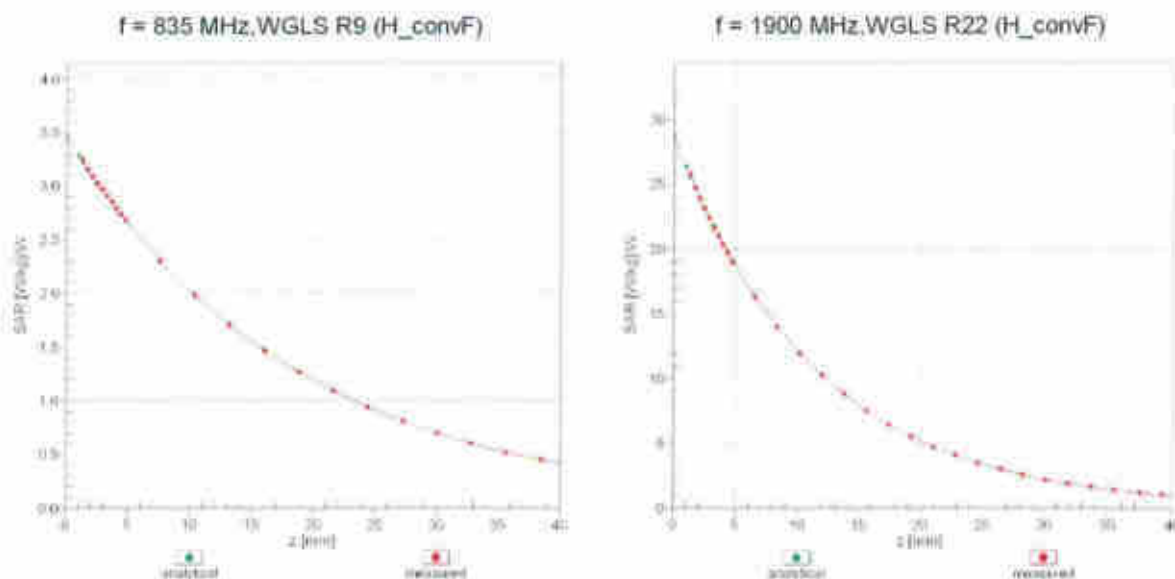
Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

# **Dynamic Range $f(\text{SAR}_{\text{head}})$** (TEM cell , $f_{\text{eval}} \approx 1900 \text{ MHz}$ )



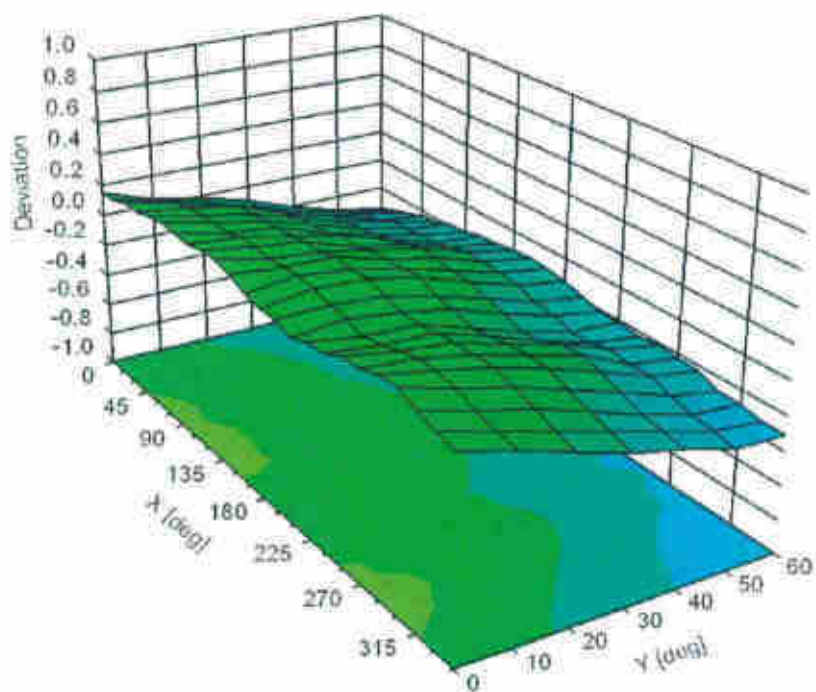
**Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )**

## Conversion Factor Assessment



## Deviation from Isotropy in Liquid

Error ( $\phi, \theta$ ),  $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )

## Appendix: Modulation Calibration Parameters

| UID   | Rev | Communication System Name                           | Group     | PAR (dB) | Unc <sup>F</sup> (k=2) |
|-------|-----|-----------------------------------------------------|-----------|----------|------------------------|
| 0     |     | CW                                                  | CW        | 0.00     | ± 4.7 %                |
| 10010 | CAA | SAR Validation (Square, 100ms, 10ms)                | Test      | 10.00    | ± 9.6 %                |
| 10011 | CAB | UMTS-FDD (WCDMA)                                    | WCDMA     | 2.91     | ± 9.6 %                |
| 10012 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)            | WLAN      | 1.87     | ± 9.6 %                |
| 10013 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)       | WLAN      | 9.46     | ± 9.6 %                |
| 10021 | DAC | GSM-FDD (TDMA, GMSK)                                | GSM       | 9.39     | ± 9.6 %                |
| 10023 | DAC | GPRS-FDD (TDMA, GMSK, TN 0)                         | GSM       | 9.57     | ± 9.6 %                |
| 10024 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1)                       | GSM       | 6.56     | ± 9.6 %                |
| 10025 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0)                         | GSM       | 12.62    | ± 9.6 %                |
| 10026 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1)                       | GSM       | 9.55     | ± 9.6 %                |
| 10027 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2)                     | GSM       | 4.80     | ± 9.6 %                |
| 10028 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)                   | GSM       | 3.55     | ± 9.6 %                |
| 10029 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2)                     | GSM       | 7.78     | ± 9.6 %                |
| 10030 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1)                 | Bluetooth | 5.30     | ± 9.6 %                |
| 10031 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3)                 | Bluetooth | 1.87     | ± 9.6 %                |
| 10032 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5)                 | Bluetooth | 1.16     | ± 9.6 %                |
| 10033 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)           | Bluetooth | 7.74     | ± 9.6 %                |
| 10034 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)           | Bluetooth | 4.53     | ± 9.6 %                |
| 10035 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)           | Bluetooth | 3.83     | ± 9.6 %                |
| 10036 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1)               | Bluetooth | 8.01     | ± 9.6 %                |
| 10037 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3)               | Bluetooth | 4.77     | ± 9.6 %                |
| 10038 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5)               | Bluetooth | 4.10     | ± 9.6 %                |
| 10039 | CAB | CDMA2000 (1xRTT, RC1)                               | CDMA2000  | 4.57     | ± 9.6 %                |
| 10042 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate) | AMPS      | 7.78     | ± 9.6 %                |
| 10044 | CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM)                    | AMPS      | 0.00     | ± 9.6 %                |
| 10048 | CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)           | DECT      | 13.80    | ± 9.6 %                |
| 10049 | CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)         | DECT      | 10.79    | ± 9.6 %                |
| 10056 | CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps)                      | TD-SCDMA  | 11.01    | ± 9.6 %                |
| 10058 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)                   | GSM       | 6.52     | ± 9.6 %                |
| 10059 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)            | WLAN      | 2.12     | ± 9.6 %                |
| 10060 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)          | WLAN      | 2.83     | ± 9.6 %                |
| 10061 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)           | WLAN      | 3.60     | ± 9.6 %                |
| 10062 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)            | WLAN      | 8.68     | ± 9.6 %                |
| 10063 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)            | WLAN      | 8.63     | ± 9.6 %                |
| 10064 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)           | WLAN      | 9.09     | ± 9.6 %                |
| 10065 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)           | WLAN      | 9.00     | ± 9.6 %                |
| 10066 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)           | WLAN      | 9.38     | ± 9.6 %                |
| 10067 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)           | WLAN      | 10.12    | ± 9.6 %                |
| 10068 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)           | WLAN      | 10.24    | ± 9.6 %                |
| 10069 | CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)           | WLAN      | 10.56    | ± 9.6 %                |
| 10071 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)       | WLAN      | 9.83     | ± 9.6 %                |
| 10072 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)      | WLAN      | 9.62     | ± 9.6 %                |
| 10073 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)      | WLAN      | 9.94     | ± 9.6 %                |
| 10074 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)      | WLAN      | 10.30    | ± 9.6 %                |
| 10075 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)      | WLAN      | 10.77    | ± 9.6 %                |
| 10076 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)      | WLAN      | 10.94    | ± 9.6 %                |
| 10077 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)      | WLAN      | 11.00    | ± 9.6 %                |
| 10081 | CAB | CDMA2000 (1xRTT, RC3)                               | CDMA2000  | 3.97     | ± 9.6 %                |
| 10082 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate) | AMPS      | 4.77     | ± 9.6 %                |
| 10090 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-4)                       | GSM       | 6.56     | ± 9.6 %                |
| 10097 | CAB | UMTS-FDD (HSDPA)                                    | WCDMA     | 3.98     | ± 9.6 %                |
| 10098 | CAB | UMTS-FDD (HSUPA, Subtest 2)                         | WCDMA     | 3.98     | ± 9.6 %                |
| 10099 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4)                       | GSM       | 9.55     | ± 9.6 %                |
| 10100 | CAE | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | LTE-FDD   | 5.67     | ± 9.6 %                |
| 10101 | CAE | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | LTE-FDD   | 6.42     | ± 9.6 %                |
| 10102 | CAE | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | LTE-FDD   | 6.60     | ± 9.6 %                |
| 10103 | CAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | LTE-TDD   | 9.29     | ± 9.6 %                |
| 10104 | CAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | LTE-TDD   | 9.97     | ± 9.6 %                |
| 10105 | CAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | LTE-TDD   | 10.01    | ± 9.6 %                |
| 10108 | CAG | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)            | LTE-FDD   | 5.80     | ± 9.6 %                |

|       |     |                                                |         |       |        |
|-------|-----|------------------------------------------------|---------|-------|--------|
| 10109 | CAG | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)     | LTE-FDD | 6.43  | ±9.6 % |
| 10110 | CAG | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)        | LTE-FDD | 5.75  | ±9.6 % |
| 10111 | CAG | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)      | LTE-FDD | 6.44  | ±9.6 % |
| 10112 | CAG | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)     | LTE-FDD | 6.59  | ±9.6 % |
| 10113 | CAG | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)      | LTE-FDD | 6.62  | ±9.6 % |
| 10114 | CAC | IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)  | WLAN    | 8.10  | ±9.6 % |
| 10115 | CAC | IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)  | WLAN    | 8.46  | ±9.6 % |
| 10116 | CAC | IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM) | WLAN    | 8.15  | ±9.6 % |
| 10117 | CAC | IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)       | WLAN    | 8.07  | ±9.6 % |
| 10118 | CAC | IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)       | WLAN    | 8.59  | ±9.6 % |
| 10119 | CAC | IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)      | WLAN    | 8.13  | ±9.6 % |
| 10140 | CAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)     | LTE-FDD | 6.49  | ±9.6 % |
| 10141 | CAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)     | LTE-FDD | 6.53  | ±9.6 % |
| 10142 | CAE | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)        | LTE-FDD | 5.73  | ±9.6 % |
| 10143 | CAE | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)      | LTE-FDD | 6.35  | ±9.6 % |
| 10144 | CAE | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)      | LTE-FDD | 6.65  | ±9.6 % |
| 10145 | CAF | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)      | LTE-FDD | 5.76  | ±9.6 % |
| 10146 | CAF | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)    | LTE-FDD | 6.41  | ±9.6 % |
| 10147 | CAF | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)    | LTE-FDD | 6.72  | ±9.6 % |
| 10149 | CAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)      | LTE-FDD | 6.42  | ±9.6 % |
| 10150 | CAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)      | LTE-FDD | 6.60  | ±9.6 % |
| 10151 | CAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)        | LTE-TDD | 9.28  | ±9.6 % |
| 10152 | CAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)      | LTE-TDD | 9.92  | ±9.6 % |
| 10153 | CAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)      | LTE-TDD | 10.05 | ±9.6 % |
| 10154 | CAG | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)        | LTE-FDD | 5.75  | ±9.6 % |
| 10155 | CAG | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)      | LTE-FDD | 6.43  | ±9.6 % |
| 10156 | CAG | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         | LTE-FDD | 5.79  | ±9.6 % |
| 10157 | CAG | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)       | LTE-FDD | 6.49  | ±9.6 % |
| 10158 | CAG | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)      | LTE-FDD | 6.62  | ±9.6 % |
| 10159 | CAG | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)       | LTE-FDD | 6.56  | ±9.6 % |
| 10160 | CAE | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)        | LTE-FDD | 5.82  | ±9.6 % |
| 10161 | CAE | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)      | LTE-FDD | 6.43  | ±9.6 % |
| 10162 | CAE | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)      | LTE-FDD | 6.58  | ±9.6 % |
| 10166 | CAF | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)       | LTE-FDD | 5.46  | ±9.6 % |
| 10167 | CAF | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)     | LTE-FDD | 6.21  | ±9.6 % |
| 10168 | CAF | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)     | LTE-FDD | 6.79  | ±9.6 % |
| 10169 | CAE | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)          | LTE-FDD | 5.73  | ±9.6 % |
| 10170 | CAE | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)        | LTE-FDD | 6.52  | ±9.6 % |
| 10171 | AAE | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)        | LTE-FDD | 6.49  | ±9.6 % |
| 10172 | CAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)          | LTE-TDD | 9.21  | ±9.6 % |
| 10173 | CAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)        | LTE-TDD | 9.48  | ±9.6 % |
| 10174 | CAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)        | LTE-TDD | 10.25 | ±9.6 % |
| 10175 | CAG | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)          | LTE-FDD | 5.72  | ±9.6 % |
| 10176 | CAG | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)        | LTE-FDD | 6.52  | ±9.6 % |
| 10177 | CAI | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)           | LTE-FDD | 5.73  | ±9.6 % |
| 10178 | CAG | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)         | LTE-FDD | 6.52  | ±9.6 % |
| 10179 | CAG | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)        | LTE-FDD | 6.50  | ±9.6 % |
| 10180 | CAG | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         | LTE-FDD | 6.50  | ±9.6 % |
| 10181 | CAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)          | LTE-FDD | 5.72  | ±9.6 % |
| 10182 | CAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)        | LTE-FDD | 6.52  | ±9.6 % |
| 10183 | AAD | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)        | LTE-FDD | 6.50  | ±9.6 % |
| 10184 | CAE | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)           | LTE-FDD | 5.73  | ±9.6 % |
| 10185 | CAE | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)         | LTE-FDD | 6.51  | ±9.6 % |
| 10186 | AAE | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         | LTE-FDD | 6.50  | ±9.6 % |
| 10187 | CAF | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         | LTE-FDD | 5.73  | ±9.6 % |
| 10188 | CAF | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)       | LTE-FDD | 6.52  | ±9.6 % |
| 10189 | AAF | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)       | LTE-FDD | 6.50  | ±9.6 % |
| 10193 | CAC | IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)   | WLAN    | 8.09  | ±9.6 % |
| 10194 | CAC | IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)  | WLAN    | 8.12  | ±9.6 % |
| 10195 | CAC | IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)  | WLAN    | 8.21  | ±9.6 % |
| 10196 | CAC | IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)        | WLAN    | 8.10  | ±9.6 % |
| 10197 | CAC | IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)       | WLAN    | 8.13  | ±9.6 % |
| 10198 | CAC | IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)       | WLAN    | 8.27  | ±9.6 % |
| 10219 | CAC | IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)        | WLAN    | 8.03  | ±9.6 % |

|       |     |                                             |          |       |         |
|-------|-----|---------------------------------------------|----------|-------|---------|
| 10220 | CAC | IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)  | WLAN     | 8.13  | ± 9.6 % |
| 10221 | CAC | IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)  | WLAN     | 8.27  | ± 9.6 % |
| 10222 | CAC | IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)      | WLAN     | 8.06  | ± 9.6 % |
| 10223 | CAC | IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)    | WLAN     | 8.48  | ± 9.6 % |
| 10224 | CAC | IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)   | WLAN     | 8.08  | ± 9.6 % |
| 10225 | CAB | UMTS-FDD (HSPA+)                            | WCDMA    | 5.97  | ± 9.6 % |
| 10226 | CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)    | LTE-TDD  | 9.49  | ± 9.6 % |
| 10227 | CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)    | LTE-TDD  | 10.26 | ± 9.6 % |
| 10228 | CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)      | LTE-TDD  | 9.22  | ± 9.6 % |
| 10229 | CAC | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)      | LTE-TDD  | 9.48  | ± 9.6 % |
| 10230 | CAC | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)      | LTE-TDD  | 10.25 | ± 9.6 % |
| 10231 | CAC | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)        | LTE-TDD  | 9.19  | ± 9.6 % |
| 10232 | CAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)      | LTE-TDD  | 9.48  | ± 9.6 % |
| 10233 | CAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)      | LTE-TDD  | 10.25 | ± 9.6 % |
| 10234 | CAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)        | LTE-TDD  | 9.21  | ± 9.6 % |
| 10235 | CAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)     | LTE-TDD  | 9.48  | ± 9.6 % |
| 10236 | CAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)     | LTE-TDD  | 10.25 | ± 9.6 % |
| 10237 | CAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       | LTE-TDD  | 9.21  | ± 9.6 % |
| 10238 | CAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)     | LTE-TDD  | 9.48  | ± 9.6 % |
| 10239 | CAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)     | LTE-TDD  | 10.25 | ± 9.6 % |
| 10240 | CAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)       | LTE-TDD  | 9.21  | ± 9.6 % |
| 10241 | CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)  | LTE-TDD  | 9.82  | ± 9.6 % |
| 10242 | CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)  | LTE-TDD  | 9.86  | ± 9.6 % |
| 10243 | CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)    | LTE-TDD  | 9.46  | ± 9.6 % |
| 10244 | CAC | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)    | LTE-TDD  | 10.06 | ± 9.6 % |
| 10245 | CAC | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)    | LTE-TDD  | 10.06 | ± 9.6 % |
| 10246 | CAC | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)      | LTE-TDD  | 9.30  | ± 9.6 % |
| 10247 | CAF | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)    | LTE-TDD  | 9.91  | ± 9.6 % |
| 10248 | CAF | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)    | LTE-TDD  | 10.09 | ± 9.6 % |
| 10249 | CAF | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)      | LTE-TDD  | 9.29  | ± 9.6 % |
| 10250 | CAF | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)   | LTE-TDD  | 9.81  | ± 9.6 % |
| 10251 | CAF | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   | LTE-TDD  | 10.17 | ± 9.6 % |
| 10252 | CAF | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)     | LTE-TDD  | 9.24  | ± 9.6 % |
| 10253 | CAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)   | LTE-TDD  | 9.90  | ± 9.6 % |
| 10254 | CAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)   | LTE-TDD  | 10.14 | ± 9.6 % |
| 10255 | CAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)     | LTE-TDD  | 9.20  | ± 9.6 % |
| 10256 | CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM) | LTE-TDD  | 9.96  | ± 9.6 % |
| 10257 | CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM) | LTE-TDD  | 10.08 | ± 9.6 % |
| 10258 | CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)   | LTE-TDD  | 9.34  | ± 9.6 % |
| 10259 | CAC | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)   | LTE-TDD  | 9.98  | ± 9.6 % |
| 10260 | CAC | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   | LTE-TDD  | 9.97  | ± 9.6 % |
| 10261 | CAC | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)     | LTE-TDD  | 9.24  | ± 9.6 % |
| 10262 | CAF | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)   | LTE-TDD  | 9.83  | ± 9.6 % |
| 10263 | CAF | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)   | LTE-TDD  | 10.16 | ± 9.6 % |
| 10264 | CAF | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)     | LTE-TDD  | 9.23  | ± 9.6 % |
| 10265 | CAF | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)  | LTE-TDD  | 9.92  | ± 9.6 % |
| 10266 | CAF | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)  | LTE-TDD  | 10.07 | ± 9.6 % |
| 10267 | CAF | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)    | LTE-TDD  | 9.30  | ± 9.6 % |
| 10268 | CAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)  | LTE-TDD  | 10.06 | ± 9.6 % |
| 10269 | CAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)  | LTE-TDD  | 10.13 | ± 9.6 % |
| 10270 | CAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)    | LTE-TDD  | 9.58  | ± 9.6 % |
| 10274 | CAB | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)   | WCDMA    | 4.87  | ± 9.6 % |
| 10275 | CAB | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)    | WCDMA    | 3.96  | ± 9.6 % |
| 10277 | CAA | PHS (QPSK)                                  | PHS      | 11.81 | ± 9.6 % |
| 10278 | CAA | PHS (QPSK, BW 884MHz, Rolloff 0.5)          | PHS      | 11.81 | ± 9.6 % |
| 10279 | CAA | PHS (QPSK, BW 884MHz, Rolloff 0.38)         | PHS      | 12.18 | ± 9.6 % |
| 10290 | AAB | CDMA2000, RC1, SO55, Full Rate              | CDMA2000 | 3.91  | ± 9.6 % |
| 10291 | AAB | CDMA2000, RC3, SO55, Full Rate              | CDMA2000 | 3.46  | ± 9.6 % |
| 10292 | AAB | CDMA2000, RC3, SO32, Full Rate              | CDMA2000 | 3.39  | ± 9.6 % |
| 10293 | AAB | CDMA2000, RC3, SO3, Full Rate               | CDMA2000 | 3.50  | ± 9.6 % |
| 10295 | AAB | CDMA2000, RC1, SO3, 1/8th Rate 25 fr.       | CDMA2000 | 12.49 | ± 9.6 % |
| 10297 | AAD | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)     | LTE-FDD  | 5.81  | ± 9.6 % |
| 10298 | AAD | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)      | LTE-FDD  | 5.72  | ± 9.6 % |
| 10299 | AAD | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)    | LTE-FDD  | 6.39  | ± 9.6 % |

|       |     |                                                                                 |          |       |         |
|-------|-----|---------------------------------------------------------------------------------|----------|-------|---------|
| 10300 | AAD | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                                        | LTE-FDD  | 6.60  | ± 9.6 % |
| 10301 | AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)                              | WiMAX    | 12.03 | ± 9.6 % |
| 10302 | AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)              | WiMAX    | 12.57 | ± 9.6 % |
| 10303 | AAA | IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)                             | WiMAX    | 12.52 | ± 9.6 % |
| 10304 | AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)                             | WiMAX    | 11.86 | ± 9.6 % |
| 10305 | AAA | IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)                | WiMAX    | 15.24 | ± 9.6 % |
| 10306 | AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)                | WiMAX    | 14.67 | ± 9.6 % |
| 10307 | AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)                 | WiMAX    | 14.49 | ± 9.6 % |
| 10308 | AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)                            | WiMAX    | 14.46 | ± 9.6 % |
| 10309 | AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)             | WiMAX    | 14.58 | ± 9.6 % |
| 10310 | AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)              | WiMAX    | 14.57 | ± 9.6 % |
| 10311 | AAD | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)                                        | LTE-FDD  | 6.06  | ± 9.6 % |
| 10313 | AAA | IDEN 1:3                                                                        | IDEN     | 10.51 | ± 9.6 % |
| 10314 | AAA | IDEN 1:6                                                                        | IDEN     | 13.48 | ± 9.6 % |
| 10315 | AAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)                       | WLAN     | 1.71  | ± 9.6 % |
| 10316 | AAB | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)                   | WLAN     | 8.36  | ± 9.6 % |
| 10317 | AAC | IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)                         | WLAN     | 8.36  | ± 9.6 % |
| 10352 | AAA | Pulse Waveform (200Hz, 10%)                                                     | Generic  | 10.00 | ± 9.6 % |
| 10353 | AAA | Pulse Waveform (200Hz, 20%)                                                     | Generic  | 6.99  | ± 9.6 % |
| 10354 | AAA | Pulse Waveform (200Hz, 40%)                                                     | Generic  | 3.98  | ± 9.6 % |
| 10355 | AAA | Pulse Waveform (200Hz, 60%)                                                     | Generic  | 2.22  | ± 9.6 % |
| 10356 | AAA | Pulse Waveform (200Hz, 80%)                                                     | Generic  | 0.97  | ± 9.6 % |
| 10387 | AAA | QPSK Waveform, 1 MHz                                                            | Generic  | 5.10  | ± 9.6 % |
| 10388 | AAA | QPSK Waveform, 10 MHz                                                           | Generic  | 5.22  | ± 9.6 % |
| 10396 | AAA | 64-QAM Waveform, 100 kHz                                                        | Generic  | 6.27  | ± 9.6 % |
| 10399 | AAA | 64-QAM Waveform, 40 MHz                                                         | Generic  | 6.27  | ± 9.6 % |
| 10400 | AAD | IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)                             | WLAN     | 8.37  | ± 9.6 % |
| 10401 | AAD | IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)                             | WLAN     | 8.60  | ± 9.6 % |
| 10402 | AAD | IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)                             | WLAN     | 8.53  | ± 9.6 % |
| 10403 | AAB | CDMA2000 (1xEV-DO, Rev. 0)                                                      | CDMA2000 | 3.76  | ± 9.6 % |
| 10404 | AAB | CDMA2000 (1xEV-DO, Rev. A)                                                      | CDMA2000 | 3.77  | ± 9.6 % |
| 10406 | AAB | CDMA2000, RC3, SO32, SCH0, Full Rate                                            | CDMA2000 | 5.22  | ± 9.6 % |
| 10410 | AAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4) | LTE-TDD  | 7.82  | ± 9.6 % |
| 10414 | AAA | WLAN CCDF, 64-QAM, 40MHz                                                        | Generic  | 8.54  | ± 9.6 % |
| 10415 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)                       | WLAN     | 1.54  | ± 9.6 % |
| 10416 | AAA | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)                   | WLAN     | 8.23  | ± 9.6 % |
| 10417 | AAB | IEEE 802.11a/n WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)                       | WLAN     | 8.23  | ± 9.6 % |
| 10418 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)   | WLAN     | 8.14  | ± 9.6 % |
| 10419 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)  | WLAN     | 8.19  | ± 9.6 % |
| 10422 | AAB | IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)                                    | WLAN     | 8.32  | ± 9.6 % |
| 10423 | AAB | IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)                                 | WLAN     | 8.47  | ± 9.6 % |
| 10424 | AAB | IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)                                 | WLAN     | 8.40  | ± 9.6 % |
| 10425 | AAB | IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)                                     | WLAN     | 8.41  | ± 9.6 % |
| 10426 | AAB | IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)                                   | WLAN     | 8.45  | ± 9.6 % |
| 10427 | AAB | IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)                                  | WLAN     | 8.41  | ± 9.6 % |
| 10430 | AAD | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)                                                | LTE-FDD  | 8.28  | ± 9.6 % |
| 10431 | AAD | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)                                               | LTE-FDD  | 8.38  | ± 9.6 % |
| 10432 | AAC | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)                                               | LTE-FDD  | 8.34  | ± 9.6 % |
| 10433 | AAC | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)                                               | LTE-FDD  | 8.34  | ± 9.6 % |
| 10434 | AAA | W-CDMA (BS Test Model 1, 64 DPCH)                                               | WCDMA    | 8.60  | ± 9.6 % |
| 10435 | AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                  | LTE-TDD  | 7.82  | ± 9.6 % |
| 10447 | AAD | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)                                  | LTE-FDD  | 7.56  | ± 9.6 % |
| 10448 | AAD | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.53  | ± 9.6 % |
| 10449 | AAC | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.51  | ± 9.6 % |
| 10450 | AAC | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.48  | ± 9.6 % |

|       |     |                                                                        |          |      |         |
|-------|-----|------------------------------------------------------------------------|----------|------|---------|
| 10451 | AAA | W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)                        | WCDMA    | 7.59 | ± 9.6 % |
| 10456 | AAB | IEEE 802.11ac WiFi (160MHz, 64-QAM, 99% duty cycle)                    | WLAN     | 8.63 | ± 9.6 % |
| 10457 | AAA | UMTS-FDD (DC-HSDPA)                                                    | WCDMA    | 6.62 | ± 9.6 % |
| 10458 | AAA | CDMA2000 (1xEV-DO, Rev. B, 2 carriers)                                 | CDMA2000 | 6.55 | ± 9.6 % |
| 10459 | AAA | CDMA2000 (1xEV-DO, Rev. B, 3 carriers)                                 | CDMA2000 | 8.25 | ± 9.6 % |
| 10460 | AAA | UMTS-FDD (WCDMA, AMR)                                                  | WCDMA    | 2.39 | ± 9.6 % |
| 10461 | AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 7.82 | ± 9.6 % |
| 10462 | AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 8.30 | ± 9.6 % |
| 10463 | AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 8.56 | ± 9.6 % |
| 10464 | AAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)       | LTE-TDD  | 7.82 | ± 9.6 % |
| 10465 | AAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 8.32 | ± 9.6 % |
| 10466 | AAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 8.57 | ± 9.6 % |
| 10467 | AAE | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)       | LTE-TDD  | 7.82 | ± 9.6 % |
| 10468 | AAE | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 8.32 | ± 9.6 % |
| 10469 | AAE | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 8.56 | ± 9.6 % |
| 10470 | AAE | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)      | LTE-TDD  | 7.82 | ± 9.6 % |
| 10471 | AAE | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 8.32 | ± 9.6 % |
| 10472 | AAE | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 8.57 | ± 9.6 % |
| 10473 | AAE | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)      | LTE-TDD  | 7.82 | ± 9.6 % |
| 10474 | AAE | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 8.32 | ± 9.6 % |
| 10475 | AAE | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 8.57 | ± 9.6 % |
| 10477 | AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 8.32 | ± 9.6 % |
| 10478 | AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 8.57 | ± 9.6 % |
| 10479 | AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 7.74 | ± 9.6 % |
| 10480 | AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9) | LTE-TDD  | 8.18 | ± 9.6 % |
| 10481 | AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9) | LTE-TDD  | 8.45 | ± 9.6 % |
| 10482 | AAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 7.71 | ± 9.6 % |
| 10483 | AAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 8.39 | ± 9.6 % |
| 10484 | AAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 8.47 | ± 9.6 % |
| 10485 | AAE | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)     | LTE-TDD  | 7.59 | ± 9.6 % |
| 10486 | AAE | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 8.38 | ± 9.6 % |
| 10487 | AAE | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)   | LTE-TDD  | 8.60 | ± 9.6 % |
| 10488 | AAE | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 7.70 | ± 9.6 % |
| 10489 | AAE | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL<br>Subframe=2,3,4,7,8,9)  | LTE-TDD  | 8.31 | ± 9.6 % |
| 10490 | AAE | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL<br>Subframe=2,3,4,7,8,9)  | LTE-TDD  | 8.54 | ± 9.6 % |
| 10491 | AAE | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL<br>Subframe=2,3,4,7,8,9)    | LTE-TDD  | 7.74 | ± 9.6 % |

|       |     |                                                                      |         |      |         |
|-------|-----|----------------------------------------------------------------------|---------|------|---------|
| 10492 | AAE | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.41 | ± 9.6 % |
| 10493 | AAE | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.55 | ± 9.6 % |
| 10494 | AAF | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.74 | ± 9.6 % |
| 10495 | AAF | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.37 | ± 9.6 % |
| 10496 | AAF | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54 | ± 9.6 % |
| 10497 | AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 7.67 | ± 9.6 % |
| 10498 | AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.40 | ± 9.6 % |
| 10499 | AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.68 | ± 9.6 % |
| 10500 | AAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.67 | ± 9.6 % |
| 10501 | AAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.44 | ± 9.6 % |
| 10502 | AAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.52 | ± 9.6 % |
| 10503 | AAE | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.72 | ± 9.6 % |
| 10504 | AAE | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.31 | ± 9.6 % |
| 10505 | AAE | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54 | ± 9.6 % |
| 10506 | AAE | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74 | ± 9.6 % |
| 10507 | AAE | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.36 | ± 9.6 % |
| 10508 | AAE | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.55 | ± 9.6 % |
| 10509 | AAE | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.99 | ± 9.6 % |
| 10510 | AAE | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.49 | ± 9.6 % |
| 10511 | AAE | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.51 | ± 9.6 % |
| 10512 | AAF | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74 | ± 9.6 % |
| 10513 | AAF | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.42 | ± 9.6 % |
| 10514 | AAF | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.45 | ± 9.6 % |
| 10515 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)            | WLAN    | 1.58 | ± 9.6 % |
| 10516 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)          | WLAN    | 1.57 | ± 9.6 % |
| 10517 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)           | WLAN    | 1.58 | ± 9.6 % |
| 10518 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)            | WLAN    | 8.23 | ± 9.6 % |
| 10519 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)           | WLAN    | 8.39 | ± 9.6 % |
| 10520 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)           | WLAN    | 8.12 | ± 9.6 % |
| 10521 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)           | WLAN    | 7.97 | ± 9.6 % |
| 10522 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)           | WLAN    | 8.45 | ± 9.6 % |
| 10523 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)           | WLAN    | 8.08 | ± 9.6 % |
| 10524 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)           | WLAN    | 8.27 | ± 9.6 % |
| 10525 | AAB | IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)                    | WLAN    | 8.36 | ± 9.6 % |
| 10526 | AAB | IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)                    | WLAN    | 8.42 | ± 9.6 % |
| 10527 | AAB | IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)                    | WLAN    | 8.21 | ± 9.6 % |
| 10528 | AAB | IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)                    | WLAN    | 8.36 | ± 9.6 % |
| 10529 | AAB | IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)                    | WLAN    | 8.36 | ± 9.6 % |
| 10531 | AAB | IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)                    | WLAN    | 8.43 | ± 9.6 % |
| 10532 | AAB | IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)                    | WLAN    | 8.29 | ± 9.6 % |
| 10533 | AAB | IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)                    | WLAN    | 8.38 | ± 9.6 % |
| 10534 | AAB | IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)                    | WLAN    | 8.45 | ± 9.6 % |

|       |     |                                                                 |      |      |        |
|-------|-----|-----------------------------------------------------------------|------|------|--------|
| 10535 | AAB | IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)               | WLAN | 8.45 | ±9.6 % |
| 10536 | AAB | IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)               | WLAN | 8.32 | ±9.6 % |
| 10537 | AAB | IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)               | WLAN | 8.44 | ±9.6 % |
| 10538 | AAB | IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)               | WLAN | 8.54 | ±9.6 % |
| 10540 | AAB | IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)               | WLAN | 8.39 | ±9.6 % |
| 10541 | AAB | IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)               | WLAN | 8.46 | ±9.6 % |
| 10542 | AAB | IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)               | WLAN | 8.65 | ±9.6 % |
| 10543 | AAB | IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)               | WLAN | 8.65 | ±9.6 % |
| 10544 | AAB | IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)               | WLAN | 8.47 | ±9.6 % |
| 10545 | AAB | IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)               | WLAN | 8.55 | ±9.6 % |
| 10546 | AAB | IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)               | WLAN | 8.35 | ±9.6 % |
| 10547 | AAB | IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)               | WLAN | 8.49 | ±9.6 % |
| 10548 | AAB | IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)               | WLAN | 8.37 | ±9.6 % |
| 10550 | AAB | IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)               | WLAN | 8.38 | ±9.6 % |
| 10551 | AAB | IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)               | WLAN | 8.50 | ±9.6 % |
| 10552 | AAB | IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)               | WLAN | 8.42 | ±9.6 % |
| 10553 | AAB | IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)               | WLAN | 8.45 | ±9.6 % |
| 10554 | AAC | IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)              | WLAN | 8.48 | ±9.6 % |
| 10555 | AAC | IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)              | WLAN | 8.47 | ±9.6 % |
| 10556 | AAC | IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)              | WLAN | 8.50 | ±9.6 % |
| 10557 | AAC | IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)              | WLAN | 8.52 | ±9.6 % |
| 10558 | AAC | IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)              | WLAN | 8.61 | ±9.6 % |
| 10560 | AAC | IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)              | WLAN | 8.73 | ±9.6 % |
| 10561 | AAC | IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)              | WLAN | 8.56 | ±9.6 % |
| 10562 | AAC | IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)              | WLAN | 8.69 | ±9.6 % |
| 10563 | AAC | IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)              | WLAN | 8.77 | ±9.6 % |
| 10564 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)  | WLAN | 8.25 | ±9.6 % |
| 10565 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | WLAN | 8.45 | ±9.6 % |
| 10566 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | WLAN | 8.13 | ±9.6 % |
| 10567 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | WLAN | 8.00 | ±9.6 % |
| 10568 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | WLAN | 8.37 | ±9.6 % |
| 10569 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | WLAN | 8.10 | ±9.6 % |
| 10570 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | WLAN | 8.30 | ±9.6 % |
| 10571 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)       | WLAN | 1.99 | ±9.6 % |
| 10572 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)       | WLAN | 1.99 | ±9.6 % |
| 10573 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)     | WLAN | 1.98 | ±9.6 % |
| 10574 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)      | WLAN | 1.98 | ±9.6 % |
| 10575 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)  | WLAN | 8.59 | ±9.6 % |
| 10576 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)  | WLAN | 8.60 | ±9.6 % |
| 10577 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | WLAN | 8.70 | ±9.6 % |
| 10578 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | WLAN | 8.49 | ±9.6 % |
| 10579 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | WLAN | 8.36 | ±9.6 % |
| 10580 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | WLAN | 8.76 | ±9.6 % |
| 10581 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | WLAN | 8.35 | ±9.6 % |
| 10582 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | WLAN | 8.67 | ±9.6 % |
| 10583 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)       | WLAN | 8.59 | ±9.6 % |
| 10584 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)       | WLAN | 8.60 | ±9.6 % |
| 10585 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)      | WLAN | 8.70 | ±9.6 % |
| 10586 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)      | WLAN | 8.49 | ±9.6 % |
| 10587 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)      | WLAN | 8.36 | ±9.6 % |

|       |     |                                                            |          |       |         |
|-------|-----|------------------------------------------------------------|----------|-------|---------|
| 10588 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle) | WLAN     | 8.76  | ± 9.6 % |
| 10589 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle) | WLAN     | 8.35  | ± 9.6 % |
| 10590 | AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle) | WLAN     | 8.67  | ± 9.6 % |
| 10591 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)      | WLAN     | 8.63  | ± 9.6 % |
| 10592 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)      | WLAN     | 8.79  | ± 9.6 % |
| 10593 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)      | WLAN     | 8.64  | ± 9.6 % |
| 10594 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)      | WLAN     | 8.74  | ± 9.6 % |
| 10595 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)      | WLAN     | 8.74  | ± 9.6 % |
| 10596 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)      | WLAN     | 8.71  | ± 9.6 % |
| 10597 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)      | WLAN     | 8.72  | ± 9.6 % |
| 10598 | AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)      | WLAN     | 8.50  | ± 9.6 % |
| 10599 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)      | WLAN     | 8.79  | ± 9.6 % |
| 10600 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)      | WLAN     | 8.88  | ± 9.6 % |
| 10601 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)      | WLAN     | 8.82  | ± 9.6 % |
| 10602 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)      | WLAN     | 8.94  | ± 9.6 % |
| 10603 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)      | WLAN     | 9.03  | ± 9.6 % |
| 10604 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)      | WLAN     | 8.76  | ± 9.6 % |
| 10605 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)      | WLAN     | 8.97  | ± 9.6 % |
| 10606 | AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)      | WLAN     | 8.82  | ± 9.6 % |
| 10607 | AAB | IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)          | WLAN     | 8.64  | ± 9.6 % |
| 10608 | AAB | IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)          | WLAN     | 8.77  | ± 9.6 % |
| 10609 | AAB | IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)          | WLAN     | 8.57  | ± 9.6 % |
| 10610 | AAB | IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)          | WLAN     | 8.78  | ± 9.6 % |
| 10611 | AAB | IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)          | WLAN     | 8.70  | ± 9.6 % |
| 10612 | AAB | IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)          | WLAN     | 8.77  | ± 9.6 % |
| 10613 | AAB | IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)          | WLAN     | 8.94  | ± 9.6 % |
| 10614 | AAB | IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)          | WLAN     | 8.59  | ± 9.6 % |
| 10615 | AAB | IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)          | WLAN     | 8.82  | ± 9.6 % |
| 10616 | AAB | IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)          | WLAN     | 8.82  | ± 9.6 % |
| 10617 | AAB | IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)          | WLAN     | 8.81  | ± 9.6 % |
| 10618 | AAB | IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)          | WLAN     | 8.58  | ± 9.6 % |
| 10619 | AAB | IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)          | WLAN     | 8.86  | ± 9.6 % |
| 10620 | AAB | IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)          | WLAN     | 8.87  | ± 9.6 % |
| 10621 | AAB | IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)          | WLAN     | 8.77  | ± 9.6 % |
| 10622 | AAB | IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)          | WLAN     | 8.68  | ± 9.6 % |
| 10623 | AAB | IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)          | WLAN     | 8.82  | ± 9.6 % |
| 10624 | AAB | IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)          | WLAN     | 8.96  | ± 9.6 % |
| 10625 | AAB | IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)          | WLAN     | 8.96  | ± 9.6 % |
| 10626 | AAB | IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)          | WLAN     | 8.83  | ± 9.6 % |
| 10627 | AAB | IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)          | WLAN     | 8.88  | ± 9.6 % |
| 10628 | AAB | IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)          | WLAN     | 8.71  | ± 9.6 % |
| 10629 | AAB | IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)          | WLAN     | 8.85  | ± 9.6 % |
| 10630 | AAB | IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)          | WLAN     | 8.72  | ± 9.6 % |
| 10631 | AAB | IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)          | WLAN     | 8.81  | ± 9.6 % |
| 10632 | AAB | IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)          | WLAN     | 8.74  | ± 9.6 % |
| 10633 | AAB | IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)          | WLAN     | 8.83  | ± 9.6 % |
| 10634 | AAB | IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)          | WLAN     | 8.80  | ± 9.6 % |
| 10635 | AAB | IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)          | WLAN     | 8.81  | ± 9.6 % |
| 10636 | AAC | IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)         | WLAN     | 8.83  | ± 9.6 % |
| 10637 | AAC | IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)         | WLAN     | 8.79  | ± 9.6 % |
| 10638 | AAC | IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)         | WLAN     | 8.86  | ± 9.6 % |
| 10639 | AAC | IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)         | WLAN     | 8.85  | ± 9.6 % |
| 10640 | AAC | IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)         | WLAN     | 8.98  | ± 9.6 % |
| 10641 | AAC | IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)         | WLAN     | 9.06  | ± 9.6 % |
| 10642 | AAC | IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)         | WLAN     | 9.06  | ± 9.6 % |
| 10643 | AAC | IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)         | WLAN     | 8.89  | ± 9.6 % |
| 10644 | AAC | IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)         | WLAN     | 9.05  | ± 9.6 % |
| 10645 | AAC | IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)         | WLAN     | 9.11  | ± 9.6 % |
| 10646 | AAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)      | LTE-TDD  | 11.96 | ± 9.6 % |
| 10647 | AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)     | LTE-TDD  | 11.96 | ± 9.6 % |
| 10648 | AAA | CDMA2000 (1x Advanced)                                     | CDMA2000 | 3.45  | ± 9.6 % |
| 10652 | AAD | LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)             | LTE-TDD  | 6.91  | ± 9.6 % |
| 10653 | AAD | LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)            | LTE-TDD  | 7.42  | ± 9.6 % |
| 10654 | AAD | LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)            | LTE-TDD  | 6.96  | ± 9.6 % |

|       |     |                                                 |           |       |         |
|-------|-----|-------------------------------------------------|-----------|-------|---------|
| 10655 | AAE | LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%) | LTE-TDD   | 7.21  | ± 9.6 % |
| 10658 | AAA | Pulse Waveform (200Hz, 10%)                     | Test      | 10.00 | ± 9.6 % |
| 10659 | AAA | Pulse Waveform (200Hz, 20%)                     | Test      | 6.99  | ± 9.6 % |
| 10660 | AAA | Pulse Waveform (200Hz, 40%)                     | Test      | 3.98  | ± 9.6 % |
| 10661 | AAA | Pulse Waveform (200Hz, 60%)                     | Test      | 2.22  | ± 9.6 % |
| 10662 | AAA | Pulse Waveform (200Hz, 80%)                     | Test      | 0.97  | ± 9.6 % |
| 10670 | AAA | Bluetooth Low Energy                            | Bluetooth | 2.19  | ± 9.6 % |
| 10671 | AAA | IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)    | WLAN      | 9.09  | ± 9.6 % |
| 10672 | AAA | IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)    | WLAN      | 8.57  | ± 9.6 % |
| 10673 | AAA | IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)    | WLAN      | 8.78  | ± 9.6 % |
| 10674 | AAA | IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)    | WLAN      | 8.74  | ± 9.6 % |
| 10675 | AAA | IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)    | WLAN      | 8.90  | ± 9.6 % |
| 10676 | AAA | IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)    | WLAN      | 8.77  | ± 9.6 % |
| 10677 | AAA | IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)    | WLAN      | 8.73  | ± 9.6 % |
| 10678 | AAA | IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)    | WLAN      | 8.78  | ± 9.6 % |
| 10679 | AAA | IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)    | WLAN      | 8.89  | ± 9.6 % |
| 10680 | AAA | IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)    | WLAN      | 8.80  | ± 9.6 % |
| 10681 | AAA | IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)   | WLAN      | 8.62  | ± 9.6 % |
| 10682 | AAA | IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)   | WLAN      | 8.83  | ± 9.6 % |
| 10683 | AAA | IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)    | WLAN      | 8.42  | ± 9.6 % |
| 10684 | AAA | IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)    | WLAN      | 8.26  | ± 9.6 % |
| 10685 | AAA | IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)    | WLAN      | 8.33  | ± 9.6 % |
| 10686 | AAA | IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)    | WLAN      | 8.28  | ± 9.6 % |
| 10687 | AAA | IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)    | WLAN      | 8.45  | ± 9.6 % |
| 10688 | AAA | IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)    | WLAN      | 8.29  | ± 9.6 % |
| 10689 | AAA | IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)    | WLAN      | 8.55  | ± 9.6 % |
| 10690 | AAA | IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)    | WLAN      | 8.29  | ± 9.6 % |
| 10691 | AAA | IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)    | WLAN      | 8.25  | ± 9.6 % |
| 10692 | AAA | IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)    | WLAN      | 8.29  | ± 9.6 % |
| 10693 | AAA | IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)   | WLAN      | 8.25  | ± 9.6 % |
| 10694 | AAA | IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)   | WLAN      | 8.57  | ± 9.6 % |
| 10695 | AAA | IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)    | WLAN      | 8.78  | ± 9.6 % |
| 10696 | AAA | IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)    | WLAN      | 8.91  | ± 9.6 % |
| 10697 | AAA | IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle)    | WLAN      | 8.61  | ± 9.6 % |
| 10698 | AAA | IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)    | WLAN      | 8.89  | ± 9.6 % |
| 10699 | AAA | IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)    | WLAN      | 8.82  | ± 9.6 % |
| 10700 | AAA | IEEE 802.11ax (40MHz, MCS5, 90pc duty cycle)    | WLAN      | 8.73  | ± 9.6 % |
| 10701 | AAA | IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)    | WLAN      | 8.86  | ± 9.6 % |
| 10702 | AAA | IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)    | WLAN      | 8.70  | ± 9.6 % |
| 10703 | AAA | IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)    | WLAN      | 8.82  | ± 9.6 % |
| 10704 | AAA | IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)    | WLAN      | 8.56  | ± 9.6 % |
| 10705 | AAA | IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)   | WLAN      | 8.69  | ± 9.6 % |
| 10706 | AAA | IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)   | WLAN      | 8.66  | ± 9.6 % |
| 10707 | AAA | IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)    | WLAN      | 8.32  | ± 9.6 % |
| 10708 | AAA | IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)    | WLAN      | 8.55  | ± 9.6 % |
| 10709 | AAA | IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)    | WLAN      | 8.33  | ± 9.6 % |
| 10710 | AAA | IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)    | WLAN      | 8.29  | ± 9.6 % |
| 10711 | AAA | IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)    | WLAN      | 8.39  | ± 9.6 % |
| 10712 | AAA | IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)    | WLAN      | 8.67  | ± 9.6 % |
| 10713 | AAA | IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)    | WLAN      | 8.33  | ± 9.6 % |
| 10714 | AAA | IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)    | WLAN      | 8.26  | ± 9.6 % |
| 10715 | AAA | IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)    | WLAN      | 8.45  | ± 9.6 % |
| 10716 | AAA | IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)    | WLAN      | 8.30  | ± 9.6 % |
| 10717 | AAA | IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)   | WLAN      | 8.48  | ± 9.6 % |
| 10718 | AAA | IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)   | WLAN      | 8.24  | ± 9.6 % |
| 10719 | AAA | IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)    | WLAN      | 8.81  | ± 9.6 % |
| 10720 | AAA | IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)    | WLAN      | 8.87  | ± 9.6 % |
| 10721 | AAA | IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)    | WLAN      | 8.76  | ± 9.6 % |
| 10722 | AAA | IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)    | WLAN      | 8.55  | ± 9.6 % |
| 10723 | AAA | IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)    | WLAN      | 8.70  | ± 9.6 % |
| 10724 | AAA | IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)    | WLAN      | 8.90  | ± 9.6 % |
| 10725 | AAA | IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle)    | WLAN      | 8.74  | ± 9.6 % |
| 10726 | AAA | IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle)    | WLAN      | 8.72  | ± 9.6 % |
| 10727 | AAA | IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)    | WLAN      | 8.66  | ± 9.6 % |

|       |     |                                                |      |      |         |
|-------|-----|------------------------------------------------|------|------|---------|
| 10728 | AAA | IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)   | WLAN | 8.65 | ± 9.6 % |
| 10729 | AAA | IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)  | WLAN | 8.64 | ± 9.6 % |
| 10730 | AAA | IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)  | WLAN | 8.67 | ± 9.6 % |
| 10731 | AAA | IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)   | WLAN | 8.42 | ± 9.6 % |
| 10732 | AAA | IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)   | WLAN | 8.46 | ± 9.6 % |
| 10733 | AAA | IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)   | WLAN | 8.40 | ± 9.6 % |
| 10734 | AAA | IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)   | WLAN | 8.25 | ± 9.6 % |
| 10735 | AAA | IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)   | WLAN | 8.33 | ± 9.6 % |
| 10736 | AAA | IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)   | WLAN | 8.27 | ± 9.6 % |
| 10737 | AAA | IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)   | WLAN | 8.36 | ± 9.6 % |
| 10738 | AAA | IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)   | WLAN | 8.42 | ± 9.6 % |
| 10739 | AAA | IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)   | WLAN | 8.29 | ± 9.6 % |
| 10740 | AAA | IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)   | WLAN | 8.48 | ± 9.6 % |
| 10741 | AAA | IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)  | WLAN | 8.40 | ± 9.6 % |
| 10742 | AAA | IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)  | WLAN | 8.43 | ± 9.6 % |
| 10743 | AAA | IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)  | WLAN | 8.94 | ± 9.6 % |
| 10744 | AAA | IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)  | WLAN | 9.16 | ± 9.6 % |
| 10745 | AAA | IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)  | WLAN | 8.93 | ± 9.6 % |
| 10746 | AAA | IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)  | WLAN | 9.11 | ± 9.6 % |
| 10747 | AAA | IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)  | WLAN | 9.04 | ± 9.6 % |
| 10748 | AAA | IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)  | WLAN | 8.93 | ± 9.6 % |
| 10749 | AAA | IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)  | WLAN | 8.90 | ± 9.6 % |
| 10750 | AAA | IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)  | WLAN | 8.79 | ± 9.6 % |
| 10751 | AAA | IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)  | WLAN | 8.82 | ± 9.6 % |
| 10752 | AAA | IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)  | WLAN | 8.81 | ± 9.6 % |
| 10753 | AAA | IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle) | WLAN | 9.00 | ± 9.6 % |
| 10754 | AAA | IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle) | WLAN | 8.94 | ± 9.6 % |
| 10755 | AAA | IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)  | WLAN | 8.64 | ± 9.6 % |
| 10756 | AAA | IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)  | WLAN | 8.77 | ± 9.6 % |
| 10757 | AAA | IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)  | WLAN | 8.77 | ± 9.6 % |
| 10758 | AAA | IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)  | WLAN | 8.69 | ± 9.6 % |
| 10759 | AAA | IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)  | WLAN | 8.58 | ± 9.6 % |
| 10760 | AAA | IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)  | WLAN | 8.49 | ± 9.6 % |
| 10761 | AAA | IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)  | WLAN | 8.58 | ± 9.6 % |
| 10762 | AAA | IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)  | WLAN | 8.49 | ± 9.6 % |
| 10763 | AAA | IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)  | WLAN | 8.53 | ± 9.6 % |
| 10764 | AAA | IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)  | WLAN | 8.54 | ± 9.6 % |
| 10765 | AAA | IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle) | WLAN | 8.54 | ± 9.6 % |
| 10766 | AAA | IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle) | WLAN | 8.51 | ± 9.6 % |

\* Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



In Collaboration with

**s p e a g**  
CALIBRATION LABORATORY中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L0570

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: cttl@chinattl.com

[Http://www.chinattl.cn](http://www.chinattl.cn)

Client

**Amphenol**Certificate No: **Z20-60072****CALIBRATION CERTIFICATE**Object **ES3DV3 - SN : SN:3166**Calibration Procedure(s) **FF-Z11-004-01**  
**Calibration Procedures for Dosimetric E-field Probes**Calibration date: **March 02, 2020**

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity<70%.

Calibration Equipment used (M&amp;TE critical for calibration)

| Primary Standards        | ID #        | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
|--------------------------|-------------|------------------------------------------|-----------------------|
| Power Meter NRP2         | 101919      | 18-Jun-19(CTTL, No.J19X05125)            | Jun-20                |
| Power sensor NRP-Z91     | 101547      | 18-Jun-19(CTTL, No.J19X05125)            | Jun-20                |
| Power sensor NRP-Z91     | 101548      | 18-Jun-19(CTTL, No.J19X05125)            | Jun-20                |
| Reference 10dBAttenuator | 18N50W-10dB | 10-Feb-20(CTTL, No.J20X00525)            | Feb-22                |
| Reference 20dBAttenuator | 18N50W-20dB | 10-Feb-20(CTTL, No.J20X00526)            | Feb-22                |
| Reference Probe EX3DV4   | SN 7307     | 24-May-19(SPEAG, No.EX3-7307_May19/2)    | May-20                |
| DAE4                     | SN 1525     | 26-Aug-19(SPEAG, No.DAE4-1525_Aug19)     | Aug-20                |

| Secondary Standards     | ID #       | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
|-------------------------|------------|------------------------------------------|-----------------------|
| SignalGenerator MG3700A | 6201052605 | 18-Jun-19(CTTL, No.J19X05127)            | Jun-20                |
| Network Analyzer E5071C | MY46110673 | 10-Feb-20(CTTL, No.J20X00515)            | Feb-21                |

|                | Name        | Function           | Signature |
|----------------|-------------|--------------------|-----------|
| Calibrated by: | Yu Zongying | SAR Test Engineer  |           |
| Reviewed by:   | Lin Hao     | SAR Test Engineer  |           |
| Approved by:   | Qi Dianyuan | SAR Project Leader |           |

Issued: March 04, 2020

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



In Collaboration with

**s p e a g**  
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: [cttl@chinattl.com](mailto:cttl@chinattl.com)

[Http://www.chinattl.cn](http://www.chinattl.cn)

## Glossary:

|                       |                                                                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| TSL                   | tissue simulating liquid                                                                                                               |
| NORM <sub>x,y,z</sub> | sensitivity in free space                                                                                                              |
| ConvF                 | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                             |
| DCP                   | diode compression point                                                                                                                |
| CF                    | crest factor (1/duty_cycle) of the RF signal                                                                                           |
| A,B,C,D               | modulation dependent linearization parameters                                                                                          |
| Polarization $\Phi$   | $\Phi$ rotation around probe axis                                                                                                      |
| Polarization $\theta$ | $\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), $\theta=0$ is normal to probe axis |

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

## Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>:** Assessed for E-field polarization  $\theta=0$  ( $f \leq 900\text{MHz}$  in TEM-cell;  $f > 1800\text{MHz}$ : waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>:** DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- PAR:** PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>; A,B,C** are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800\text{MHz}$ ) and inside waveguide using analytical field distributions based on power measurements for  $f > 800\text{MHz}$ . The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50\text{MHz}$  to  $\pm 100\text{MHz}$ .
- Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle:** The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).



In Collaboration with

**s p e a g**  
**CALIBRATION LABORATORY**

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: [ttl@chinattl.com](mailto:ttl@chinattl.com)

[Http://www.chinattl.cn](http://www.chinattl.cn)

# Probe ES3DV3

## SN: 3166

Calibrated: March 02, 2020

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)



## DASY/EASY – Parameters of Probe: ES3DV3 – SN: 3166

### Basic Calibration Parameters

|                                      | Sensor X | Sensor Y | Sensor Z | Unc ( $k=2$ ) |
|--------------------------------------|----------|----------|----------|---------------|
| Norm( $\mu V/(V/m)^2$ ) <sup>A</sup> | 0.84     | 1.16     | 1.32     | $\pm 10.0\%$  |
| DCP(mV) <sup>B</sup>                 | 105.7    | 104.3    | 104.6    |               |

### Modulation Calibration Parameters

| UID | Communication System Name |   | A<br>dB | B<br>dB $\sqrt{\mu V}$ | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>( $k=2$ ) |
|-----|---------------------------|---|---------|------------------------|-----|---------|----------|-------------------------------|
| 0   | CW                        | X | 0.0     | 0.0                    | 1.0 | 0.00    | 224.9    | $\pm 2.2\%$                   |
|     |                           | Y | 0.0     | 0.0                    | 1.0 |         | 271.2    |                               |
|     |                           | Z | 0.0     | 0.0                    | 1.0 |         | 295.7    |                               |

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution Corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X, Y, Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 5).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



In Collaboration with

**s p e a g**  
**CALIBRATION LABORATORY**

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: [ctl@chinattl.com](mailto:ctl@chinattl.com)[Http://www.chinattl.cn](http://www.chinattl.cn)

## DASY/EASY – Parameters of Probe : ES3DV3 – SN: 3166

### Calibration Parameter Determined in Head Tissue Simulating Media

| f [MHz] <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-------------|
| 750                  | 41.9                               | 0.89                            | 6.43    | 6.43    | 6.43    | 0.40               | 1.40                    | ±12.1%      |
| 835                  | 41.5                               | 0.90                            | 6.29    | 6.29    | 6.29    | 0.49               | 1.50                    | ±12.1%      |
| 900                  | 41.5                               | 0.97                            | 6.23    | 6.23    | 6.23    | 0.39               | 1.60                    | ±12.1%      |
| 1750                 | 40.1                               | 1.37                            | 5.35    | 5.35    | 5.35    | 0.56               | 1.36                    | ±12.1%      |
| 1900                 | 40.0                               | 1.40                            | 5.16    | 5.16    | 5.16    | 0.66               | 1.28                    | ±12.1%      |
| 2000                 | 40.0                               | 1.40                            | 5.20    | 5.20    | 5.20    | 0.62               | 1.31                    | ±12.1%      |
| 2300                 | 39.5                               | 1.67                            | 5.03    | 5.03    | 5.03    | 0.90               | 1.08                    | ±12.1%      |
| 2450                 | 39.2                               | 1.80                            | 4.76    | 4.76    | 4.76    | 0.90               | 1.10                    | ±12.1%      |
| 2600                 | 39.0                               | 1.96                            | 4.63    | 4.63    | 4.63    | 0.90               | 1.08                    | ±12.1%      |

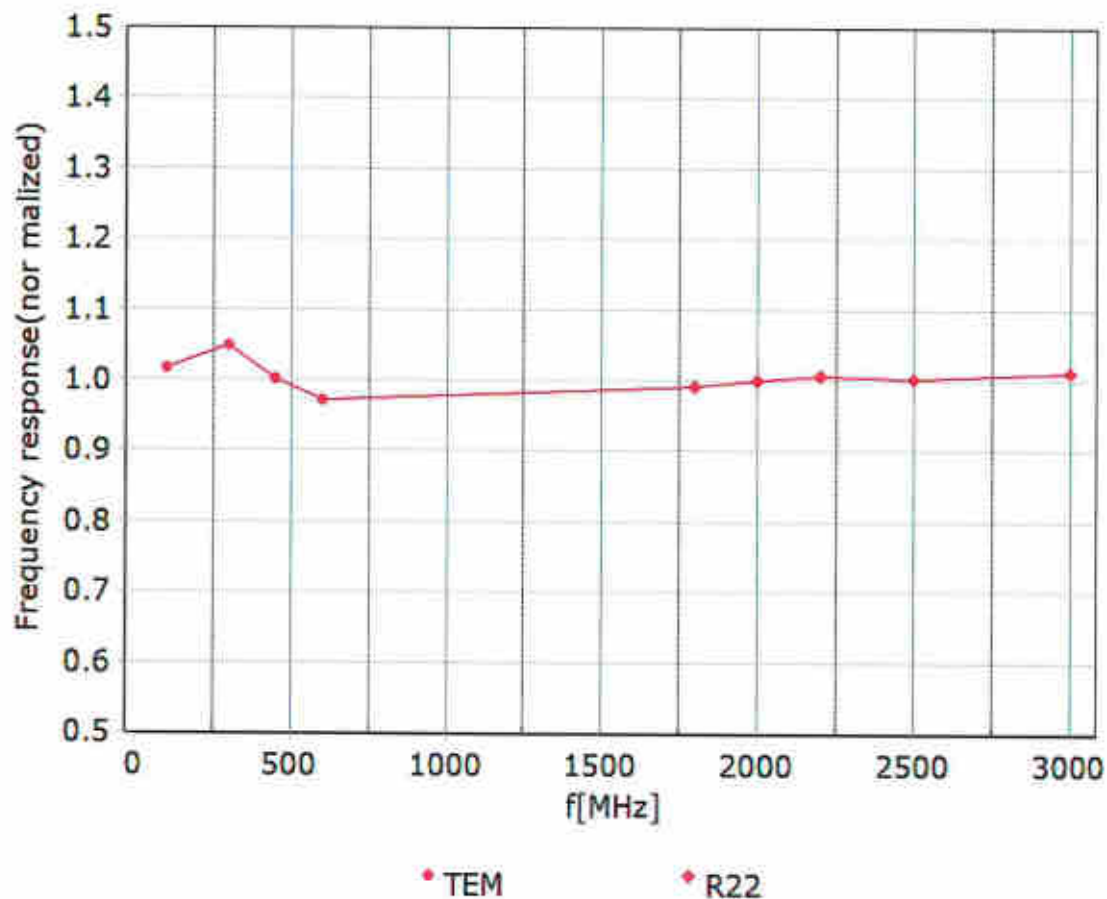
<sup>C</sup> Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequency below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



## Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 7.4\%$  ( $k=2$ )

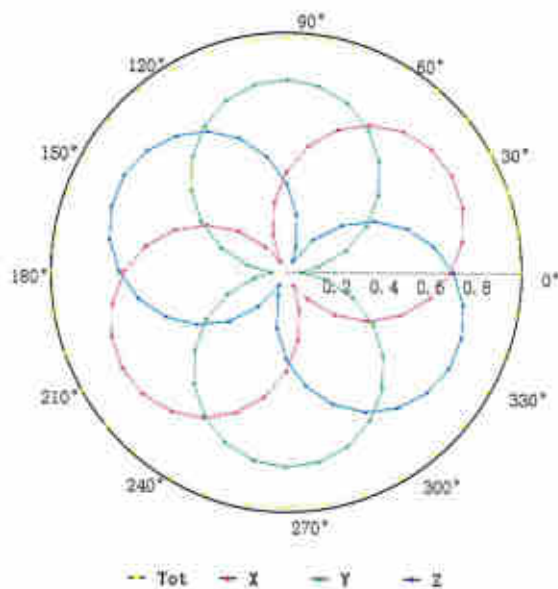


In Collaboration with  
**s p e a g**  
CALIBRATION LABORATORY

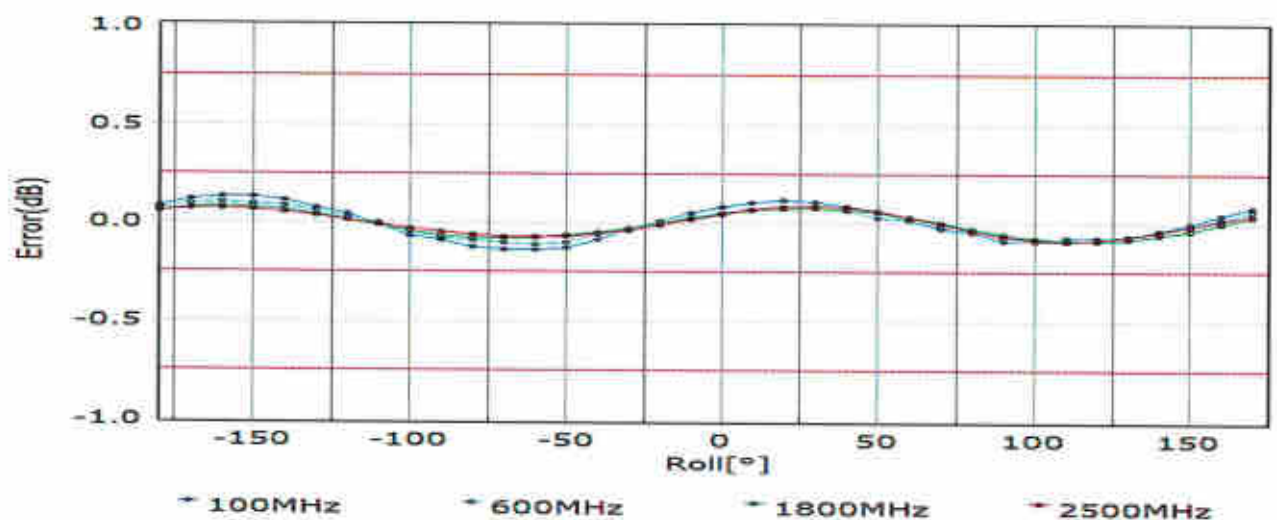
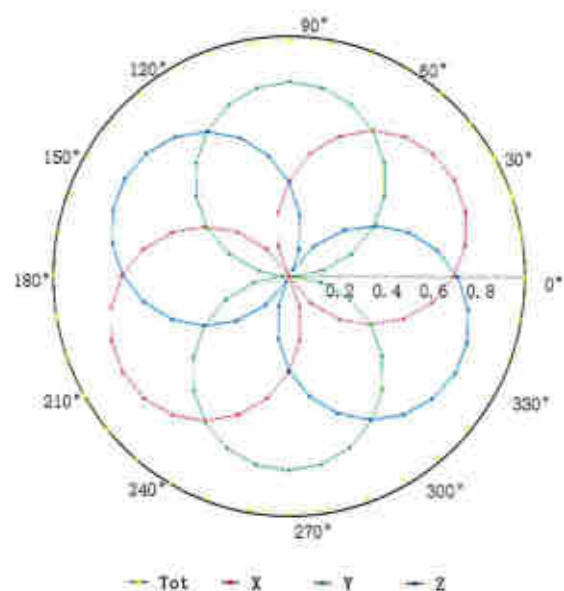
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504  
E-mail: [ctl@chinattl.com](mailto:ctl@chinattl.com) [Http://www.chinattl.cn](http://www.chinattl.cn)

## Receiving Pattern ( $\Phi$ ), $\theta=0^\circ$

**f=600 MHz, TEM**



**f=1800 MHz, R22**



Uncertainty of Axial Isotropy Assessment:  $\pm 1.2\%$  ( $k=2$ )

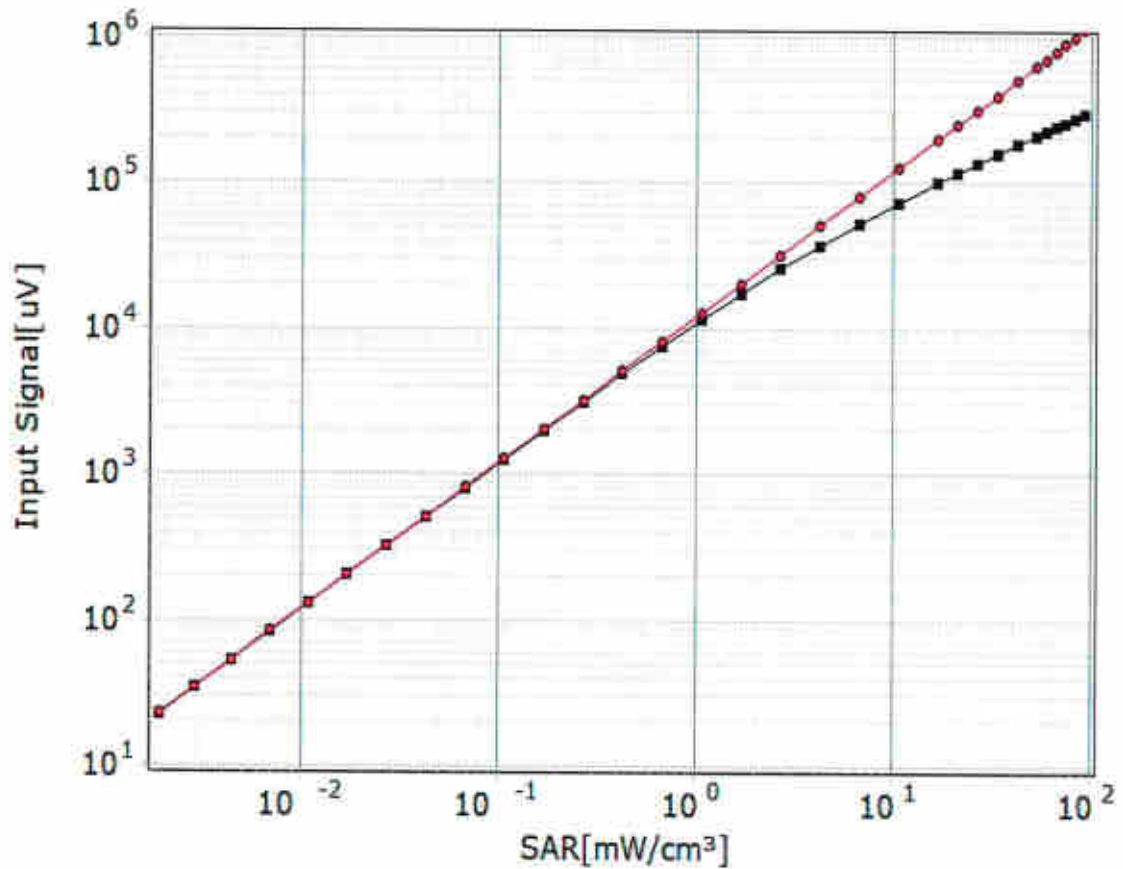


In Collaboration with

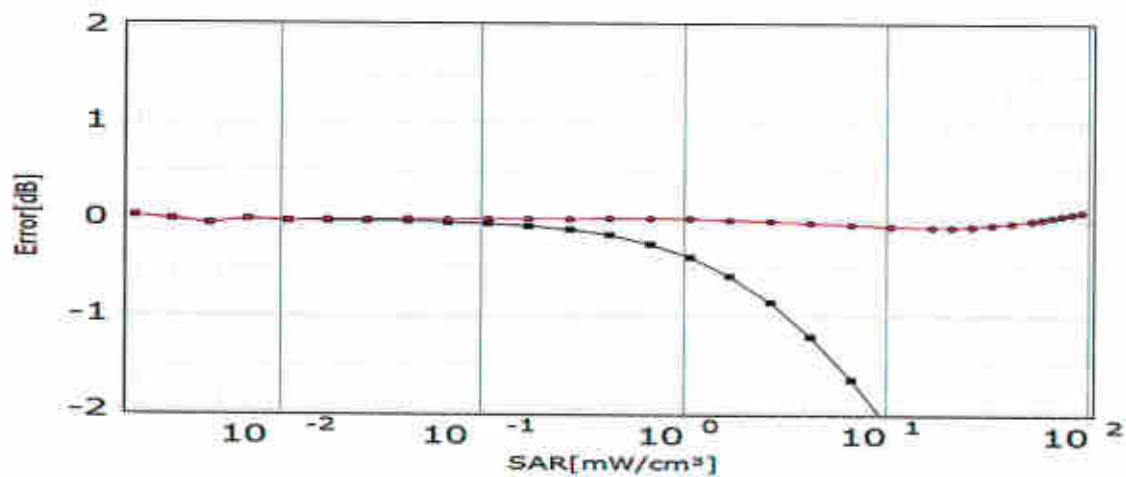
**s p e a g**  
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504  
E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

## Dynamic Range f(SAR<sub>head</sub>) (TEM cell, f = 900 MHz)



■ not compensated    ◆ compensated



■ not compensated    ◆ compensated

Uncertainty of Linearity Assessment:  $\pm 0.9\%$  ( $k=2$ )



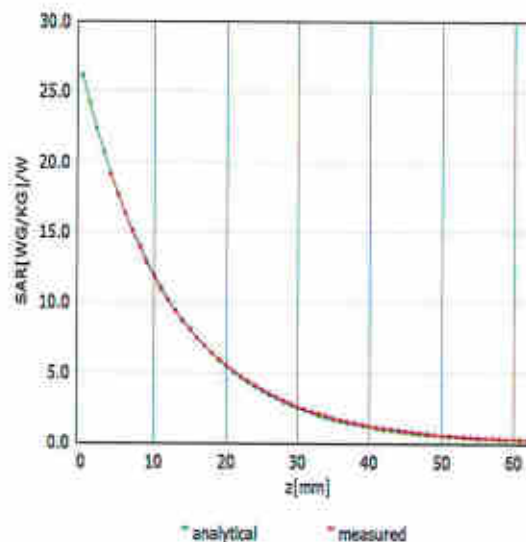
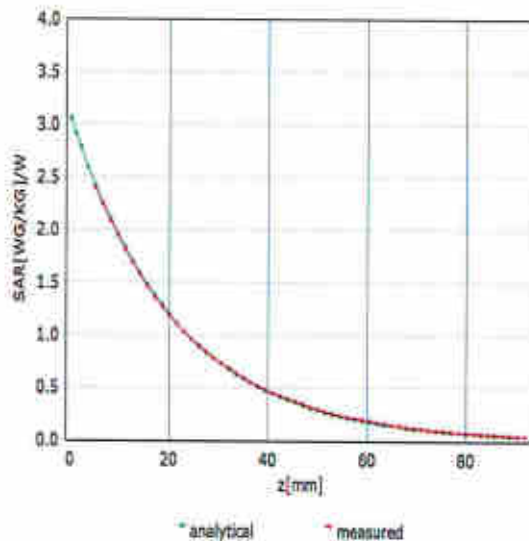
In Collaboration with  
**s p e a g**  
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504  
E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

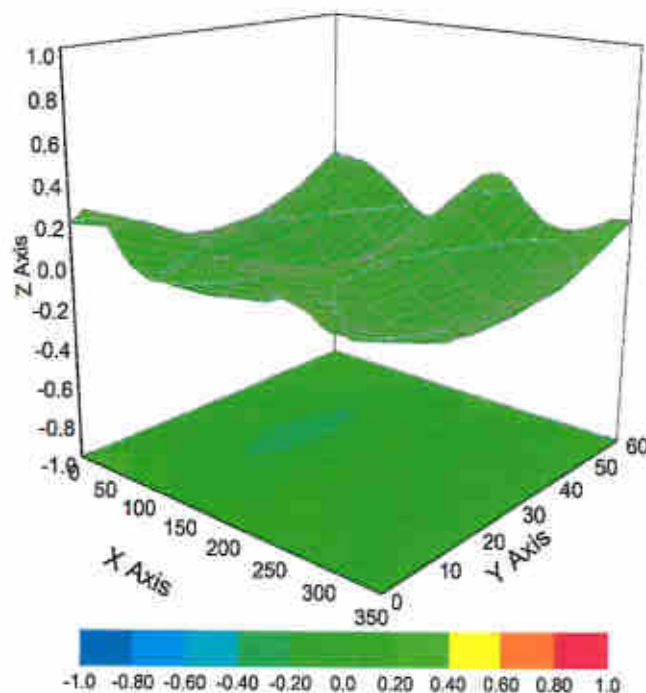
## Conversion Factor Assessment

$f=750$  MHz, WGLS R9(H\_convF)

$f=1750$  MHz, WGLS R22(H\_convF)



## Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment:  $\pm 3.2\%$  ( $k=2$ )



In Collaboration with

**s p e a g**  
**CALIBRATION LABORATORY**

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China

Tel: +86-10-62304633-2512

Fax: +86-10-62304633-2504

E-mail: [ctl@chinatl.com](mailto:ctl@chinatl.com)

[Http://www.chinatl.cn](http://www.chinatl.cn)

## **DASY/EASY – Parameters of Probe: ES3DV3 – SN: 3166**

### **Other Probe Parameters**

|                                                      |                   |
|------------------------------------------------------|-------------------|
| <b>Sensor Arrangement</b>                            | <b>Triangular</b> |
| <b>Connector Angle (°)</b>                           | <b>6.2</b>        |
| <b>Mechanical Surface Detection Mode</b>             | <b>enabled</b>    |
| <b>Optical Surface Detection Mode</b>                | <b>disable</b>    |
| <b>Probe Overall Length</b>                          | <b>337mm</b>      |
| <b>Probe Body Diameter</b>                           | <b>10mm</b>       |
| <b>Tip Length</b>                                    | <b>10mm</b>       |
| <b>Tip Diameter</b>                                  | <b>4mm</b>        |
| <b>Probe Tip to Sensor X Calibration Point</b>       | <b>2mm</b>        |
| <b>Probe Tip to Sensor Y Calibration Point</b>       | <b>2mm</b>        |
| <b>Probe Tip to Sensor Z Calibration Point</b>       | <b>2mm</b>        |
| <b>Recommended Measurement Distance from Surface</b> | <b>3mm</b>        |



---

## ***Appendix E. Conducted RF Output Power Table***

The detailed power table are shown as follows.

## Full Power Mode

| GSM850 | Burst Average Power (dBm) |       |       |       | Tune-up Limit (dBm) | Frame Average Power (dBm) |       |       |       | Tune-up Limit (dBm) |
|--------|---------------------------|-------|-------|-------|---------------------|---------------------------|-------|-------|-------|---------------------|
|        | TX Channel                | 128   | 189   | 251   |                     | 128                       | 189   | 251   |       |                     |
|        | Frequency (MHz)           | 824.2 | 836.4 | 848.8 |                     | 824.2                     | 836.4 | 848.8 |       |                     |
|        | GSM 1 Tx slot             | 33.31 | 33.26 | 33.13 | 33.50               | 24.31                     | 24.26 | 24.13 | 24.50 |                     |
|        | GPRS 1 Tx slot            | 33.30 | 33.25 | 33.12 | 33.50               | 24.30                     | 24.25 | 24.12 | 24.50 |                     |
|        | GPRS 2 Tx slots           | 32.33 | 32.36 | 32.13 | 33.00               | 26.33                     | 26.36 | 26.13 | 27.00 |                     |
|        | GPRS 3 Tx slots           | 30.56 | 30.66 | 30.51 | 31.50               | 26.30                     | 26.40 | 26.25 | 27.24 |                     |
|        | GPRS 4 Tx slots           | 29.38 | 29.28 | 29.09 | 30.00               | 26.08                     | 26.28 | 26.09 | 27.00 |                     |
|        | EDGE 1 Tx slot            | 27.23 | 27.37 | 27.01 | 28.00               | 18.23                     | 18.37 | 18.01 | 19.00 |                     |
|        | EDGE 2 Tx slots           | 26.22 | 26.37 | 26.03 | 27.50               | 20.22                     | 20.37 | 20.03 | 21.50 |                     |
|        | EDGE 3 Tx slots           | 24.83 | 24.87 | 24.50 | 25.50               | 20.57                     | 20.61 | 20.64 | 21.24 |                     |
|        | EDGE 4 Tx slots           | 23.19 | 23.26 | 23.24 | 24.50               | 20.19                     | 20.26 | 20.24 | 21.50 |                     |

| GSM1900         | Burst Average Power (dBm) |        |       |        | Tune-up Limit (dBm) | Frame-Average Power (dBm) |       |        |       | Tune-up Limit (dBm) |
|-----------------|---------------------------|--------|-------|--------|---------------------|---------------------------|-------|--------|-------|---------------------|
|                 | TX Channel                | 512    | 661   | 810    |                     | 512                       | 661   | 810    |       |                     |
| Frequency (MHz) |                           | 1850.2 | 1880  | 1909.8 |                     | 1850.2                    | 1880  | 1909.8 |       |                     |
| GSM 1 Tx slot   |                           | 30.48  | 30.07 | 29.34  |                     | 21.48                     | 21.07 | 20.34  | 21.50 |                     |
| GPRS 1 Tx slot  |                           | 30.47  | 30.06 | 29.33  |                     | 21.47                     | 21.06 | 20.33  | 21.50 |                     |
| GPRS 2 Tx slots |                           | 29.38  | 29.11 | 28.24  |                     | 23.38                     | 23.11 | 22.24  | 24.00 |                     |
| GPRS 3 Tx slots |                           | 27.48  | 27.71 | 26.65  |                     | 23.22                     | 23.45 | 22.39  | 24.24 |                     |
| GPRS 4 Tx slots |                           | 26.12  | 25.94 | 25.03  |                     | 23.12                     | 22.94 | 22.03  | 23.50 |                     |
| EDGE 1 Tx slot  |                           | 26.32  | 25.86 | 25.21  |                     | 17.32                     | 16.86 | 16.21  | 18.00 |                     |
| EDGE 2 Tx slots |                           | 25.26  | 24.90 | 24.18  |                     | 19.26                     | 18.90 | 18.18  | 19.50 |                     |
| EDGE 3 Tx slots |                           | 23.17  | 23.47 | 22.66  |                     | 18.91                     | 19.21 | 18.40  | 19.24 |                     |
| EDGE 4 Tx slots |                           | 22.10  | 21.88 | 21.04  |                     | 19.10                     | 18.88 | 18.04  | 19.50 |                     |

| Band            |                    | WCDMA II |       |        | Tune-up Limit (dBm) | WCDMA IV |        |        | Tune-up Limit (dBm) | WCDMA V |       |       | Tune-up Limit (dBm) |
|-----------------|--------------------|----------|-------|--------|---------------------|----------|--------|--------|---------------------|---------|-------|-------|---------------------|
| TX Channel      |                    | 9262     | 9400  | 9538   |                     | 1312     | 1413   | 1513   |                     | 4132    | 4182  | 4233  |                     |
| Rx Channel      |                    | 9662     | 9800  | 9938   |                     | 1537     | 1638   | 1738   |                     | 4357    | 4407  | 4458  |                     |
| Frequency (MHz) |                    | 1852.4   | 1880  | 1907.6 |                     | 1712.4   | 1732.6 | 1752.6 |                     | 826.4   | 836.4 | 846.6 |                     |
| 3GPP Rel 99     | AMR 12.2kbps       | 23.74    | 23.82 | 23.34  | 24.00               | 23.13    | 23.39  | 22.90  | 24.00               | 23.55   | 23.65 | 23.21 | 24.00               |
| 3GPP Rel 99     | RMC 12.2kbps       | 23.75    | 23.84 | 23.35  | 24.00               | 23.14    | 23.40  | 22.90  | 24.00               | 23.56   | 23.66 | 23.22 | 24.00               |
| 3GPP Rel 6      | HSDPA Subtest-1    | 22.96    | 23.02 | 22.54  | 23.50               | 22.51    | 22.77  | 22.32  | 23.50               | 23.07   | 23.12 | 22.69 | 23.50               |
| 3GPP Rel 6      | HSDPA Subtest-2    | 22.96    | 23.07 | 22.68  | 23.50               | 22.48    | 22.77  | 22.28  | 23.50               | 23.09   | 23.17 | 22.72 | 23.50               |
| 3GPP Rel 6      | HSDPA Subtest-3    | 22.43    | 22.55 | 22.13  | 23.00               | 21.99    | 22.26  | 21.79  | 23.00               | 22.50   | 22.69 | 22.28 | 23.00               |
| 3GPP Rel 6      | HSDPA Subtest-4    | 22.46    | 22.50 | 22.22  | 23.00               | 21.96    | 22.25  | 21.77  | 23.00               | 22.53   | 22.63 | 22.20 | 23.00               |
| 3GPP Rel 8      | DC-HSDPA Subtest-1 | 22.97    | 23.03 | 22.55  | 23.50               | 22.50    | 22.76  | 22.33  | 23.50               | 23.08   | 23.13 | 22.70 | 23.50               |
| 3GPP Rel 8      | DC-HSDPA Subtest-2 | 22.95    | 23.08 | 22.69  | 23.50               | 22.47    | 22.77  | 22.27  | 23.50               | 23.10   | 23.16 | 22.71 | 23.50               |
| 3GPP Rel 8      | DC-HSDPA Subtest-3 | 22.45    | 22.54 | 22.14  | 23.00               | 21.98    | 22.25  | 21.80  | 23.00               | 22.51   | 22.70 | 22.27 | 23.00               |
| 3GPP Rel 8      | DC-HSDPA Subtest-4 | 22.47    | 22.48 | 22.23  | 23.00               | 21.95    | 22.24  | 21.76  | 23.00               | 22.54   | 22.64 | 22.22 | 23.00               |
| 3GPP Rel 6      | HSUPA Subtest-1    | 23.01    | 23.04 | 22.58  | 23.50               | 22.52    | 22.78  | 22.38  | 23.50               | 23.09   | 23.12 | 22.71 | 23.50               |
| 3GPP Rel 6      | HSUPA Subtest-2    | 20.96    | 21.05 | 20.57  | 21.50               | 20.53    | 20.74  | 20.27  | 21.50               | 21.10   | 21.16 | 20.70 | 21.50               |
| 3GPP Rel 6      | HSUPA Subtest-3    | 21.98    | 22.08 | 21.67  | 22.50               | 21.50    | 21.82  | 21.35  | 22.50               | 22.09   | 22.13 | 21.73 | 22.50               |
| 3GPP Rel 6      | HSUPA Subtest-4    | 21.00    | 21.10 | 20.69  | 21.50               | 20.47    | 20.80  | 20.34  | 21.50               | 21.04   | 21.17 | 20.73 | 21.50               |
| 3GPP Rel 6      | HSUPA Subtest-5    | 23.00    | 23.10 | 22.78  | 23.50               | 22.50    | 22.80  | 22.38  | 23.50               | 23.10   | 23.20 | 22.70 | 23.50               |

| Band             |  | CDMA BC0 |        |        | Tune-up Limit (dBm) | CDMA BC1 |       |         | Tune-up Limit (dBm) |
|------------------|--|----------|--------|--------|---------------------|----------|-------|---------|---------------------|
| TX Channel       |  | 1013     | 384    | 777    |                     | 25       | 600   | 1175    |                     |
| Frequency (MHz)  |  | 824.7    | 836.52 | 848.31 |                     | 1851.25  | 1880  | 1908.75 |                     |
| RC1 SO55         |  | 24.87    | 24.82  | 24.63  | 25.00               | 24.40    | 24.61 | 24.59   | 25.00               |
| RC3 SO55         |  | 24.81    | 24.88  | 24.64  | 25.00               | 24.43    | 24.64 | 24.61   | 25.00               |
| RC3 SO32 (F+SCH) |  | 24.83    | 24.86  | 24.67  | 25.00               | 24.44    | 24.63 | 24.62   | 25.00               |
| RC3 SO32 (SCH)   |  | 24.81    | 24.82  | 24.63  | 25.00               | 24.45    | 24.52 | 24.62   | 25.00               |
| RTAP 151.6kbps   |  | 24.85    | 24.86  | 24.65  | 25.00               | 24.44    | 24.63 | 24.61   | 25.00               |
| NETAP 4096bits   |  | 24.82    | 24.86  | 24.62  | 25.00               | 24.43    | 24.61 | 24.62   | 25.00               |

| Band 2 (1900MHz Band)<br>Part 24C |            |         |           |                           |                              |                            |                              |             |  |
|-----------------------------------|------------|---------|-----------|---------------------------|------------------------------|----------------------------|------------------------------|-------------|--|
| BW (MHz)                          | Modulation | Channel | RB Offset | Power<br>Low<br>Ch. Freq. | Power<br>Middle<br>Ch. Freq. | Power<br>High<br>Ch. Freq. | Tune-up limit<br>(dBm)       | MPR<br>(dB) |  |
| Channel                           |            |         |           | 18700                     | 18800                        | 19000                      | 24                           | 0           |  |
| Frequency (MHz)                   |            |         |           | 1880                      | 1880                         | 1900                       |                              |             |  |
| 20                                | QPSK       | 1       | 0         | 23.20                     | 23.38                        | 23.33                      | 23                           | 1           |  |
| 20                                | QPSK       | 1       | 49        | 23.24                     | 23.25                        | 23.07                      |                              |             |  |
| 20                                | QPSK       | 1       | 99        | 23.14                     | 23.03                        | 22.90                      | 23                           | 1           |  |
| 20                                | QPSK       | 50      | 0         | 22.30                     | 22.36                        | 22.10                      |                              |             |  |
| 20                                | QPSK       | 50      | 24        | 22.29                     | 22.35                        | 22.13                      | 23                           | 1           |  |
| 20                                | QPSK       | 50      | 50        | 22.30                     | 22.26                        | 21.94                      |                              |             |  |
| 20                                | QPSK       | 100     | 0         | 22.34                     | 22.35                        | 21.90                      | 23                           | 1           |  |
| 20                                | 16QAM      | 1       | 0         | 22.39                     | 22.36                        | 22.42                      |                              |             |  |
| 20                                | 16QAM      | 1       | 49        | 22.27                     | 22.28                        | 22.33                      | 23                           | 1           |  |
| 20                                | 16QAM      | 1       | 99        | 22.12                     | 22.08                        | 22.31                      |                              |             |  |
| 20                                | 16QAM      | 50      | 0         | 21.18                     | 21.14                        | 21.16                      | 22                           | 2           |  |
| 20                                | 16QAM      | 50      | 24        | 21.28                     | 21.21                        | 21.15                      |                              |             |  |
| 20                                | 16QAM      | 50      | 50        | 21.19                     | 21.10                        | 21.15                      | 22                           | 2           |  |
| 20                                | 16QAM      | 100     | 0         | 21.21                     | 21.11                        | 21.10                      |                              |             |  |
| 20                                | 64QAM      | 1       | 0         | 21.36                     | 21.36                        | 21.09                      | 22                           | 2           |  |
| 20                                | 64QAM      | 1       | 49        | 21.09                     | 21.09                        | 20.98                      |                              |             |  |
| 20                                | 64QAM      | 1       | 99        | 21.30                     | 21.27                        | 21.22                      | 21                           | 3           |  |
| 20                                | 64QAM      | 50      | 0         | 20.18                     | 20.13                        | 20.23                      |                              |             |  |
| 20                                | 64QAM      | 50      | 24        | 20.30                     | 20.20                        | 20.25                      | 21                           | 3           |  |
| 20                                | 64QAM      | 50      | 50        | 20.21                     | 20.11                        | 20.15                      |                              |             |  |
| 20                                | 64QAM      | 100     | 0         | 20.22                     | 20.12                        | 20.09                      | Tune-up limit (dBm) MPR (dB) |             |  |
| Channel                           |            |         |           | 18875                     | 18800                        | 19025                      | 24                           | 0           |  |
| Frequency (MHz)                   |            |         |           | 1887.5                    | 18800                        | 1902.5                     |                              |             |  |
| 15                                | QPSK       | 1       | 0         | 23.32                     | 23.36                        | 22.95                      | 23                           | 1           |  |
| 15                                | QPSK       | 1       | 37        | 23.29                     | 23.30                        | 22.92                      |                              |             |  |
| 15                                | QPSK       | 1       | 74        | 23.18                     | 23.15                        | 22.88                      | 23                           | 1           |  |
| 15                                | QPSK       | 36      | 0         | 22.41                     | 22.33                        | 22.12                      |                              |             |  |
| 15                                | QPSK       | 36      | 20        | 22.16                     | 22.03                        | 22.10                      | 23                           | 1           |  |
| 15                                | QPSK       | 36      | 39        | 22.08                     | 21.97                        | 22.02                      |                              |             |  |
| 15                                | QPSK       | 75      | 0         | 22.11                     | 21.99                        | 22.18                      | 23                           | 1           |  |
| 15                                | 16QAM      | 1       | 0         | 22.30                     | 22.26                        | 22.20                      |                              |             |  |
| 15                                | 16QAM      | 1       | 37        | 22.29                     | 22.30                        | 22.28                      | 22                           | 2           |  |
| 15                                | 16QAM      | 1       | 74        | 22.13                     | 22.07                        | 22.23                      |                              |             |  |
| 15                                | 16QAM      | 36      | 0         | 21.26                     | 21.18                        | 21.09                      | 22                           | 2           |  |
| 15                                | 16QAM      | 36      | 20        | 21.32                     | 21.23                        | 21.31                      |                              |             |  |
| 15                                | 16QAM      | 36      | 39        | 21.28                     | 21.17                        | 21.21                      | 21                           | 3           |  |
| 15                                | 16QAM      | 75      | 0         | 21.30                     | 21.16                        | 21.16                      |                              |             |  |
| 15                                | 64QAM      | 1       | 0         | 21.13                     | 21.04                        | 21.18                      | 22                           | 2           |  |
| 15                                | 64QAM      | 1       | 37        | 21.23                     | 21.21                        | 21.33                      |                              |             |  |
| 15                                | 64QAM      | 1       | 74        | 21.05                     | 20.93                        | 21.27                      | 21                           | 3           |  |
| 15                                | 64QAM      | 36      | 0         | 20.29                     | 20.17                        | 20.09                      |                              |             |  |
| 15                                | 64QAM      | 36      | 20        | 20.32                     | 20.23                        | 20.37                      | Tune-up limit (dBm) MPR (dB) |             |  |
| 15                                | 64QAM      | 36      | 39        | 20.26                     | 20.18                        | 20.23                      | Tune-up limit (dBm) MPR (dB) |             |  |
| 15                                | 64QAM      | 75      | 0         | 20.32                     | 20.18                        | 20.18                      | Tune-up limit (dBm) MPR (dB) |             |  |
| Channel                           |            |         |           | 18900                     | 18900                        | 19100                      | 24                           | 0           |  |
| Frequency (MHz)                   |            |         |           | 1895                      | 18800                        | 1905                       |                              |             |  |
| 10                                | QPSK       | 1       | 0         | 23.25                     | 23.15                        | 23.33                      | 23                           | 1           |  |
| 10                                | QPSK       | 1       | 25        | 23.20                     | 23.19                        | 23.12                      |                              |             |  |
| 10                                | QPSK       | 1       | 49        | 23.17                     | 23.14                        | 23.01                      | 23                           | 1           |  |
| 10                                | QPSK       | 25      | 0         | 22.21                     | 22.03                        | 22.08                      |                              |             |  |
| 10                                | QPSK       | 25      | 12        | 22.26                     | 22.14                        | 21.96                      | 23                           | 1           |  |
| 10                                | QPSK       | 25      | 25        | 22.12                     | 21.99                        | 21.81                      |                              |             |  |
| 10                                | QPSK       | 50      | 0         | 22.19                     | 22.03                        | 21.78                      | 23                           | 1           |  |
| 10                                | 16QAM      | 1       | 0         | 22.31                     | 22.17                        | 22.12                      |                              |             |  |
| 10                                | 16QAM      | 1       | 25        | 22.09                     | 22.18                        | 22.08                      | 22                           | 2           |  |
| 10                                | 16QAM      | 1       | 49        | 22.20                     | 22.13                        | 22.07                      |                              |             |  |
| 10                                | 16QAM      | 25      | 0         | 21.19                     | 21.24                        | 21.15                      | 22                           | 2           |  |
| 10                                | 16QAM      | 25      | 12        | 21.20                     | 21.23                        | 21.10                      |                              |             |  |
| 10                                | 16QAM      | 25      | 25        | 21.31                     | 21.17                        | 21.03                      | 22                           | 2           |  |
| 10                                | 16QAM      | 50      | 0         | 21.35                     | 21.23                        | 20.86                      |                              |             |  |
| 10                                | 64QAM      | 1       | 0         | 21.26                     | 21.10                        | 21.13                      | 22                           | 2           |  |
| 10                                | 64QAM      | 1       | 25        | 21.20                     | 21.29                        | 21.16                      |                              |             |  |
| 10                                | 64QAM      | 1       | 49        | 21.12                     | 21.14                        | 21.12                      | 21                           | 3           |  |
| 10                                | 64QAM      | 25      | 0         | 20.41                     | 20.23                        | 20.20                      |                              |             |  |
| 10                                | 64QAM      | 25      | 12        | 20.20                     | 20.31                        | 20.16                      | 21                           | 3           |  |
| 10                                | 64QAM      | 25      | 25        | 20.30                     | 20.18                        | 20.34                      |                              |             |  |
| 10                                | 64QAM      | 50      | 0         | 20.34                     | 20.24                        | 20.33                      | Tune-up limit (dBm) MPR (dB) |             |  |
| Channel                           |            |         |           | 18925                     | 18900                        | 19175                      | 24                           | 0           |  |
| Frequency (MHz)                   |            |         |           | 1892.5                    | 1880                         | 1917.5                     |                              |             |  |
| 5                                 | QPSK       | 1       | 0         | 23.37                     | 23.12                        | 23.11                      | 23                           | 1           |  |
| 5                                 | QPSK       | 1       | 12        | 23.38                     | 23.29                        | 23.08                      |                              |             |  |
| 5                                 | QPSK       | 1       | 24        | 23.19                     | 23.04                        | 22.91                      | 23                           | 1           |  |
| 5                                 | QPSK       | 12      | 0         | 22.45                     | 22.27                        | 22.18                      |                              |             |  |
| 5                                 | QPSK       | 12      | 7         | 22.41                     | 22.28                        | 22.11                      | 23                           | 1           |  |
| 5                                 | QPSK       | 12      | 13        | 22.34                     | 22.16                        | 21.99                      |                              |             |  |
| 5                                 | QPSK       | 25      | 0         | 22.40                     | 22.25                        | 21.87                      | 23                           | 1           |  |
| 5                                 | 16QAM      | 1       | 0         | 22.37                     | 22.50                        | 22.40                      |                              |             |  |
| 5                                 | 16QAM      | 1       | 12        | 22.40                     | 22.30                        | 22.29                      | 22                           | 2           |  |
| 5                                 | 16QAM      | 1       | 24        | 22.19                     | 22.35                        | 22.26                      |                              |             |  |
| 5                                 | 16QAM      | 12      | 0         | 21.32                     | 21.47                        | 21.39                      | 22                           | 2           |  |
| 5                                 | 16QAM      | 12      | 7         | 21.30                     | 21.08                        | 21.30                      |                              |             |  |
| 5                                 | 16QAM      | 12      | 13        | 21.22                     | 21.43                        | 21.17                      | 22                           | 2           |  |
| 5                                 | 16QAM      | 25      | 0         | 21.25                     | 21.46                        | 21.16                      |                              |             |  |
| 5                                 | 64QAM      | 1       | 0         | 21.26                     | 21.43                        | 21.28                      | 22                           | 2           |  |
| 5                                 | 64QAM      | 1       | 12        | 21.36                     | 21.51                        | 21.36                      |                              |             |  |
| 5                                 | 64QAM      | 1       | 24        | 21.08                     | 21.27                        | 21.22                      | 21                           | 3           |  |
| 5                                 | 64QAM      | 12      | 0         | 20.31                     | 20.48                        | 20.28                      |                              |             |  |
| 5                                 | 64QAM      | 12      | 7         | 20.29                     | 20.46                        | 20.18                      | 21                           | 3           |  |
| 5                                 | 64QAM      | 12      | 13        | 20.14                     | 20.36                        | 20.17                      |                              |             |  |
| 5                                 | 64QAM      | 25      | 0         | 20.25                     | 20.45                        | 20.18                      | Tune-up limit (dBm) MPR (dB) |             |  |
| Channel                           |            |         |           | 18950                     | 18900                        | 19185                      | 24                           | 0           |  |
| Frequency (MHz)                   |            |         |           | 18915                     | 1880                         | 1908.5                     |                              |             |  |
| 3                                 | QPSK       | 1       | 0         | 23.24                     | 23.30                        | 23.38                      | 23                           | 1           |  |
| 3                                 | QPSK       | 8       | 0         | 23.25                     | 23.08                        | 23.31                      |                              |             |  |
| 3                                 | QPSK       | 1       | 14        | 23.09                     | 23.32                        | 23.21                      | 23                           | 1           |  |
| 3                                 | QPSK       | 8       | 0         | 22.32                     | 22.51                        | 22.26                      |                              |             |  |
| 3                                 | QPSK       | 8       | 4         | 22.30                     | 22.51                        | 22.21                      | 23                           | 1           |  |
| 3                                 | QPSK       | 8       | 7         | 22.22                     | 22.45                        | 22.18                      |                              |             |  |
| 3                                 | QPSK       | 15      | 0         | 22.28                     | 22.46                        | 22.30                      | 23                           | 1           |  |
| 3                                 | 16QAM      | 1       | 0         | 22.25                     | 22.40                        | 22.30                      |                              |             |  |
| 3                                 | 16QAM      | 1       | 8         | 22.27                     | 22.52                        | 22.34                      | 22                           | 2           |  |
| 3                                 | 16QAM      | 1       | 14        | 22.29                     | 22.32                        | 22.14                      |                              |             |  |
| 3                                 | 16QAM      | 8       | 0         | 21.24                     | 21.44                        | 21.25                      | 22                           | 2           |  |
| 3                                 | 16QAM      | 8       | 4         | 21.22                     | 21.39                        | 21.25                      |                              |             |  |
| 3                                 | 16QAM      | 8       | 7         | 21.17                     | 21.33                        | 21.15                      | 22                           | 2           |  |
| 3                                 | 16QAM      | 15      | 0         | 21.19                     | 21.39                        | 21.05                      |                              |             |  |
| 3                                 | 64QAM      | 1       | 0         | 21.17                     | 21.35                        | 21.26                      | 22                           | 2           |  |
| 3                                 | 64QAM      | 1       | 8         | 21.24                     | 21.46                        | 21.28                      |                              |             |  |
| 3                                 | 64QAM      | 1       | 14        | 21.04                     | 21.23                        | 21.11                      | 21                           | 3           |  |
| 3                                 | 64QAM      | 8       | 0         | 20.22                     | 20.39                        | 20.24                      |                              |             |  |
| 3                                 | 64QAM      | 8       | 4         | 20.21                     | 20.40                        | 20.24                      | 21                           | 3           |  |
| 3                                 | 64QAM      | 8       | 7         | 20.12                     | 20.34                        | 20.14                      |                              |             |  |
| 3                                 | 64QAM      | 15      | 0         | 20.15                     | 20.34                        | 20.06                      | Tune-up limit (dBm) MPR (dB) |             |  |
| Channel                           |            |         |           | 18967                     | 18900                        | 19193                      | 24                           | 0           |  |
| Frequency (MHz)                   |            |         |           | 1890.7                    | 18800                        | 1909.3                     |                              |             |  |
| 1.4                               | QPSK       | 1       | 0         | 23.14                     | 23.32                        | 23.30                      | 23                           | 1           |  |
| 1.4                               | QPSK       | 1       | 3         | 23.13                     | 23.37                        | 23.21                      |                              |             |  |
| 1.4                               | QPSK       | 1       | 5         | 23.05                     | 23.25                        | 23.09                      | 24                           | 0           |  |
| 1.4                               | QPSK       | 3       | 0         | 23.17                     | 23.37                        | 23.18                      |                              |             |  |
| 1.4                               | QPSK       | 3       | 1         | 23.19                     | 23.09                        | 23.08                      | 23                           | 1           |  |
| 1.4                               | QPSK       | 6       | 0         | 22.19                     | 22.36                        | 22.23                      |                              |             |  |
| 1.4                               | 16QAM      | 1       | 0         | 22.12                     | 22.33                        | 22.15                      | 23                           | 1           |  |
| 1.4                               | 16QAM      | 1       | 3         | 22.15                     | 22.38                        | 22.05                      |                              |             |  |
| 1.4                               | 16QAM      | 1       | 5         | 22.07                     | 22.22                        | 22.04                      | 23                           | 1           |  |
| 1.4                               | 16QAM      | 3       | 0         | 21.93                     | 22.09                        | 22.17                      |                              |             |  |
| 1.4                               | 16QAM      | 3       | 1         | 21.95                     | 22.14                        | 21.98                      | 22                           | 2           |  |
| 1.4                               | 16QAM      | 3       | 3         | 21.86                     | 22.00                        | 21.94                      |                              |             |  |
| 1.4                               | 16QAM      | 6       | 0         | 21.69                     | 21.25                        | 20.96                      | 22                           | 2           |  |
| 1.4                               | 64QAM      | 1       | 0         | 21.06                     | 21.27                        | 21.09                      |                              |             |  |
| 1.4                               | 64QAM      | 1       | 3         | 21.05                     | 21.28                        | 21.19                      | 22                           | 2           |  |
| 1.4                               | 64QAM      | 1       | 5         | 20.92                     | 21.16                        | 20.93                      |                              |             |  |
| 1.4                               | 64QAM      | 3       | 0         | 20.96                     | 21.10                        | 21.04                      | 22                           | 2           |  |
| 1.4                               | 64QAM      | 3       | 1         | 21.01                     | 21.16                        | 21.37                      |                              |             |  |
| 1.4                               | 64QAM      | 3       | 3         | 20.88                     | 21.06                        | 21.30                      | 21                           | 3           |  |
| 1.4                               | 64QAM      | 6       | 0         | 19.98                     | 20.18                        | 19.91                      |                              |             |  |

| Band 7 (2400MHz Band) |            |         |           |                     |                        |                      |                     |          |  |
|-----------------------|------------|---------|-----------|---------------------|------------------------|----------------------|---------------------|----------|--|
| Part 27               |            |         |           |                     |                        |                      |                     |          |  |
| BW [MHz]              | Modulation | RB Size | RB Offset | Power Low Ch. [Fwd] | Power Middle Ch. [Fwd] | Power High Ch. [Fwd] | Tune-up limit (dBm) | MPR (dB) |  |
| Channel               |            |         |           | 20550               | 21100                  | 21350                |                     |          |  |
| Frequency (MHz)       |            |         |           | 2010                | 2035                   | 2060                 |                     |          |  |
| 20                    | QPSK       | 1       | 0         | 23.44               | 23.54                  | 23.34                | 24                  | 0        |  |
| 20                    | QPSK       | 1       | 49        | 23.32               | 23.34                  | 23.21                |                     |          |  |
| 20                    | QPSK       | 1       | 99        | 23.37               | 23.35                  | 23.24                |                     |          |  |
| 20                    | QPSK       | 50      | 0         | 22.41               | 22.48                  | 22.33                | 23                  | 1        |  |
| 20                    | QPSK       | 50      | 24        | 22.46               | 22.4                   | 22.36                |                     |          |  |
| 20                    | QPSK       | 50      | 50        | 22.46               | 22.41                  | 22.27                |                     |          |  |
| 20                    | QPSK       | 100     | 0         | 22.38               | 22.42                  | 22.26                | 23                  | 1        |  |
| 20                    | 16QAM      | 1       | 0         | 22.64               | 22.66                  | 22.58                |                     |          |  |
| 20                    | 16QAM      | 1       | 49        | 22.68               | 22.73                  | 22.59                |                     |          |  |
| 20                    | 16QAM      | 1       | 99        | 22.74               | 22.73                  | 22.6                 | 22                  | 2        |  |
| 20                    | 16QAM      | 50      | 0         | 21.68               | 21.63                  | 21.52                |                     |          |  |
| 20                    | 16QAM      | 50      | 24        | 21.73               | 21.68                  | 21.55                |                     |          |  |
| 20                    | 16QAM      | 50      | 50        | 21.73               | 21.68                  | 21.46                | 22                  | 2        |  |
| 20                    | 16QAM      | 100     | 0         | 21.62               | 21.59                  | 21.46                |                     |          |  |
| 20                    | 64QAM      | 1       | 0         | 21.54               | 21.54                  | 21.46                |                     |          |  |
| 20                    | 64QAM      | 1       | 49        | 21.57               | 21.58                  | 21.43                | 22                  | 2        |  |
| 20                    | 64QAM      | 1       | 99        | 21.57               | 21.58                  | 21.43                |                     |          |  |
| 20                    | 64QAM      | 50      | 0         | 20.67               | 20.61                  | 20.54                |                     |          |  |
| 20                    | 64QAM      | 50      | 24        | 20.7                | 20.65                  | 20.53                | 21                  | 3        |  |
| 20                    | 64QAM      | 50      | 50        | 20.7                | 20.65                  | 20.48                |                     |          |  |
| 20                    | 64QAM      | 100     | 0         | 20.63               | 20.57                  | 20.47                |                     |          |  |
| Channel               |            |         |           | 20625               | 21100                  | 21375                | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)       |            |         |           | 2007.5              | 2035                   | 2062.5               |                     |          |  |
| 15                    | QPSK       | 1       | 0         | 23.34               | 23.33                  | 23.23                | 24                  | 0        |  |
| 15                    | QPSK       | 1       | 37        | 23.38               | 23.39                  | 23.23                |                     |          |  |
| 15                    | QPSK       | 1       | 74        | 23.49               | 23.45                  | 23.29                |                     |          |  |
| 15                    | QPSK       | 36      | 0         | 22.49               | 22.43                  | 22.36                | 23                  | 1        |  |
| 15                    | QPSK       | 36      | 20        | 22.63               | 22.47                  | 22.4                 |                     |          |  |
| 15                    | QPSK       | 36      | 39        | 22.51               | 22.44                  | 22.31                |                     |          |  |
| 15                    | QPSK       | 75      | 0         | 22.47               | 22.41                  | 22.36                | 23                  | 1        |  |
| 15                    | 16QAM      | 1       | 0         | 22.7                | 22.68                  | 22.6                 |                     |          |  |
| 15                    | 16QAM      | 1       | 37        | 22.74               | 22.71                  | 22.58                |                     |          |  |
| 15                    | 16QAM      | 1       | 74        | 22.77               | 22.74                  | 22.58                | 22                  | 2        |  |
| 15                    | 16QAM      | 36      | 0         | 21.75               | 21.69                  | 21.56                |                     |          |  |
| 15                    | 16QAM      | 36      | 20        | 21.77               | 21.7                   | 21.58                |                     |          |  |
| 15                    | 16QAM      | 36      | 39        | 21.77               | 21.7                   | 21.49                | 22                  | 2        |  |
| 15                    | 16QAM      | 75      | 0         | 21.71               | 21.66                  | 21.54                |                     |          |  |
| 15                    | 64QAM      | 1       | 0         | 21.54               | 21.55                  | 21.5                 |                     |          |  |
| 15                    | 64QAM      | 1       | 37        | 21.59               | 21.61                  | 21.48                | 22                  | 2        |  |
| 15                    | 64QAM      | 1       | 74        | 21.59               | 21.65                  | 21.43                |                     |          |  |
| 15                    | 64QAM      | 36      | 0         | 20.74               | 20.69                  | 20.58                |                     |          |  |
| 15                    | 64QAM      | 36      | 20        | 20.78               | 20.71                  | 20.57                | 21                  | 3        |  |
| 15                    | 64QAM      | 36      | 39        | 20.78               | 20.71                  | 20.51                |                     |          |  |
| 15                    | 64QAM      | 75      | 0         | 20.71               | 20.65                  | 20.55                |                     |          |  |
| Channel               |            |         |           | 20800               | 21100                  | 21400                | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)       |            |         |           | 2055                | 2035                   | 2065                 |                     |          |  |
| 10                    | QPSK       | 1       | 0         | 23.37               | 23.44                  | 23.26                | 24                  | 0        |  |
| 10                    | QPSK       | 1       | 25        | 23.38               | 23.45                  | 23.22                |                     |          |  |
| 10                    | QPSK       | 1       | 49        | 23.44               | 23.43                  | 23.29                |                     |          |  |
| 10                    | QPSK       | 25      | 0         | 22.68               | 22.46                  | 22.37                | 23                  | 1        |  |
| 10                    | QPSK       | 25      | 12        | 22.65               | 22.63                  | 22.38                |                     |          |  |
| 10                    | QPSK       | 25      | 25        | 22.67               | 22.62                  | 22.37                |                     |          |  |
| 10                    | QPSK       | 50      | 0         | 22.49               | 22.44                  | 22.34                | 23                  | 1        |  |
| 10                    | 16QAM      | 1       | 0         | 22.77               | 22.76                  | 22.61                |                     |          |  |
| 10                    | 16QAM      | 1       | 25        | 22.77               | 22.86                  | 22.62                |                     |          |  |
| 10                    | 16QAM      | 1       | 49        | 22.83               | 22.83                  | 22.66                | 22                  | 2        |  |
| 10                    | 16QAM      | 25      | 0         | 21.71               | 21.69                  | 21.57                |                     |          |  |
| 10                    | 16QAM      | 25      | 12        | 21.77               | 21.73                  | 21.59                |                     |          |  |
| 10                    | 16QAM      | 25      | 25        | 21.74               | 21.68                  | 21.58                | 22                  | 2        |  |
| 10                    | 16QAM      | 50      | 0         | 21.68               | 21.62                  | 21.54                |                     |          |  |
| 10                    | 64QAM      | 1       | 0         | 21.73               | 21.78                  | 21.6                 |                     |          |  |
| 10                    | 64QAM      | 1       | 25        | 21.76               | 21.79                  | 21.58                | 22                  | 2        |  |
| 10                    | 64QAM      | 1       | 49        | 21.78               | 21.82                  | 21.72                |                     |          |  |
| 10                    | 64QAM      | 25      | 0         | 20.72               | 20.72                  | 20.58                |                     |          |  |
| 10                    | 64QAM      | 25      | 12        | 20.78               | 20.75                  | 20.62                | 21                  | 3        |  |
| 10                    | 64QAM      | 25      | 25        | 20.76               | 20.69                  | 20.56                |                     |          |  |
| 10                    | 64QAM      | 50      | 0         | 20.67               | 20.61                  | 20.53                |                     |          |  |
| Channel               |            |         |           | 20775               | 21100                  | 21425                | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)       |            |         |           | 2092.5              | 2035                   | 2097.5               |                     |          |  |
| 5                     | QPSK       | 1       | 0         | 23.45               | 23.41                  | 23.29                | 24                  | 0        |  |
| 5                     | QPSK       | 1       | 12        | 23.47               | 23.53                  | 23.29                |                     |          |  |
| 5                     | QPSK       | 1       | 24        | 23.46               | 23.5                   | 23.32                |                     |          |  |
| 5                     | QPSK       | 12      | 0         | 22.55               | 22.48                  | 22.37                | 23                  | 1        |  |
| 5                     | QPSK       | 12      | 7         | 22.57               | 22.56                  | 22.41                |                     |          |  |
| 5                     | QPSK       | 12      | 13        | 22.56               | 22.56                  | 22.35                |                     |          |  |
| 5                     | QPSK       | 25      | 0         | 22.67               | 22.61                  | 22.39                | 23                  | 1        |  |
| 5                     | 16QAM      | 1       | 0         | 22.82               | 22.75                  | 22.64                |                     |          |  |
| 5                     | 16QAM      | 1       | 12        | 22.83               | 22.82                  | 22.6                 |                     |          |  |
| 5                     | 16QAM      | 1       | 24        | 22.85               | 22.81                  | 22.64                | 22                  | 2        |  |
| 5                     | 16QAM      | 12      | 0         | 21.78               | 21.75                  | 21.58                |                     |          |  |
| 5                     | 16QAM      | 12      | 7         | 21.81               | 21.75                  | 21.65                |                     |          |  |
| 5                     | 16QAM      | 12      | 13        | 21.76               | 21.74                  | 21.59                | 22                  | 2        |  |
| 5                     | 16QAM      | 25      | 0         | 21.76               | 21.7                   | 21.58                |                     |          |  |
| 5                     | 64QAM      | 1       | 0         | 21.73               | 21.72                  | 21.51                |                     |          |  |
| 5                     | 64QAM      | 1       | 12        | 21.72               | 21.77                  | 21.55                | 22                  | 2        |  |
| 5                     | 64QAM      | 1       | 24        | 21.71               | 21.71                  | 21.53                |                     |          |  |
| 5                     | 64QAM      | 12      | 0         | 20.71               | 20.69                  | 20.55                |                     |          |  |
| 5                     | 64QAM      | 12      | 7         | 20.76               | 20.73                  | 20.63                | 21                  | 3        |  |
| 5                     | 64QAM      | 12      | 13        | 20.76               | 20.71                  | 20.57                |                     |          |  |
| 5                     | 64QAM      | 25      | 0         | 20.72               | 20.69                  | 20.58                |                     |          |  |

| Band 12 (700MHz Low Band)         |            |         |           |                   |                      |                    |                     |          |  |
|-----------------------------------|------------|---------|-----------|-------------------|----------------------|--------------------|---------------------|----------|--|
| Part 27(only on channel required) |            |         |           |                   |                      |                    |                     |          |  |
| BW [MHz]                          | Modulation | RB Size | RB Offset | Power Low Ch./Fwd | Power Middle Ch./Fwd | Power High Ch./Fwd | Tune-up limit (dBm) | MPR (dB) |  |
| Channel                           |            |         |           | 23050             | 23055                | 23150              |                     |          |  |
| Frequency (MHz)                   |            |         |           | 704               | 707.5                | 711                |                     |          |  |
| 10                                | QPSK       | 1       | 0         | 22.94             | 23.06                | 22.91              | 24                  | 0        |  |
| 10                                | QPSK       | 1       | 25        | 22.91             | 22.91                | 22.89              |                     |          |  |
| 10                                | QPSK       | 1       | 49        | 22.96             | 22.96                | 22.91              |                     |          |  |
| 10                                | QPSK       | 25      | 0         | 21.9              | 22.12                | 21.9               | 23                  | 1        |  |
| 10                                | QPSK       | 25      | 12        | 22.11             | 22.01                | 22.01              |                     |          |  |
| 10                                | QPSK       | 25      | 25        | 22.07             | 22.03                | 21.99              |                     |          |  |
| 10                                | QPSK       | 50      | 0         | 22.06             | 22.07                | 21.92              | 23                  | 1        |  |
| 10                                | 16QAM      | 1       | 0         | 22.33             | 22.33                | 22.31              |                     |          |  |
| 10                                | 16QAM      | 1       | 25        | 22.31             | 22.36                | 22.29              |                     |          |  |
| 10                                | 16QAM      | 1       | 49        | 22.35             | 22.34                | 22.3               | 22                  | 2        |  |
| 10                                | 16QAM      | 25      | 0         | 21.11             | 21.11                | 21.09              |                     |          |  |
| 10                                | 16QAM      | 25      | 12        | 21.33             | 21.25                | 21.2               |                     |          |  |
| 10                                | 16QAM      | 25      | 25        | 21.25             | 21.26                | 21.23              | 22                  | 2        |  |
| 10                                | 16QAM      | 50      | 0         | 21.22             | 21.16                | 21.11              |                     |          |  |
| 10                                | 64QAM      | 1       | 0         | 21.36             | 21.38                | 21.34              |                     |          |  |
| 10                                | 64QAM      | 1       | 25        | 21.29             | 21.33                | 21.34              | 22                  | 2        |  |
| 10                                | 64QAM      | 1       | 49        | 21.4              | 21.37                | 21.23              |                     |          |  |
| 10                                | 64QAM      | 25      | 0         | 20.16             | 20.11                | 20.1               |                     |          |  |
| 10                                | 64QAM      | 25      | 12        | 20.33             | 20.26                | 20.2               | 21                  | 3        |  |
| 10                                | 64QAM      | 25      | 25        | 20.24             | 20.25                | 20.18              |                     |          |  |
| 10                                | 64QAM      | 50      | 0         | 20.24             | 20.15                | 20.12              |                     |          |  |
| Channel                           |            |         |           | 23055             | 23056                | 23155              | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)                   |            |         |           | 701.5             | 707.5                | 713.5              |                     |          |  |
| 5                                 | QPSK       | 1       | 0         | 22.95             | 22.94                | 22.91              | 24                  | 0        |  |
| 5                                 | QPSK       | 1       | 12        | 23                | 23                   | 22.94              |                     |          |  |
| 5                                 | QPSK       | 1       | 24        | 22.99             | 22.97                | 22.91              |                     |          |  |
| 5                                 | QPSK       | 12      | 0         | 22.09             | 22                   | 21.94              | 23                  | 1        |  |
| 5                                 | QPSK       | 12      | 7         | 22.12             | 22.06                | 21.99              |                     |          |  |
| 5                                 | QPSK       | 12      | 13        | 22.1              | 22.05                | 22                 |                     |          |  |
| 5                                 | QPSK       | 25      | 0         | 22.08             | 22.03                | 21.93              | 23                  | 1        |  |
| 5                                 | 16QAM      | 1       | 0         | 22.31             | 22.25                | 22.27              |                     |          |  |
| 5                                 | 16QAM      | 1       | 12        | 22.36             | 22.34                | 22.29              |                     |          |  |
| 5                                 | 16QAM      | 1       | 24        | 22.36             | 22.32                | 22.26              | 22                  | 2        |  |
| 5                                 | 16QAM      | 12      | 0         | 21.34             | 21.25                | 21.18              |                     |          |  |
| 5                                 | 16QAM      | 12      | 7         | 21.35             | 21.26                | 21.21              |                     |          |  |
| 5                                 | 16QAM      | 12      | 13        | 21.29             | 21.28                | 21.21              | 22                  | 2        |  |
| 5                                 | 16QAM      | 25      | 0         | 21.13             | 21.04                | 21.05              |                     |          |  |
| 5                                 | 64QAM      | 1       | 0         | 21.22             | 21.21                | 21.13              |                     |          |  |
| 5                                 | 64QAM      | 1       | 12        | 21.25             | 21.22                | 21.15              | 22                  | 2        |  |
| 5                                 | 64QAM      | 1       | 24        | 21.25             | 21.24                | 21.15              |                     |          |  |
| 5                                 | 64QAM      | 12      | 0         | 20.3              | 20.23                | 20.16              |                     |          |  |
| 5                                 | 64QAM      | 12      | 7         | 20.33             | 20.25                | 20.17              | 21                  | 3        |  |
| 5                                 | 64QAM      | 12      | 13        | 20.29             | 20.29                | 20.18              |                     |          |  |
| 5                                 | 64QAM      | 25      | 0         | 20.32             | 20.23                | 20.17              |                     |          |  |
| Channel                           |            |         |           | 23025             | 23035                | 23165              | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)                   |            |         |           | 700.5             | 707.5                | 714.5              |                     |          |  |
| 3                                 | QPSK       | 1       | 0         | 23.07             | 22.98                | 22.83              | 24                  | 0        |  |
| 3                                 | QPSK       | 1       | 8         | 23.01             | 23.07                | 22.96              |                     |          |  |
| 3                                 | QPSK       | 1       | 14        | 23.01             | 23.02                | 22.91              |                     |          |  |
| 3                                 | QPSK       | 8       | 0         | 22.11             | 22.02                | 22                 | 23                  | 1        |  |
| 3                                 | QPSK       | 8       | 4         | 22.13             | 22.06                | 22.01              |                     |          |  |
| 3                                 | QPSK       | 8       | 7         | 22.06             | 22.08                | 21.99              |                     |          |  |
| 3                                 | QPSK       | 15      | 0         | 22.1              | 22.03                | 21.97              | 23                  | 1        |  |
| 3                                 | 16QAM      | 1       | 0         | 22.41             | 22.34                | 22.23              |                     |          |  |
| 3                                 | 16QAM      | 1       | 8         | 22.45             | 22.41                | 22.29              |                     |          |  |
| 3                                 | 16QAM      | 1       | 14        | 22.35             | 22.33                | 22.2               | 22                  | 2        |  |
| 3                                 | 16QAM      | 8       | 0         | 21.37             | 21.31                | 21.26              |                     |          |  |
| 3                                 | 16QAM      | 8       | 4         | 21.38             | 21.3                 | 21.25              |                     |          |  |
| 3                                 | 16QAM      | 8       | 7         | 21.34             | 21.35                | 21.25              | 22                  | 2        |  |
| 3                                 | 16QAM      | 15      | 0         | 21.36             | 21.24                | 21.23              |                     |          |  |
| 3                                 | 64QAM      | 1       | 0         | 21.3              | 21.21                | 21.19              |                     |          |  |
| 3                                 | 64QAM      | 1       | 8         | 21.34             | 21.32                | 21.22              | 22                  | 2        |  |
| 3                                 | 64QAM      | 1       | 14        | 21.26             | 21.26                | 21.15              |                     |          |  |
| 3                                 | 64QAM      | 8       | 0         | 20.33             | 20.26                | 20.24              |                     |          |  |
| 3                                 | 64QAM      | 8       | 4         | 20.33             | 20.27                | 20.24              | 21                  | 3        |  |
| 3                                 | 64QAM      | 8       | 7         | 20.33             | 20.31                | 20.26              |                     |          |  |
| 3                                 | 64QAM      | 15      | 0         | 20.32             | 20.25                | 20.2               |                     |          |  |
| Channel                           |            |         |           | 23017             | 23036                | 23173              | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)                   |            |         |           | 699.7             | 707.5                | 715.3              |                     |          |  |
| 1.4                               | QPSK       | 1       | 0         | 22.89             | 22.83                | 22.78              | 24                  | 0        |  |
| 1.4                               | QPSK       | 1       | 3         | 22.97             | 22.95                | 22.82              |                     |          |  |
| 1.4                               | QPSK       | 1       | 5         | 22.93             | 22.87                | 22.76              |                     |          |  |
| 1.4                               | QPSK       | 3       | 0         | 22.88             | 22.87                | 22.86              | 23                  | 1        |  |
| 1.4                               | QPSK       | 3       | 1         | 23                | 22.96                | 22.85              |                     |          |  |
| 1.4                               | QPSK       | 3       | 3         | 22.95             | 22.93                | 22.87              |                     |          |  |
| 1.4                               | QPSK       | 6       | 0         | 22                | 21.92                | 21.86              | 23                  | 1        |  |
| 1.4                               | 16QAM      | 1       | 0         | 22.59             | 22.49                | 22.45              |                     |          |  |
| 1.4                               | 16QAM      | 1       | 3         | 22.38             | 22.32                | 22.17              |                     |          |  |
| 1.4                               | 16QAM      | 1       | 5         | 22.26             | 22.26                | 22.15              | 23                  | 1        |  |
| 1.4                               | 16QAM      | 3       | 0         | 22.05             | 21.94                | 21.94              |                     |          |  |
| 1.4                               | 16QAM      | 3       | 1         | 22.08             | 22.06                | 21.9               |                     |          |  |
| 1.4                               | 16QAM      | 3       | 3         | 22.01             | 22                   | 21.87              | 22                  | 2        |  |
| 1.4                               | 64QAM      | 6       | 0         | 21.29             | 21.21                | 21.13              |                     |          |  |
| 1.4                               | 64QAM      | 1       | 0         | 21.17             | 21.13                | 21.04              |                     |          |  |
| 1.4                               | 64QAM      | 1       | 3         | 21.2              | 21.22                | 21.08              | 22                  | 2        |  |
| 1.4                               | 64QAM      | 1       | 5         | 21.18             | 21.15                | 21.06              |                     |          |  |
| 1.4                               | 64QAM      | 3       | 0         | 21.09             | 21.01                | 20.93              |                     |          |  |
| 1.4                               | 64QAM      | 3       | 1         | 21.15             | 21.13                | 21                 | 21                  | 3        |  |
| 1.4                               | 64QAM      | 3       | 3         | 21.09             | 21.06                | 20.93              |                     |          |  |
| 1.4                               | 64QAM      | 6       | 0         | 20.21             | 20.13                | 20.08              |                     |          |  |

| Band 26 for FCC<br>(only on channel required) |            |         |           |                                                                   |                              |                            |                        |             |             |  |
|-----------------------------------------------|------------|---------|-----------|-------------------------------------------------------------------|------------------------------|----------------------------|------------------------|-------------|-------------|--|
| BW (MHz)                                      | Modulation | RB Size | RB Offset | Power<br>Low<br>Ch. Freq.                                         | Power<br>Middle<br>Ch. Freq. | Power<br>High<br>Ch. Freq. | Tune-up limit<br>(dBm) | MPR<br>(dB) |             |  |
| Channel                                       |            |         |           | 26705                                                             | 26850                        | 26995                      |                        |             |             |  |
| Frequency (MHz)                               |            |         |           | 821.5                                                             | 831.5                        | 841.5                      |                        |             |             |  |
| 15                                            | QPSK       | 1       | 0         | 23.35                                                             | 23.37                        | 23.1                       | 24                     | 0           |             |  |
| 15                                            | QPSK       | 1       | 37        | 23.23                                                             | 23.23                        | 22.93                      |                        |             |             |  |
| 15                                            | QPSK       | 1       | 74        | 23.2                                                              | 23.07                        | 22.97                      |                        |             |             |  |
| 15                                            | QPSK       | 36      | 0         | 22.05                                                             | 22.2                         | 21.84                      |                        |             |             |  |
| 15                                            | QPSK       | 36      | 20        | 22.19                                                             | 22.07                        | 21.96                      | 23                     | 1           |             |  |
| 15                                            | QPSK       | 36      | 39        | 22.13                                                             | 21.96                        | 21.94                      |                        |             |             |  |
| 15                                            | QPSK       | 75      | 0         | 22.09                                                             | 22.11                        | 21.79                      |                        |             |             |  |
| 15                                            | 16QAM      | 1       | 0         | 22.31                                                             | 22.34                        | 22.2                       |                        |             |             |  |
| 15                                            | 16QAM      | 1       | 37        | 22.37                                                             | 22.33                        | 22.08                      | 23                     | 1           |             |  |
| 15                                            | 16QAM      | 1       | 74        | 22.28                                                             | 22.17                        | 22                         |                        |             |             |  |
| 15                                            | 16QAM      | 36      | 0         | 21.27                                                             | 21.24                        | 21.06                      |                        |             |             |  |
| 15                                            | 16QAM      | 36      | 20        | 21.38                                                             | 21.29                        | 21.05                      |                        |             |             |  |
| 15                                            | 16QAM      | 36      | 39        | 21.3                                                              | 21.2                         | 20.94                      | 22                     | 2           |             |  |
| 15                                            | 16QAM      | 75      | 0         | 21.33                                                             | 21.23                        | 21.01                      |                        |             |             |  |
| 15                                            | 64QAM      | 1       | 0         | 21.38                                                             | 21.21                        | 21.08                      |                        |             |             |  |
| 15                                            | 64QAM      | 1       | 37        | 21.23                                                             | 21.22                        | 20.93                      |                        |             |             |  |
| 15                                            | 64QAM      | 1       | 74        | 21.15                                                             | 21.06                        | 20.89                      | 21                     | 3           |             |  |
| 15                                            | 64QAM      | 36      | 0         | 20.26                                                             | 20.25                        | 20.03                      |                        |             |             |  |
| 15                                            | 64QAM      | 36      | 20        | 20.39                                                             | 20.31                        | 20.05                      |                        |             |             |  |
| 15                                            | 64QAM      | 36      | 39        | 20.29                                                             | 20.18                        | 19.96                      |                        |             |             |  |
| 15                                            | 64QAM      | 75      | 0         | 20.33                                                             | 20.24                        | 20.02                      | Tune-up limit<br>(dBm) |             | MPR<br>(dB) |  |
| Channel                                       |            |         |           | 26740                                                             | 26850                        | 26995                      |                        |             |             |  |
| Frequency (MHz)                               |            |         |           | 819                                                               | 831.5                        | 844                        | Tune-up limit<br>(dBm) | MPR<br>(dB) |             |  |
|                                               |            |         |           | 23.29                                                             | 23.32                        | 23.08                      |                        |             |             |  |
| 10                                            | QPSK       | 1       | 0         | 23.29                                                             | 23.32                        | 23.08                      | 24                     | 0           |             |  |
| 10                                            | QPSK       | 1       | 25        | 23.32                                                             | 23.28                        | 22.96                      |                        |             |             |  |
| 10                                            | QPSK       | 1       | 49        | 23.34                                                             | 23.21                        | 22.97                      |                        |             |             |  |
| 10                                            | QPSK       | 25      | 0         | 22.24                                                             | 22.09                        | 21.82                      |                        |             |             |  |
| 10                                            | QPSK       | 25      | 12        | 22.31                                                             | 22.18                        | 21.91                      | 23                     | 1           |             |  |
| 10                                            | QPSK       | 25      | 25        | 22.24                                                             | 22.07                        | 21.81                      |                        |             |             |  |
| 10                                            | QPSK       | 50      | 0         | 22.25                                                             | 22.06                        | 21.84                      |                        |             |             |  |
| 10                                            | 16QAM      | 1       | 0         | 22.29                                                             | 22.08                        | 22.23                      |                        |             |             |  |
| 10                                            | 16QAM      | 1       | 25        | 22.13                                                             | 22.12                        | 22.2                       | 23                     | 1           |             |  |
| 10                                            | 16QAM      | 1       | 49        | 22.2                                                              | 22.09                        | 22.14                      |                        |             |             |  |
| 10                                            | 16QAM      | 25      | 0         | 21.09                                                             | 20.94                        | 21.06                      |                        |             |             |  |
| 10                                            | 16QAM      | 25      | 12        | 21.17                                                             | 21.06                        | 21.14                      |                        |             |             |  |
| 10                                            | 16QAM      | 25      | 25        | 21.08                                                             | 20.93                        | 21.05                      | 22                     | 2           |             |  |
| 10                                            | 16QAM      | 50      | 0         | 21.1                                                              | 20.95                        | 21.02                      |                        |             |             |  |
| 10                                            | 64QAM      | 1       | 0         | 21.3                                                              | 21.16                        | 21.22                      |                        |             |             |  |
| 10                                            | 64QAM      | 1       | 25        | 21.15                                                             | 21.11                        | 21.21                      |                        |             |             |  |
| 10                                            | 64QAM      | 1       | 49        | 21.11                                                             | 21                           | 21.17                      | 22                     | 2           |             |  |
| 10                                            | 64QAM      | 25      | 0         | 20.08                                                             | 19.93                        | 20.04                      |                        |             |             |  |
| 10                                            | 64QAM      | 25      | 12        | 20.19                                                             | 20.04                        | 20.13                      |                        |             |             |  |
| 10                                            | 64QAM      | 25      | 25        | 20.09                                                             | 19.91                        | 20.08                      |                        |             |             |  |
| 10                                            | 64QAM      | 50      | 0         | 20.08                                                             | 19.95                        | 19.97                      | Tune-up limit<br>(dBm) |             | MPR<br>(dB) |  |
| Channel                                       |            |         |           | 26715 <th>26850</th> <th>27015</th> <th></th> <th></th> <th></th> | 26850                        | 27015                      |                        |             |             |  |
| Frequency (MHz)                               |            |         |           | 816.5                                                             | 831.5                        | 846.5                      | Tune-up limit<br>(dBm) | MPR<br>(dB) |             |  |
|                                               |            |         |           | 23.19                                                             | 23.3                         | 23.04                      |                        |             |             |  |
| 5                                             | QPSK       | 1       | 0         | 23.19                                                             | 23.3                         | 23.04                      | 24                     | 0           |             |  |
| 5                                             | QPSK       | 1       | 12        | 23.31                                                             | 23.35                        | 23                         |                        |             |             |  |
| 5                                             | QPSK       | 1       | 24        | 23.33                                                             | 23.32                        | 22.97                      |                        |             |             |  |
| 5                                             | QPSK       | 12      | 0         | 22.35                                                             | 22.17                        | 21.88                      |                        |             |             |  |
| 5                                             | QPSK       | 12      | 7         | 22.38                                                             | 22.22                        | 21.98                      | 23                     | 1           |             |  |
| 5                                             | QPSK       | 12      | 13        | 22.32                                                             | 22.15                        | 21.89                      |                        |             |             |  |
| 5                                             | QPSK       | 25      | 0         | 22.35                                                             | 22.16                        | 21.91                      |                        |             |             |  |
| 5                                             | 16QAM      | 1       | 0         | 22.16                                                             | 22.08                        | 22.2                       |                        |             |             |  |
| 5                                             | 16QAM      | 1       | 12        | 22.25                                                             | 22.12                        | 22.14                      | 23                     | 1           |             |  |
| 5                                             | 16QAM      | 1       | 24        | 22.12                                                             | 22.01                        | 22.11                      |                        |             |             |  |
| 5                                             | 16QAM      | 12      | 0         | 21.21                                                             | 21.02                        | 21.15                      |                        |             |             |  |
| 5                                             | 16QAM      | 12      | 7         | 21.23                                                             | 21.06                        | 21.19                      |                        |             |             |  |
| 5                                             | 16QAM      | 12      | 13        | 21.21                                                             | 21.02                        | 21.08                      | 22                     | 2           |             |  |
| 5                                             | 16QAM      | 25      | 0         | 21.21                                                             | 21.03                        | 21.09                      |                        |             |             |  |
| 5                                             | 64QAM      | 1       | 0         | 21.07                                                             | 20.97                        | 21.12                      |                        |             |             |  |
| 5                                             | 64QAM      | 1       | 12        | 21.14                                                             | 21.04                        | 21.01                      |                        |             |             |  |
| 5                                             | 64QAM      | 1       | 24        | 21.03                                                             | 20.9                         | 21.02                      | 21                     | 3           |             |  |
| 5                                             | 64QAM      | 12      | 0         | 20.16                                                             | 20.02                        | 20.17                      |                        |             |             |  |
| 5                                             | 64QAM      | 12      | 7         | 20.24                                                             | 20.07                        | 20.15                      |                        |             |             |  |
| 5                                             | 64QAM      | 12      | 13        | 20.15                                                             | 20.01                        | 20.1                       |                        |             |             |  |
| 5                                             | 64QAM      | 25      | 0         | 20.17                                                             | 20.02                        | 20.09                      | Tune-up limit<br>(dBm) |             | MPR<br>(dB) |  |
| Channel                                       |            |         |           | 26705                                                             | 26850                        | 27025                      |                        |             |             |  |
| Frequency (MHz)                               |            |         |           | 815.5                                                             | 831.5                        | 847.5                      | Tune-up limit<br>(dBm) | MPR<br>(dB) |             |  |
|                                               |            |         |           | 23.29                                                             | 23.3                         | 23.08                      |                        |             |             |  |
| 3                                             | QPSK       | 1       | 0         | 23.29                                                             | 23.3                         | 23.08                      | 24                     | 0           |             |  |
| 3                                             | QPSK       | 1       | 8         | 23.29                                                             | 23.18                        | 23.12                      |                        |             |             |  |
| 3                                             | QPSK       | 1       | 14        | 23.09                                                             | 23.25                        | 23.05                      |                        |             |             |  |
| 3                                             | QPSK       | 8       | 0         | 22.37                                                             | 22.16                        | 21.97                      |                        |             |             |  |
| 3                                             | QPSK       | 8       | 4         | 22.41                                                             | 22.22                        | 22.01                      | 23                     | 1           |             |  |
| 3                                             | QPSK       | 8       | 7         | 22.36                                                             | 22.17                        | 21.92                      |                        |             |             |  |
| 3                                             | QPSK       | 15      | 0         | 22.38                                                             | 22.19                        | 21.98                      |                        |             |             |  |
| 3                                             | 16QAM      | 1       | 0         | 22.18                                                             | 22.02                        | 22.13                      |                        |             |             |  |
| 3                                             | 16QAM      | 1       | 8         | 22.24                                                             | 22.17                        | 22.17                      | 23                     | 1           |             |  |
| 3                                             | 16QAM      | 1       | 14        | 22.18                                                             | 22.03                        | 22.1                       |                        |             |             |  |
| 3                                             | 16QAM      | 8       | 0         | 21.26                                                             | 21.08                        | 21.25                      |                        |             |             |  |
| 3                                             | 16QAM      | 8       | 4         | 21.33                                                             | 21.12                        | 21.21                      |                        |             |             |  |
| 3                                             | 16QAM      | 8       | 7         | 21.26                                                             | 21.08                        | 21.2                       | 22                     | 2           |             |  |
| 3                                             | 16QAM      | 15      | 0         | 21.24                                                             | 21.03                        | 21.12                      |                        |             |             |  |
| 3                                             | 64QAM      | 1       | 0         | 21.1                                                              | 20.95                        | 21.02                      |                        |             |             |  |
| 3                                             | 64QAM      | 1       | 8         | 21.18                                                             | 21.06                        | 21.1                       |                        |             |             |  |
| 3                                             | 64QAM      | 1       | 14        | 21.08                                                             | 20.9                         | 21.07                      | 22                     | 2           |             |  |
| 3                                             | 64QAM      | 8       | 0         | 20.22                                                             | 20.03                        | 20.16                      |                        |             |             |  |
| 3                                             | 64QAM      | 8       | 4         | 20.28                                                             | 20.05                        | 20.2                       |                        |             |             |  |
| 3                                             | 64QAM      | 8       | 7         | 20.23                                                             | 20.02                        | 20.13                      |                        |             |             |  |
| 3                                             | 64QAM      | 15      | 0         | 20.22                                                             | 20.01                        | 20.08                      | Tune-up limit<br>(dBm) |             | MPR<br>(dB) |  |
| Channel                                       |            |         |           | 26937                                                             | 26950                        | 27033                      |                        |             |             |  |
| Frequency (MHz)                               |            |         |           | 814.7                                                             | 831.5                        | 848.3                      | Tune-up limit<br>(dBm) | MPR<br>(dB) |             |  |
|                                               |            |         |           | 23.33                                                             | 23.14                        | 23.01                      |                        |             |             |  |
| 1.4                                           | QPSK       | 1       | 0         | 23.33                                                             | 23.14                        | 23.01                      | 24                     | 0           |             |  |
| 1.4                                           | QPSK       | 1       | 3         | 23.18                                                             | 23.3                         | 23.09                      |                        |             |             |  |
| 1.4                                           | QPSK       | 1       | 5         | 23.32                                                             | 23.15                        | 23                         |                        |             |             |  |
| 1.4                                           | QPSK       | 3       | 0         | 23.36                                                             | 23.2                         | 22.99                      |                        |             |             |  |
| 1.4                                           | QPSK       | 3       | 1         | 23.08                                                             | 23.29                        | 23.02                      | 23                     | 1           |             |  |
| 1.4                                           | QPSK       | 3       | 3         | 23.03                                                             | 23.2                         | 23                         |                        |             |             |  |
| 1.4                                           | QPSK       | 6       | 0         | 21.94                                                             | 22.09                        | 21.86                      |                        |             |             |  |
| 1.4                                           | 16QAM      | 1       | 0         | 22.1                                                              | 22.27                        | 22.06                      |                        |             |             |  |
| 1.4                                           | 16QAM      | 1       | 3         | 22.2                                                              | 22.38                        | 22.1                       | 23                     | 1           |             |  |
| 1.4                                           | 16QAM      | 1       | 5         | 22.09                                                             | 22.27                        | 22.05                      |                        |             |             |  |
| 1.4                                           | 16QAM      | 3       | 0         | 21.96                                                             | 22.08                        | 21.98                      |                        |             |             |  |
| 1.4                                           | 16QAM      | 3       | 1         | 21.99                                                             | 22.21                        | 22.04                      |                        |             |             |  |
| 1.4                                           | 16QAM      | 3       | 3         | 21.92                                                             | 22.07                        | 21.95                      | 22                     | 2           |             |  |
| 1.4                                           | 16QAM      | 6       | 0         | 21.19                                                             | 21.34                        | 21.1                       |                        |             |             |  |
| 1.4                                           | 64QAM      | 1       | 0         | 21.01                                                             | 21.22                        | 20.97                      |                        |             |             |  |
| 1.4                                           | 64QAM      | 1       | 3         | 21.1                                                              | 21.32                        | 20.99                      |                        |             |             |  |
| 1.4                                           | 64QAM      | 1       | 5         | 21.04                                                             | 21.2                         | 21.11                      | 22                     | 2           |             |  |
| 1.4                                           | 64QAM      | 3       | 0         | 20.94                                                             | 21.12                        | 20.9                       |                        |             |             |  |
| 1.4                                           | 64QAM      | 3       | 1         | 21.01                                                             | 21.24                        | 20.98                      |                        |             |             |  |
| 1.4                                           | 64QAM      | 3       | 3         | 20.95                                                             | 21.12                        | 20.91                      |                        |             |             |  |
| 1.4                                           | 64QAM      | 6       | 0         | 20.12                                                             | 20.29                        | 20.06                      | 21                     | 3           |             |  |

| Band 66         |            |         |           |                     |                        |                      |                     |          |  |                     |          |  |
|-----------------|------------|---------|-----------|---------------------|------------------------|----------------------|---------------------|----------|--|---------------------|----------|--|
| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. Freq. | Power Middle Ch. Freq. | Power High Ch. Freq. | Tune-up limit (dBm) | MPR (dB) |  |                     |          |  |
| Channel         |            |         |           | 133002              | 133252                 | 133502               |                     |          |  |                     |          |  |
| Frequency (MHz) |            |         |           | 1720                | 1745                   | 1770                 |                     |          |  |                     |          |  |
| 20              | QPSK       | 1       | 0         | 23.1                | 23.27                  | 23.02                | 24                  | 0        |  |                     |          |  |
| 20              | QPSK       | 1       | 49        | 23.12               | 23.08                  | 22.83                |                     |          |  |                     |          |  |
| 20              | QPSK       | 1       | 99        | 23.15               | 22.97                  | 23                   |                     |          |  |                     |          |  |
| 20              | QPSK       | 50      | 0         | 22.03               | 22.1                   | 21.83                |                     |          |  |                     |          |  |
| 20              | QPSK       | 50      | 24        | 22.09               | 21.98                  | 21.78                | 23                  | 1        |  |                     |          |  |
| 20              | QPSK       | 50      | 50        | 22.07               | 21.98                  | 21.81                |                     |          |  |                     |          |  |
| 20              | QPSK       | 100     | 0         | 22.01               | 22.02                  | 21.7                 |                     |          |  |                     |          |  |
| 20              | 16QAM      | 1       | 0         | 22.33               | 22.27                  | 22.14                |                     |          |  |                     |          |  |
| 20              | 16QAM      | 1       | 49        | 22.31               | 22.23                  | 21.99                | 23                  | 1        |  |                     |          |  |
| 20              | 16QAM      | 1       | 99        | 22.25               | 22.16                  | 21.89                |                     |          |  |                     |          |  |
| 20              | 16QAM      | 50      | 0         | 21.25               | 21.17                  | 21.04                |                     |          |  |                     |          |  |
| 20              | 16QAM      | 50      | 24        | 21.27               | 21.15                  | 21.01                |                     |          |  |                     |          |  |
| 20              | 16QAM      | 50      | 50        | 21.25               | 21.09                  | 20.79                | 22                  | 2        |  |                     |          |  |
| 20              | 16QAM      | 100     | 0         | 21.21               | 21.05                  | 20.88                |                     |          |  |                     |          |  |
| 20              | 64QAM      | 1       | 0         | 21.15               | 21.15                  | 21.15                |                     |          |  |                     |          |  |
| 20              | 64QAM      | 1       | 49        | 21.21               | 21.24                  | 21.03                |                     |          |  |                     |          |  |
| 20              | 64QAM      | 1       | 99        | 21.31               | 21.12                  | 20.87                | 21                  | 3        |  |                     |          |  |
| 20              | 64QAM      | 50      | 0         | 20.24               | 20.19                  | 20.04                |                     |          |  |                     |          |  |
| 20              | 64QAM      | 50      | 24        | 20.33               | 20.19                  | 20.02                |                     |          |  |                     |          |  |
| 20              | 64QAM      | 50      | 50        | 20.25               | 20.1                   | 19.84                |                     |          |  |                     |          |  |
| 20              | 64QAM      | 100     | 0         | 20.26               | 20.06                  | 19.92                |                     |          |  |                     |          |  |
| Channel         |            |         |           | 133047              | 133252                 | 133597               |                     |          |  |                     |          |  |
| Frequency (MHz) |            |         |           | 1717.5              | 1745                   | 1772.5               | Tune-up limit (dBm) | MPR (dB) |  |                     |          |  |
| 15              | QPSK       | 1       | 0         | 23.05               | 22.95                  | 22.87                | 24                  | 0        |  |                     |          |  |
| 15              | QPSK       | 1       | 37        | 23.08               | 22.7                   | 22.81                |                     |          |  |                     |          |  |
| 15              | QPSK       | 1       | 74        | 22.93               | 22.71                  | 22.68                |                     |          |  |                     |          |  |
| 15              | QPSK       | 36      | 0         | 22.15               | 21.94                  | 21.91                |                     |          |  |                     |          |  |
| 15              | QPSK       | 36      | 20        | 22.2                | 21.92                  | 21.82                | 23                  | 1        |  |                     |          |  |
| 15              | QPSK       | 36      | 39        | 22.07               | 21.76                  | 21.73                |                     |          |  |                     |          |  |
| 15              | QPSK       | 75      | 0         | 22.13               | 21.75                  | 21.67                |                     |          |  |                     |          |  |
| 15              | 16QAM      | 1       | 0         | 22.03               | 22.18                  | 22.12                |                     |          |  |                     |          |  |
| 15              | 16QAM      | 1       | 37        | 22.06               | 22.3                   | 21.97                | 23                  | 1        |  |                     |          |  |
| 15              | 16QAM      | 1       | 74        | 21.99               | 22.02                  | 21.62                |                     |          |  |                     |          |  |
| 15              | 16QAM      | 36      | 0         | 21.05               | 21.05                  | 21.1                 |                     |          |  |                     |          |  |
| 15              | 16QAM      | 36      | 20        | 21.04               | 21.04                  | 21.06                |                     |          |  |                     |          |  |
| 15              | 16QAM      | 36      | 39        | 20.96               | 20.91                  | 20.95                | 22                  | 2        |  |                     |          |  |
| 15              | 16QAM      | 75      | 0         | 21                  | 20.97                  | 20.88                |                     |          |  |                     |          |  |
| 15              | 64QAM      | 1       | 0         | 20.94               | 20.95                  | 20.84                |                     |          |  |                     |          |  |
| 15              | 64QAM      | 1       | 37        | 20.98               | 20.95                  | 20.96                |                     |          |  |                     |          |  |
| 15              | 64QAM      | 1       | 74        | 20.83               | 20.93                  | 20.83                | 22                  | 2        |  |                     |          |  |
| 15              | 64QAM      | 36      | 0         | 20.01               | 20.11                  | 20.09                |                     |          |  |                     |          |  |
| 15              | 64QAM      | 36      | 20        | 20.09               | 20.33                  | 19.89                |                     |          |  |                     |          |  |
| 15              | 64QAM      | 36      | 39        | 19.96               | 19.96                  | 19.9                 |                     |          |  |                     |          |  |
| 15              | 64QAM      | 75      | 0         | 19.99               | 19.98                  | 19.92                | 21                  | 3        |  |                     |          |  |
| Channel         |            |         |           | 133022              | 133252                 | 133622               |                     |          |  |                     |          |  |
| Frequency (MHz) |            |         |           | 1715                | 1745                   | 1775                 |                     |          |  | Tune-up limit (dBm) | MPR (dB) |  |
| 10              | QPSK       | 1       | 0         | 23.21               | 23.24                  | 23                   |                     |          |  | 24                  | 0        |  |
| 10              | QPSK       | 1       | 25        | 23.24               | 23.2                   | 22.88                |                     |          |  |                     |          |  |
| 10              | QPSK       | 1       | 49        | 23.26               | 23.13                  | 22.89                |                     |          |  |                     |          |  |
| 10              | QPSK       | 25      | 0         | 22.16               | 22.01                  | 21.74                |                     |          |  |                     |          |  |
| 10              | QPSK       | 25      | 12        | 22.23               | 22.1                   | 21.83                | 23                  | 1        |  |                     |          |  |
| 10              | QPSK       | 25      | 25        | 22.16               | 21.99                  | 21.73                |                     |          |  |                     |          |  |
| 10              | QPSK       | 50      | 0         | 22.17               | 21.98                  | 21.75                |                     |          |  |                     |          |  |
| 10              | 16QAM      | 1       | 0         | 22.21               | 22.01                  | 22.05                |                     |          |  |                     |          |  |
| 10              | 16QAM      | 1       | 25        | 22.05               | 22.04                  | 22.12                | 23                  | 1        |  |                     |          |  |
| 10              | 16QAM      | 1       | 49        | 22.12               | 22                     | 22.06                |                     |          |  |                     |          |  |
| 10              | 16QAM      | 25      | 0         | 21.01               | 20.86                  | 20.98                |                     |          |  |                     |          |  |
| 10              | 16QAM      | 25      | 12        | 21.09               | 20.98                  | 21.06                |                     |          |  |                     |          |  |
| 10              | 16QAM      | 25      | 25        | 21                  | 20.85                  | 20.97                | 22                  | 2        |  |                     |          |  |
| 10              | 16QAM      | 50      | 0         | 21.02               | 20.97                  | 20.94                |                     |          |  |                     |          |  |
| 10              | 64QAM      | 1       | 0         | 21.22               | 21.08                  | 21.14                |                     |          |  |                     |          |  |
| 10              | 64QAM      | 1       | 25        | 21.07               | 21.03                  | 21.13                |                     |          |  |                     |          |  |
| 10              | 64QAM      | 1       | 49        | 21.03               | 20.92                  | 21.09                | 22                  | 2        |  |                     |          |  |
| 10              | 64QAM      | 25      | 0         | 20                  | 19.85                  | 19.96                |                     |          |  |                     |          |  |
| 10              | 64QAM      | 25      | 12        | 20.11               | 19.96                  | 20.05                |                     |          |  |                     |          |  |
| 10              | 64QAM      | 25      | 25        | 20.01               | 19.83                  | 20                   |                     |          |  |                     |          |  |
| 10              | 64QAM      | 50      | 0         | 20                  | 19.87                  | 19.89                | 21                  | 3        |  |                     |          |  |
| Channel         |            |         |           | 131997              | 133252                 | 133647               |                     |          |  |                     |          |  |
| Frequency (MHz) |            |         |           | 1712.5              | 1745                   | 1777.5               |                     |          |  | Tune-up limit (dBm) | MPR (dB) |  |
| 5               | QPSK       | 1       | 0         | 23.06               | 23.11                  | 23.19                |                     |          |  | 24                  | 0        |  |
| 5               | QPSK       | 1       | 12        | 23.09               | 22.87                  | 23.12                |                     |          |  |                     |          |  |
| 5               | QPSK       | 1       | 24        | 22.9                | 23.13                  | 23.02                |                     |          |  |                     |          |  |
| 5               | QPSK       | 12      | 0         | 22.13               | 22.32                  | 22.07                |                     |          |  |                     |          |  |
| 5               | QPSK       | 12      | 7         | 22.11               | 22.32                  | 22.02                | 23                  | 1        |  |                     |          |  |
| 5               | QPSK       | 12      | 13        | 22.03               | 22.26                  | 21.99                |                     |          |  |                     |          |  |
| 5               | QPSK       | 25      | 0         | 22.09               | 22.27                  | 22.11                |                     |          |  |                     |          |  |
| 5               | 16QAM      | 1       | 0         | 22.06               | 22.21                  | 22.11                |                     |          |  |                     |          |  |
| 5               | 16QAM      | 1       | 12        | 22.08               | 22.33                  | 22.15                | 23                  | 1        |  |                     |          |  |
| 5               | 16QAM      | 1       | 24        | 21.9                | 21.9                   | 21.95                |                     |          |  |                     |          |  |
| 5               | 16QAM      | 12      | 0         | 21.05               | 21.25                  | 21.06                |                     |          |  |                     |          |  |
| 5               | 16QAM      | 12      | 7         | 21.03               | 21.2                   | 21.06                |                     |          |  |                     |          |  |
| 5               | 16QAM      | 12      | 13        | 20.98               | 21.14                  | 20.96                | 22                  | 2        |  |                     |          |  |
| 5               | 16QAM      | 25      | 0         | 21                  | 21.2                   | 20.86                |                     |          |  |                     |          |  |
| 5               | 64QAM      | 1       | 0         | 20.98               | 21.16                  | 21.07                |                     |          |  |                     |          |  |
| 5               | 64QAM      | 1       | 12        | 21.05               | 21.27                  | 21.07                |                     |          |  |                     |          |  |
| 5               | 64QAM      | 1       | 24        | 20.85               | 21.04                  | 20.92                | 22                  | 2        |  |                     |          |  |
| 5               | 64QAM      | 12      | 0         | 20.03               | 20.2                   | 20.05                |                     |          |  |                     |          |  |
| 5               | 64QAM      | 12      | 7         | 20.02               | 20.21                  | 20.05                |                     |          |  |                     |          |  |
| 5               | 64QAM      | 12      | 13        | 19.93               | 20.05                  | 19.95                |                     |          |  |                     |          |  |
| 5               | 64QAM      | 25      | 0         | 19.96               | 20.15                  | 19.87                | 21                  | 3        |  |                     |          |  |
| Channel         |            |         |           | 131987              | 133252                 | 133657               |                     |          |  |                     |          |  |
| Frequency (MHz) |            |         |           | 1711.5              | 1745                   | 1778.5               |                     |          |  | Tune-up limit (dBm) | MPR (dB) |  |
| 3               | QPSK       | 1       | 0         | 22.84               | 22.56                  | 22.53                |                     |          |  | 24                  | 0        |  |
| 3               | QPSK       | 1       | 8         | 22.92               | 22.61                  | 22.56                |                     |          |  |                     |          |  |
| 3               | QPSK       | 1       | 14        | 22.72               | 22.51                  | 22.44                |                     |          |  |                     |          |  |
| 3               | QPSK       | 8       | 0         | 22.04               | 21.78                  | 21.63                |                     |          |  |                     |          |  |
| 3               | QPSK       | 8       | 4         | 22.05               | 21.81                  | 21.85                | 23                  | 1        |  |                     |          |  |
| 3               | QPSK       | 8       | 7         | 21.91               | 21.7                   | 21.87                |                     |          |  |                     |          |  |
| 3               | QPSK       | 15      | 0         | 21.92               | 21.75                  | 21.49                |                     |          |  |                     |          |  |
| 3               | 16QAM      | 1       | 0         | 22.22               | 21.85                  | 21.76                |                     |          |  |                     |          |  |
| 3               | 16QAM      | 1       | 8         | 22.24               | 21.97                  | 21.78                | 23                  | 1        |  |                     |          |  |
| 3               | 16QAM      | 1       | 14        | 22.01               | 21.82                  | 21.74                |                     |          |  |                     |          |  |
| 3               | 16QAM      | 8       | 0         | 21.25               | 20.95                  | 20.77                |                     |          |  |                     |          |  |
| 3               | 16QAM      | 8       | 4         | 21.17               | 21                     | 20.75                |                     |          |  |                     |          |  |
| 3               | 16QAM      | 8       | 7         | 21.08               | 20.78                  | 20.75                | 22                  | 2        |  |                     |          |  |
| 3               | 16QAM      | 15      | 0         | 21.12               | 20.87                  | 20.7                 |                     |          |  |                     |          |  |
| 3               | 64QAM      | 1       | 0         | 21.01               | 20.87                  | 20.85                |                     |          |  |                     |          |  |
| 3               | 64QAM      | 1       | 8         | 21.09               | 20.79                  | 20.68                |                     |          |  |                     |          |  |
| 3               | 64QAM      | 1       | 14        | 20.76               | 20.68                  | 20.67                | 22                  | 2        |  |                     |          |  |
| 3               | 64QAM      | 8       | 0         | 20.27               | 19.96                  | 19.84                |                     |          |  |                     |          |  |
| 3               | 64QAM      | 8       | 4         | 20.2                | 19.99                  | 19.83                |                     |          |  |                     |          |  |
| 3               | 64QAM      | 8       | 7         | 20.1                | 19.81                  | 19.77                |                     |          |  |                     |          |  |
| 3               | 64QAM      | 15      | 0         | 20.14               | 19.93                  | 19.7                 |                     |          |  |                     |          |  |
| Channel         |            |         |           | 131979              | 133252                 | 133655               |                     |          |  |                     |          |  |
| Frequency (MHz) |            |         |           | 1710.5              | 1745                   | 1778.5               | Tune-up limit (dBm) | MPR (dB) |  |                     |          |  |
| 1.4             | QPSK       | 1       | 0         | 22.88               | 22.68                  | 22.68                | 24                  | 0        |  |                     |          |  |
| 1.4             | QPSK       | 1       | 3         | 22.7                | 22.82                  | 22.81                |                     |          |  |                     |          |  |
| 1.4             | QPSK       | 1       | 5         | 22.84               | 22.67                  | 22.52                |                     |          |  |                     |          |  |
| 1.4             | QPSK       | 3       | 0         | 22.88               | 22.72                  | 22.51                |                     |          |  |                     |          |  |
| 1.4             | QPSK       | 3       | 1         | 22.8                | 22.81                  | 22.54                | 23                  | 1        |  |                     |          |  |
| 1.4             | QPSK       | 3       | 3         | 22.95               | 22.72                  | 22.52                |                     |          |  |                     |          |  |
| 1.4             | QPSK       | 6       | 0         | 21.48               | 21.61                  | 21.38                |                     |          |  |                     |          |  |
| 1.4             | 16QAM      | 1       | 0         | 21.62               | 21.79                  | 21.58                |                     |          |  |                     |          |  |
| 1.4             | 16QAM      | 1       | 3         | 21.72               | 21.9                   | 21.62                | 23                  | 1        |  |                     |          |  |
| 1.4             | 16QAM      | 1       | 5         | 21.61               | 21.79                  | 21.57                |                     |          |  |                     |          |  |
| 1.4             | 16QAM      | 3       | 0         | 21.48               | 21.6                   | 21.5                 |                     |          |  |                     |          |  |
| 1.4             | 16QAM      | 3       | 1         | 21.51               | 21.73                  | 21.56                |                     |          |  |                     |          |  |
| 1.4             | 16QAM      | 3       | 3         | 21.44               | 21.59                  | 21.47                | 22                  | 2        |  |                     |          |  |
| 1.4             | 16QAM      | 6       | 0         | 20.71               | 20.86                  | 20.62                |                     |          |  |                     |          |  |
| 1.4             | 64QAM      | 1       | 0         | 20.53               | 20.74                  | 20.49                |                     |          |  |                     |          |  |
| 1.4             | 64QAM      | 1       | 3         | 20.62               | 20.84                  | 20.51                |                     |          |  |                     |          |  |
| 1.4             | 64QAM      | 1       | 5         | 20.56               | 20.72                  | 20.63                | 22                  | 2        |  |                     |          |  |
| 1.4             | 64QAM      | 3       | 0         | 20.46               | 20.67                  | 20.42                |                     |          |  |                     |          |  |
| 1.4             | 64QAM      | 3       | 3         | 20.53               | 20.75                  | 20.51                |                     |          |  |                     |          |  |
| 1.4             | 64QAM      | 3       | 3         | 20.47               | 20.64                  | 20.43                |                     |          |  |                     |          |  |
| 1.4             | 64QAM      | 6       | 0         | 19.64               | 19.81                  | 19.58                | 21                  | 3        |  |                     |          |  |

| Band 38(only on channel required) |            |         |           |                       |                          |                        |                     |          |  |
|-----------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|--|
| BW [MHz]                          | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |  |
| Channel                           |            |         |           | 37850                 | 38000                    | 38150                  | 24                  | 0        |  |
| Frequency (MHz)                   |            |         |           | 2580                  | 2595                     | 2610                   |                     |          |  |
| 20                                | QPSK       | 1       | 0         | 23.28                 | 23.33                    | 23.28                  |                     |          |  |
| 20                                | QPSK       | 1       | 49        | 23.14                 | 23.28                    | 23.31                  |                     |          |  |
| 20                                | QPSK       | 1       | 99        | 23.13                 | 23.32                    | 23.2                   | 23                  | 1        |  |
| 20                                | QPSK       | 50      | 0         | 22.26                 | 22.37                    | 22.19                  |                     |          |  |
| 20                                | QPSK       | 50      | 24        | 22.2                  | 22.36                    | 22.32                  |                     |          |  |
| 20                                | QPSK       | 50      | 50        | 22.32                 | 22.29                    | 22.32                  |                     |          |  |
| 20                                | QPSK       | 100     | 0         | 22.25                 | 22.27                    | 22.22                  | 23                  | 1        |  |
| 20                                | 16QAM      | 1       | 0         | 22.09                 | 22.06                    | 22.03                  |                     |          |  |
| 20                                | 16QAM      | 1       | 49        | 22.06                 | 22.04                    | 22.03                  |                     |          |  |
| 20                                | 16QAM      | 1       | 99        | 22.1                  | 22.08                    | 22.11                  |                     |          |  |
| 20                                | 16QAM      | 50      | 0         | 21.15                 | 21.12                    | 21.06                  | 22                  | 2        |  |
| 20                                | 16QAM      | 50      | 24        | 21.25                 | 21.25                    | 21.17                  |                     |          |  |
| 20                                | 16QAM      | 50      | 50        | 21.19                 | 21.17                    | 21.17                  |                     |          |  |
| 20                                | 16QAM      | 100     | 0         | 21.13                 | 21.13                    | 21.07                  |                     |          |  |
| 20                                | 64QAM      | 1       | 0         | 21.08                 | 21.17                    | 21.18                  | 22                  | 2        |  |
| 20                                | 64QAM      | 1       | 49        | 21.04                 | 21.06                    | 21.14                  |                     |          |  |
| 20                                | 64QAM      | 1       | 99        | 21.06                 | 21.13                    | 21.17                  |                     |          |  |
| 20                                | 64QAM      | 50      | 0         | 20.29                 | 20.27                    | 20.2                   |                     |          |  |
| 20                                | 64QAM      | 50      | 24        | 20.38                 | 20.39                    | 20.34                  | 21                  | 3        |  |
| 20                                | 64QAM      | 50      | 50        | 20.33                 | 20.33                    | 20.33                  |                     |          |  |
| 20                                | 64QAM      | 100     | 0         | 20.4                  | 20.38                    | 20.34                  |                     |          |  |
| Channel                           |            |         |           | 37825                 | 38000                    | 38175                  | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)                   |            |         |           | 2577.5                | 2595                     | 2612.5                 | 24                  | 0        |  |
| 15                                | QPSK       | 1       | 0         | 23.22                 | 23.15                    | 23.21                  |                     |          |  |
| 15                                | QPSK       | 1       | 37        | 23.26                 | 23.2                     | 23.25                  |                     |          |  |
| 15                                | QPSK       | 1       | 74        | 23.19                 | 23.25                    | 23.32                  | 23                  | 1        |  |
| 15                                | QPSK       | 36      | 0         | 22.28                 | 22.28                    | 22.2                   |                     |          |  |
| 15                                | QPSK       | 36      | 20        | 22.36                 | 22.36                    | 22.39                  |                     |          |  |
| 15                                | QPSK       | 36      | 39        | 22.31                 | 22.29                    | 22.32                  |                     |          |  |
| 15                                | QPSK       | 75      | 0         | 22.29                 | 22.29                    | 22.32                  | 23                  | 1        |  |
| 15                                | 16QAM      | 1       | 0         | 22.41                 | 22.38                    | 22.34                  |                     |          |  |
| 15                                | 16QAM      | 1       | 37        | 22.34                 | 22.33                    | 22.39                  |                     |          |  |
| 15                                | 16QAM      | 1       | 74        | 22.1                  | 22.08                    | 22.09                  |                     |          |  |
| 15                                | 16QAM      | 36      | 0         | 21.08                 | 21.06                    | 21.02                  | 22                  | 2        |  |
| 15                                | 16QAM      | 36      | 20        | 21.18                 | 21.17                    | 21.21                  |                     |          |  |
| 15                                | 16QAM      | 36      | 39        | 21.13                 | 21.11                    | 21.12                  |                     |          |  |
| 15                                | 16QAM      | 75      | 0         | 21.16                 | 21.14                    | 21.2                   |                     |          |  |
| 15                                | 64QAM      | 1       | 0         | 21.04                 | 21.03                    | 21.07                  | 22                  | 2        |  |
| 15                                | 64QAM      | 1       | 37        | 20.98                 | 21.08                    | 21.12                  |                     |          |  |
| 15                                | 64QAM      | 1       | 74        | 21.01                 | 21.07                    | 21.1                   |                     |          |  |
| 15                                | 64QAM      | 36      | 0         | 20.36                 | 20.32                    | 20.26                  | 21                  | 3        |  |
| 15                                | 64QAM      | 36      | 20        | 20.2                  | 20.02                    | 20.19                  |                     |          |  |
| 15                                | 64QAM      | 36      | 39        | 20.39                 | 20.35                    | 20.38                  |                     |          |  |
| 15                                | 64QAM      | 75      | 0         | 20.37                 | 20.37                    | 20.39                  |                     |          |  |
| Channel                           |            |         |           | 37800                 | 38000                    | 38200                  | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)                   |            |         |           | 2575                  | 2595                     | 2615                   | 24                  | 0        |  |
| 10                                | QPSK       | 1       | 0         | 22.95                 | 23.23                    | 23.21                  |                     |          |  |
| 10                                | QPSK       | 1       | 25        | 23.13                 | 23.2                     | 23.22                  |                     |          |  |
| 10                                | QPSK       | 1       | 49        | 23.01                 | 23.28                    | 22.98                  | 23                  | 1        |  |
| 10                                | QPSK       | 25      | 0         | 22.24                 | 22.22                    | 22.15                  |                     |          |  |
| 10                                | QPSK       | 25      | 12        | 22.36                 | 22.37                    | 22.32                  |                     |          |  |
| 10                                | QPSK       | 25      | 25        | 22.29                 | 22.26                    | 22.07                  |                     |          |  |
| 10                                | QPSK       | 50      | 0         | 22.26                 | 22.28                    | 22.2                   | 23                  | 1        |  |
| 10                                | 16QAM      | 1       | 0         | 22.1                  | 22.33                    | 22.38                  |                     |          |  |
| 10                                | 16QAM      | 1       | 25        | 22.37                 | 22.36                    | 22.42                  |                     |          |  |
| 10                                | 16QAM      | 1       | 49        | 22.11                 | 22.4                     | 22.07                  |                     |          |  |
| 10                                | 16QAM      | 25      | 0         | 21.11                 | 21.07                    | 21.06                  | 22                  | 2        |  |
| 10                                | 16QAM      | 25      | 12        | 21.24                 | 21.2                     | 21.16                  |                     |          |  |
| 10                                | 16QAM      | 25      | 25        | 21.13                 | 21.13                    | 21.17                  |                     |          |  |
| 10                                | 16QAM      | 50      | 0         | 21.15                 | 21.14                    | 21.1                   |                     |          |  |
| 10                                | 64QAM      | 1       | 0         | 20.87                 | 21.16                    | 21.17                  | 22                  | 2        |  |
| 10                                | 64QAM      | 1       | 25        | 21.09                 | 21.09                    | 21.12                  |                     |          |  |
| 10                                | 64QAM      | 1       | 49        | 20.84                 | 21.16                    | 21.22                  |                     |          |  |
| 10                                | 64QAM      | 25      | 0         | 20.27                 | 20.29                    | 20.25                  | 21                  | 3        |  |
| 10                                | 64QAM      | 25      | 12        | 20.2                  | 20.19                    | 20.38                  |                     |          |  |
| 10                                | 64QAM      | 25      | 25        | 20.36                 | 20.34                    | 20.18                  |                     |          |  |
| 10                                | 64QAM      | 50      | 0         | 20.33                 | 20.31                    | 20.26                  |                     |          |  |
| Channel                           |            |         |           | 37775                 | 38000                    | 38225                  | Tune-up limit (dBm) | MPR (dB) |  |
| Frequency (MHz)                   |            |         |           | 2572.5                | 2595                     | 2617.5                 | 24                  | 0        |  |
| 5                                 | QPSK       | 1       | 0         | 23.2                  | 23.13                    | 23.18                  |                     |          |  |
| 5                                 | QPSK       | 1       | 12        | 23.24                 | 23.2                     | 23.25                  |                     |          |  |
| 5                                 | QPSK       | 1       | 24        | 23.19                 | 23.18                    | 23.23                  | 23                  | 1        |  |
| 5                                 | QPSK       | 12      | 0         | 22.33                 | 22.27                    | 22.31                  |                     |          |  |
| 5                                 | QPSK       | 12      | 7         | 22.38                 | 22.34                    | 22.4                   |                     |          |  |
| 5                                 | QPSK       | 12      | 13        | 22.36                 | 22.32                    | 22.35                  |                     |          |  |
| 5                                 | QPSK       | 25      | 0         | 22.33                 | 22.31                    | 22.33                  | 23                  | 1        |  |
| 5                                 | 16QAM      | 1       | 0         | 21.93                 | 21.92                    | 21.99                  |                     |          |  |
| 5                                 | 16QAM      | 1       | 12        | 22.11                 | 22.05                    | 22.16                  |                     |          |  |
| 5                                 | 16QAM      | 1       | 24        | 22.04                 | 22.01                    | 22.04                  |                     |          |  |
| 5                                 | 16QAM      | 12      | 0         | 21.15                 | 21.12                    | 21.15                  | 22                  | 2        |  |
| 5                                 | 16QAM      | 12      | 7         | 21.2                  | 21.18                    | 21.22                  |                     |          |  |
| 5                                 | 16QAM      | 12      | 13        | 21.19                 | 21.14                    | 21.2                   |                     |          |  |
| 5                                 | 16QAM      | 25      | 0         | 21.22                 | 21.16                    | 21.25                  |                     |          |  |
| 5                                 | 64QAM      | 1       | 0         | 20.97                 | 20.95                    | 20.98                  | 22                  | 2        |  |
| 5                                 | 64QAM      | 1       | 12        | 21.03                 | 20.97                    | 21                     |                     |          |  |
| 5                                 | 64QAM      | 1       | 24        | 21.01                 | 20.99                    | 21.01                  |                     |          |  |
| 5                                 | 64QAM      | 12      | 0         | 20.37                 | 20.32                    | 20.35                  | 21                  | 3        |  |
| 5                                 | 64QAM      | 12      | 7         | 20.41                 | 20.4                     | 20.18                  |                     |          |  |
| 5                                 | 64QAM      | 12      | 13        | 20.38                 | 20.35                    | 20.41                  |                     |          |  |
| 5                                 | 64QAM      | 25      | 0         | 20.38                 | 20.34                    | 20.38                  |                     |          |  |

| Band 41 (2.6G Band) |            |         |           |                       |                              |                          |                               |                        |                     |          |
|---------------------|------------|---------|-----------|-----------------------|------------------------------|--------------------------|-------------------------------|------------------------|---------------------|----------|
| BW [MHz]            | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
| Channel             |            |         |           | 36750                 | 40185                        | 40620                    | 41055                         | 41490                  | 24                  | 0        |
| Frequency (MHz)     |            |         |           | 2506                  | 2549.5                       | 2593                     | 2636.5                        | 2680                   |                     |          |
| 20                  | QPSK       | 1       | 0         | 23.40                 | 23.33                        | 23.43                    | 23.34                         | 23.25                  |                     |          |
| 20                  | QPSK       | 1       | 49        | 23.13                 | 23                           | 23.04                    | 22.95                         | 23.12                  |                     |          |
| 20                  | QPSK       | 1       | 99        | 23.14                 | 23.01                        | 23.05                    | 23.16                         | 23.04                  | 23                  | 1        |
| 20                  | QPSK       | 50      | 0         | 22.22                 | 22.08                        | 22.42                    | 22.14                         | 22.36                  |                     |          |
| 20                  | QPSK       | 50      | 24        | 22.26                 | 22.05                        | 22.15                    | 22.28                         | 22.41                  |                     |          |
| 20                  | QPSK       | 50      | 50        | 22.17                 | 22.08                        | 22.11                    | 22.16                         | 22.12                  |                     |          |
| 20                  | QPSK       | 100     | 0         | 22.15                 | 21.98                        | 22.29                    | 22.19                         | 22.16                  | 23                  | 1        |
| 20                  | 16QAM      | 1       | 0         | 21.96                 | 21.81                        | 21.53                    | 21.57                         | 21.5                   |                     |          |
| 20                  | 16QAM      | 1       | 49        | 21.91                 | 21.77                        | 21.8                     | 21.92                         | 21.86                  |                     |          |
| 20                  | 16QAM      | 1       | 99        | 21.89                 | 21.76                        | 21.57                    | 21.54                         | 21.78                  |                     |          |
| 20                  | 16QAM      | 50      | 0         | 21.45                 | 21.29                        | 21.15                    | 21.34                         | 21.3                   | 22                  | 2        |
| 20                  | 16QAM      | 50      | 24        | 21.47                 | 21.34                        | 21.37                    | 21.27                         | 21.47                  |                     |          |
| 20                  | 16QAM      | 50      | 50        | 21.47                 | 21.28                        | 21.33                    | 21.4                          | 21.4                   |                     |          |
| 20                  | 16QAM      | 100     | 0         | 21.38                 | 21.21                        | 21.26                    | 21.4                          | 21.38                  |                     |          |
| 20                  | 64QAM      | 1       | 0         | 21.08                 | 20.87                        | 20.76                    | 20.74                         | 20.72                  | 22                  | 2        |
| 20                  | 64QAM      | 1       | 49        | 21.01                 | 20.83                        | 21.11                    | 21.22                         | 20.86                  |                     |          |
| 20                  | 64QAM      | 1       | 99        | 20.94                 | 20.82                        | 20.73                    | 20.79                         | 20.76                  |                     |          |
| 20                  | 64QAM      | 50      | 0         | 20.37                 | 20.2                         | 20.11                    | 20.27                         | 20.27                  |                     |          |
| 20                  | 64QAM      | 50      | 24        | 20.42                 | 20.21                        | 20.34                    | 20.42                         | 20.41                  | 21                  | 3        |
| 20                  | 64QAM      | 50      | 50        | 20.36                 | 20.21                        | 20.28                    | 20.33                         | 20.33                  |                     |          |
| 20                  | 64QAM      | 100     | 0         | 20.42                 | 20.24                        | 20.3                     | 20.42                         | 20.43                  |                     |          |
| Channel             |            |         |           | 36725                 | 40173                        | 40620                    | 41058                         | 41515                  | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz)     |            |         |           | 2503.5                | 2548.3                       | 2593                     | 2637.8                        | 2682.5                 | 24                  | 0        |
| 15                  | QPSK       | 1       | 0         | 23.42                 | 23.05                        | 23.09                    | 23.37                         | 23.25                  |                     |          |
| 15                  | QPSK       | 1       | 37        | 23.13                 | 23.25                        | 23                       | 23.21                         | 23.19                  |                     |          |
| 15                  | QPSK       | 1       | 74        | 23.15                 | 23.16                        | 22.95                    | 23.04                         | 23.15                  | 23                  | 1        |
| 15                  | QPSK       | 36      | 0         | 22.27                 | 22                           | 21.96                    | 22.15                         | 22.19                  |                     |          |
| 15                  | QPSK       | 36      | 20        | 21.91                 | 22.06                        | 22.17                    | 22.23                         | 22.23                  |                     |          |
| 15                  | QPSK       | 36      | 39        | 22.25                 | 21.98                        | 22.12                    | 22.24                         | 22.22                  |                     |          |
| 15                  | QPSK       | 75      | 0         | 21.76                 | 21.99                        | 22.12                    | 22.15                         | 22.26                  | 23                  | 1        |
| 15                  | 16QAM      | 1       | 0         | 22.32                 | 21.9                         | 21.9                     | 22.08                         | 22.08                  |                     |          |
| 15                  | 16QAM      | 1       | 37        | 22.07                 | 22.09                        | 22.08                    | 22.21                         | 22.21                  |                     |          |
| 15                  | 16QAM      | 1       | 74        | 22.01                 | 21.91                        | 22.04                    | 22.08                         | 22.26                  |                     |          |
| 15                  | 16QAM      | 36      | 0         | 21.09                 | 21.17                        | 21.13                    | 21.31                         | 21.36                  | 22                  | 2        |
| 15                  | 16QAM      | 36      | 20        | 21.42                 | 21.24                        | 21.31                    | 21.4                          | 21.38                  |                     |          |
| 15                  | 16QAM      | 36      | 39        | 21.26                 | 21.17                        | 21.31                    | 21.39                         | 21.39                  |                     |          |
| 15                  | 16QAM      | 75      | 0         | 21.36                 | 21.22                        | 21.32                    | 21.37                         | 21.47                  |                     |          |
| 15                  | 64QAM      | 1       | 0         | 21.4                  | 21.01                        | 20.96                    | 21.44                         | 21.39                  | 22                  | 2        |
| 15                  | 64QAM      | 1       | 37        | 21.3                  | 21.18                        | 21.38                    | 21.33                         | 21.25                  |                     |          |
| 15                  | 64QAM      | 1       | 74        | 21.35                 | 21.02                        | 21.23                    | 21.34                         | 21.23                  |                     |          |
| 15                  | 64QAM      | 36      | 0         | 20.45                 | 20.24                        | 20.17                    | 20.36                         | 20.39                  |                     |          |
| 15                  | 64QAM      | 36      | 20        | 20.46                 | 20.28                        | 20.36                    | 20.43                         | 20.42                  | 21                  | 3        |
| 15                  | 64QAM      | 36      | 39        | 20.35                 | 20.21                        | 20.33                    | 20.43                         | 20.44                  |                     |          |
| 15                  | 64QAM      | 75      | 0         | 20.38                 | 20.23                        | 20.3                     | 20.39                         | 20.46                  |                     |          |
| Channel             |            |         |           | 36700                 | 40160                        | 40620                    | 41080                         | 41540                  | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz)     |            |         |           | 2501                  | 2547                         | 2593                     | 2639                          | 2685                   | 24                  | 0        |
| 10                  | QPSK       | 1       | 0         | 23.16                 | 22.75                        | 22.78                    | 22.98                         | 22.95                  |                     |          |
| 10                  | QPSK       | 1       | 25        | 23.06                 | 22.96                        | 23                       | 23.2                          | 23.12                  |                     |          |
| 10                  | QPSK       | 1       | 49        | 23.23                 | 22.76                        | 22.85                    | 23.02                         | 22.97                  | 23                  | 1        |
| 10                  | QPSK       | 25      | 0         | 22.27                 | 22.06                        | 22.13                    | 22.19                         | 22.25                  |                     |          |
| 10                  | QPSK       | 25      | 12        | 22.3                  | 22.15                        | 22.2                     | 22.26                         | 22.32                  |                     |          |
| 10                  | QPSK       | 25      | 25        | 22.22                 | 22.04                        | 22.12                    | 22.26                         | 22.24                  |                     |          |
| 10                  | QPSK       | 50      | 0         | 22.21                 | 22.02                        | 22.09                    | 22.16                         | 22.22                  | 23                  | 1        |
| 10                  | 16QAM      | 1       | 0         | 22.36                 | 21.88                        | 21.95                    | 22.09                         | 22.14                  |                     |          |
| 10                  | 16QAM      | 1       | 25        | 22.09                 | 22.15                        | 22.14                    | 22.34                         | 22.33                  |                     |          |
| 10                  | 16QAM      | 1       | 49        | 22                    | 21.9                         | 21.92                    | 22.07                         | 22.09                  |                     |          |
| 10                  | 16QAM      | 25      | 0         | 21.47                 | 21.28                        | 21.29                    | 21.39                         | 21.48                  | 22                  | 2        |
| 10                  | 16QAM      | 25      | 12        | 21.27                 | 21.35                        | 21.44                    | 21.27                         | 21.36                  |                     |          |
| 10                  | 16QAM      | 25      | 25        | 21.45                 | 21.26                        | 21.29                    | 21.49                         | 21.42                  |                     |          |
| 10                  | 16QAM      | 50      | 0         | 21.2                  | 21.3                         | 21.37                    | 21.41                         | 21.46                  |                     |          |
| 10                  | 64QAM      | 1       | 0         | 21.09                 | 21.12                        | 21.15                    | 21.28                         | 21.3                   | 22                  | 2        |
| 10                  | 64QAM      | 1       | 25        | 21.15                 | 21.34                        | 21.35                    | 21.16                         | 21.25                  |                     |          |
| 10                  | 64QAM      | 1       | 49        | 21.45                 | 21.13                        | 21.24                    | 21.48                         | 21.33                  |                     |          |
| 10                  | 64QAM      | 25      | 0         | 20.45                 | 20.28                        | 20.28                    | 20.37                         | 20.43                  |                     |          |
| 10                  | 64QAM      | 25      | 12        | 20.49                 | 20.38                        | 20.38                    | 20.47                         | 20.27                  | 21                  | 3        |
| 10                  | 64QAM      | 25      | 25        | 20.48                 | 20.24                        | 20.31                    | 20.45                         | 20.23                  |                     |          |
| 10                  | 64QAM      | 50      | 0         | 20.27                 | 20.25                        | 20.31                    | 20.36                         | 20.44                  |                     |          |
| Channel             |            |         |           | 36675                 | 40148                        | 40620                    | 41053                         | 41555                  |                     |          |
| Frequency (MHz)     |            |         |           | 2498.5                | 2545.8                       | 2593                     | 2640.3                        | 2687.5                 | 24                  | 0        |
| 5                   | QPSK       | 1       | 0         | 23.19                 | 23.06                        | 23.02                    | 23.22                         | 23.23                  |                     |          |
| 5                   | QPSK       | 1       | 12        | 23.22                 | 23.06                        | 23.1                     | 23.26                         | 23.23                  |                     |          |
| 5                   | QPSK       | 1       | 24        | 23.17                 | 23.01                        | 23.09                    | 23.29                         | 23.23                  | 23                  | 1        |
| 5                   | QPSK       | 12      | 0         | 22.29                 | 22.13                        | 22.18                    | 22.29                         | 22.34                  |                     |          |
| 5                   | QPSK       | 12      | 7         | 22.3                  | 22.16                        | 22.23                    | 22.33                         | 22.35                  |                     |          |
| 5                   | QPSK       | 12      | 13        | 22.27                 | 22.15                        | 22.18                    | 22.36                         | 22.3                   |                     |          |
| 5                   | QPSK       | 25      | 0         | 22.27                 | 22.16                        | 22.17                    | 22.3                          | 22.31                  | 23                  | 1        |
| 5                   | 16QAM      | 1       | 0         | 22.34                 | 22.22                        | 22.09                    | 22.21                         | 22.24                  |                     |          |
| 5                   | 16QAM      | 1       | 12        | 22.34                 | 22.18                        | 22.15                    | 22.28                         | 22.38                  |                     |          |
| 5                   | 16QAM      | 1       | 24        | 22.33                 | 22.13                        | 22.11                    | 22.37                         | 22.27                  |                     |          |
| 5                   | 16QAM      | 12      | 0         | 21.17                 | 21.02                        | 21.09                    | 21.19                         | 21.19                  | 22                  | 2        |
| 5                   | 16QAM      | 12      | 7         | 21.19                 | 21.08                        | 21.11                    | 21.18                         | 21.25                  |                     |          |
| 5                   | 16QAM      | 12      | 13        | 21.13                 | 21.05                        | 21.06                    | 21.23                         | 21.22                  |                     |          |
| 5                   | 16QAM      | 25      | 0         | 21.18                 | 21.06                        | 21.07                    | 21.21                         | 21.21                  |                     |          |
| 5                   | 64QAM      | 1       | 0         | 21.12                 | 21.04                        | 20.99                    | 21.24                         | 21.19                  | 21                  | 3        |
| 5                   | 64QAM      | 1       | 12        | 21.06                 | 21.14                        | 21.13                    | 21.32                         | 21.34                  |                     |          |
| 5                   | 64QAM      | 1       | 24        | 21.1                  | 21.06                        | 21.04                    | 21.28                         | 21.28                  |                     |          |
| 5                   | 64QAM      | 12      | 0         | 20.14                 | 20.02                        | 20.09                    | 20.16                         | 20.21                  |                     |          |
| 5                   | 64QAM      | 12      | 7         | 20.18                 | 20.07                        | 20.12                    | 20.23                         | 20.25                  | 21                  | 3        |
| 5                   | 64QAM      | 12      | 13        | 20.14                 | 20                           | 20.1                     | 20.24                         | 20.18                  |                     |          |
| 5                   | 64QAM      | 25      | 0         | 20.11                 | 20.03                        | 20.08                    | 20.2                          | 20.21                  |                     |          |

## Reduced Power Mode for Sensor On

| GSM850          | Burst Average Power (dBm) |       |       | Tune-up Limit (dBm) | Frame Average Power (dBm) |       |       | Tune-up Limit (dBm) |
|-----------------|---------------------------|-------|-------|---------------------|---------------------------|-------|-------|---------------------|
|                 | TX Channel                | 128   | 160   | 201                 | 128                       | 160   | 201   |                     |
| Frequency (MHz) | 824.2                     | 836.4 | 848.8 |                     | 824.2                     | 836.4 | 848.8 |                     |
| GSM 1 Tx slot   | 30.90                     | 30.91 | 30.92 | 31.00               | 21.90                     | 21.91 | 21.92 | 22.00               |
| GPRS 1 Tx slot  | 30.88                     | 30.90 | 30.85 | 31.00               | 21.88                     | 21.90 | 21.85 | 22.00               |
| GPRS 3 Tx slots | 28.60                     | 28.64 | 28.93 | 30.50               | 20.99                     | 21.84 | 23.93 | 24.00               |
| GPRS 3 Tx slots | 28.12                     | 28.35 | 28.34 | 29.00               | 23.86                     | 24.09 | 24.08 | 24.74               |
| GPRS 4 Tx slots | 28.54                     | 28.71 | 28.70 | 27.50               | 23.54                     | 23.71 | 23.70 | 24.90               |
| EDGE 1 Tx slot  | 25.40                     | 25.41 | 24.97 | 25.50               | 16.41                     | 15.97 | 16.50 |                     |
| EDGE 2 Tx slots | 23.92                     | 23.96 | 23.87 | 25.00               | 17.92                     | 17.95 | 17.87 | 19.00               |
| EDGE 3 Tx slots | 22.12                     | 22.21 | 22.10 | 23.00               | 17.86                     | 17.95 | 17.84 | 18.74               |
| EDGE 4 Tx slots | 20.67                     | 20.92 | 20.84 | 22.00               | 17.67                     | 17.92 | 17.84 | 19.00               |

| GSM1900         | Burst Average Power (dBm) |       |        | Tune-up Limit (dBm) | Frame Average Power (dBm) |       |        | Tune-up Limit (dBm) |
|-----------------|---------------------------|-------|--------|---------------------|---------------------------|-------|--------|---------------------|
|                 | TX Channel                | 512   | 661    | 810                 | 512                       | 661   | 810    |                     |
| Frequency (MHz) | 1850.2                    | 1860  | 1909.8 |                     | 1850.2                    | 1860  | 1909.8 |                     |
| GSM 1 Tx slot   | 23.41                     | 23.28 | 22.52  | 23.50               | 14.41                     | 14.26 | 13.52  | 14.50               |
| GPRS 1 Tx slot  | 23.40                     | 23.22 | 22.91  | 23.50               | 14.40                     | 14.22 | 13.51  | 14.50               |
| GPRS 2 Tx slots | 22.80                     | 21.51 | 21.87  | 23.00               | 16.80                     | 15.51 | 15.87  | 17.00               |
| GPRS 3 Tx slots | 21.22                     | 21.28 | 20.30  | 21.50               | 16.98                     | 17.02 | 16.04  | 17.54               |
| GPRS 4 Tx slots | 18.98                     | 18.38 | 18.02  | 19.50               | 13.98                     | 13.38 | 13.02  | 16.50               |
| EDGE 1 Tx slot  | 19.54                     | 19.22 | 18.91  | 20.00               | 10.54                     | 10.22 | 9.91   | 11.00               |
| EDGE 2 Tx slots | 18.01                     | 17.84 | 17.06  | 18.50               | 12.01                     | 11.84 | 11.06  | 12.50               |
| EDGE 3 Tx slots | 15.37                     | 16.19 | 15.48  | 16.50               | 11.11                     | 11.93 | 11.22  | 12.24               |
| EDGE 4 Tx slots | 15.32                     | 14.77 | 14.48  | 15.50               | 12.32                     | 11.77 | 11.48  | 12.50               |

| Band            |                    | WCDMA 8 |       |        | Tune-up Limit (dBm) | WCDMA 4 |        |        | Tune-up Limit (dBm) | WCDMA 5 |       |       | Tune-up Limit (dBm) |
|-----------------|--------------------|---------|-------|--------|---------------------|---------|--------|--------|---------------------|---------|-------|-------|---------------------|
| TX Channel      |                    | 9602    | 9606  | 9638   |                     | 1312    | 1412   | 1513   |                     | 4132    | 4182  | 4233  |                     |
| Rx Channel      |                    | 9662    | 9660  | 9638   |                     | 1537    | 1638   | 1738   |                     | 4357    | 4407  | 4458  |                     |
| Frequency (MHz) |                    | 1862.4  | 1860  | 1907.6 |                     | 1712.4  | 1732.6 | 1792.8 |                     | 836.4   | 836.4 | 846.6 |                     |
| 3GPP Rel 99     | AMR 12.2kps        | 16.68   | 16.70 | 16.30  | 17.00               | 16.83   | 17.11  | 16.64  | 17.50               | 22.79   | 22.86 | 22.41 | 23.00               |
| 3GPP Rel 99     | AMR 12.2kps        | 16.69   | 16.71 | 16.31  | 17.00               | 16.84   | 17.12  | 16.65  | 17.50               | 22.80   | 22.87 | 22.42 | 23.00               |
| 3GPP Rel 6      | HSDPA Subtest-1    | 15.62   | 15.60 | 15.15  | 16.50               | 15.81   | 16.15  | 15.65  | 17.00               | 22.44   | 22.46 | 22.14 | 22.50               |
| 3GPP Rel 6      | HSDPA Subtest-2    | 15.60   | 15.59 | 15.13  | 16.50               | 15.85   | 16.18  | 15.71  | 17.00               | 22.47   | 22.45 | 22.11 | 22.50               |
| 3GPP Rel 6      | HSDPA Subtest-3    | 15.04   | 15.01 | 14.73  | 16.00               | 15.33   | 15.67  | 15.21  | 16.50               | 21.94   | 21.96 | 21.63 | 22.00               |
| 3GPP Rel 6      | HSDPA Subtest-4    | 15.07   | 15.11 | 14.86  | 16.00               | 15.28   | 15.72  | 15.22  | 16.50               | 21.93   | 21.92 | 21.63 | 22.00               |
| 3GPP Rel 6      | DC-HSDPA Subtest-1 | 15.65   | 15.62 | 15.19  | 16.50               | 15.85   | 16.17  | 15.75  | 17.00               | 22.41   | 22.41 | 22.11 | 22.50               |
| 3GPP Rel 6      | DC-HSDPA Subtest-2 | 15.62   | 15.64 | 15.17  | 16.50               | 15.82   | 16.16  | 15.70  | 17.00               | 22.44   | 22.39 | 22.12 | 22.50               |
| 3GPP Rel 6      | DC-HSDPA Subtest-3 | 15.14   | 15.08 | 14.82  | 16.00               | 15.35   | 15.69  | 15.25  | 16.50               | 21.91   | 21.91 | 21.61 | 22.00               |
| 3GPP Rel 6      | DC-HSDPA Subtest-4 | 15.15   | 15.19 | 14.78  | 16.00               | 15.35   | 15.79  | 15.29  | 16.50               | 21.95   | 21.96 | 21.66 | 22.00               |
| 3GPP Rel 6      | HSUPA Subtest-1    | 15.61   | 15.57 | 15.19  | 16.50               | 15.87   | 16.16  | 15.67  | 17.00               | 22.44   | 22.47 | 22.12 | 22.50               |
| 3GPP Rel 6      | HSUPA Subtest-2    | 13.56   | 13.65 | 13.15  | 14.50               | 13.92   | 14.16  | 13.80  | 15.00               | 20.48   | 20.44 | 20.09 | 20.50               |
| 3GPP Rel 6      | HSUPA Subtest-3    | 14.97   | 14.98 | 14.16  | 15.50               | 14.85   | 15.16  | 14.79  | 16.00               | 21.44   | 21.47 | 21.16 | 21.50               |
| 3GPP Rel 6      | HSUPA Subtest-4    | 13.82   | 13.82 | 13.21  | 14.50               | 13.83   | 14.16  | 13.89  | 15.00               | 20.44   | 20.48 | 20.08 | 20.50               |
| 3GPP Rel 6      | HSUPA Subtest-5    | 15.60   | 15.50 | 15.11  | 16.50               | 15.90   | 16.20  | 15.70  | 17.00               | 22.50   | 22.50 | 22.10 | 22.50               |

| Band             |  | CDMA BC1 |       |         | Tune-up Limit (dBm) |
|------------------|--|----------|-------|---------|---------------------|
| TX Channel       |  | 25       | 600   | 1175    |                     |
| Frequency (MHz)  |  | 1851.25  | 1860  | 1906.75 |                     |
| RC1 S055         |  | 18.18    | 18.22 | 18.15   | 18.50               |
| RC3 S055         |  | 18.22    | 18.23 | 18.13   | 18.50               |
| RC3 S032 (F+SCH) |  | 18.11    | 18.16 | 18.13   | 18.50               |
| RC3 S032 (H+SCH) |  | 18.18    | 18.20 | 18.17   | 18.50               |
| RTAP 153.6kps    |  | 18.11    | 18.22 | 18.13   | 18.50               |
| RTAP 153.6kps    |  | 18.15    | 18.17 | 18.18   | 18.50               |

| Band 2 (190MHz Band) |            |         |           |         |                       |                          |                        |                     |          | Part 246 |  |  |  |
|----------------------|------------|---------|-----------|---------|-----------------------|--------------------------|------------------------|---------------------|----------|----------|--|--|--|
| BW (MHz)             | Modulation | RB Size | RB Offset | Channel | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |          |  |  |  |
| Frequency (MHz)      |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 20                   | QPSK       | 1       | 0         | 16.55   | 16.56                 | 16.36                    | 16.28                  | 17.5                | 0        |          |  |  |  |
| 20                   | QPSK       | 1       | 49        | 16.35   | 16.53                 | 16.30                    |                        |                     |          |          |  |  |  |
| 20                   | QPSK       | 1       | 99        | 16.40   | 16.27                 | 16.12                    |                        |                     |          |          |  |  |  |
| 20                   | QPSK       | 50      | 0         | 16.48   | 16.55                 | 16.48                    |                        |                     |          |          |  |  |  |
| 20                   | QPSK       | 50      | 24        | 16.54   | 16.46                 | 16.40                    | 16.40                  | 17.5                | 0        |          |  |  |  |
| 20                   | QPSK       | 50      | 50        | 16.54   | 16.47                 | 16.24                    |                        |                     |          |          |  |  |  |
| 20                   | QPSK       | 100     | 0         | 16.52   | 16.53                 | 16.40                    |                        |                     |          |          |  |  |  |
| 20                   | 16QAM      | 1       | 0         | 16.47   | 16.22                 | 16.43                    |                        |                     |          |          |  |  |  |
| 20                   | 16QAM      | 1       | 49        | 16.28   | 16.41                 | 16.17                    | 16.17                  | 17.5                | 0        |          |  |  |  |
| 20                   | 16QAM      | 1       | 99        | 16.25   | 16.18                 | 15.99                    |                        |                     |          |          |  |  |  |
| 20                   | 16QAM      | 50      | 0         | 16.00   | 16.06                 | 15.96                    | 15.96                  |                     |          |          |  |  |  |
| 20                   | 16QAM      | 50      | 24        | 16.17   | 16.04                 | 15.96                    |                        |                     |          |          |  |  |  |
| 20                   | 16QAM      | 50      | 50        | 16.03   | 16.01                 | 15.88                    | 15.88                  | 17.5                | 0        |          |  |  |  |
| 20                   | 16QAM      | 100     | 0         | 16.03   | 16.00                 | 15.83                    |                        |                     |          |          |  |  |  |
| 20                   | 64QAM      | 1       | 0         | 16.35   | 16.10                 | 16.37                    |                        |                     |          |          |  |  |  |
| 20                   | 64QAM      | 1       | 49        | 16.09   | 16.27                 | 15.93                    | 15.93                  |                     |          |          |  |  |  |
| 20                   | 64QAM      | 1       | 99        | 15.96   | 16.07                 | 15.91                    | 15.91                  | 17.5                | 0        |          |  |  |  |
| 20                   | 64QAM      | 50      | 0         | 15.98   | 16.04                 | 15.98                    |                        |                     |          |          |  |  |  |
| 20                   | 64QAM      | 50      | 24        | 16.11   | 16.01                 | 15.91                    |                        |                     |          |          |  |  |  |
| 20                   | 64QAM      | 50      | 50        | 16.09   | 15.97                 | 15.88                    |                        |                     |          |          |  |  |  |
| 20                   | 64QAM      | 100     | 0         | 16.11   | 16.02                 | 15.79                    | 15.79                  | 17.5                | 0        |          |  |  |  |
| Channel              |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 1897.5 1890 1910     |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| Frequency (MHz)      |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 15                   | QPSK       | 1       | 0         | 16.20   | 16.29                 | 16.13                    | 16.13                  | 17.5                | 0        |          |  |  |  |
| 15                   | QPSK       | 1       | 37        | 16.28   | 16.29                 | 16.16                    | 16.16                  |                     |          |          |  |  |  |
| 15                   | QPSK       | 1       | 74        | 16.09   | 16.22                 | 15.82                    |                        |                     |          |          |  |  |  |
| 15                   | QPSK       | 36      | 0         | 16.39   | 16.31                 | 16.15                    |                        |                     |          |          |  |  |  |
| 15                   | QPSK       | 36      | 20        | 16.40   | 16.38                 | 16.15                    |                        | 17.5                | 0        |          |  |  |  |
| 15                   | QPSK       | 36      | 39        | 16.34   | 16.30                 | 16.03                    |                        |                     |          |          |  |  |  |
| 15                   | QPSK       | 75      | 0         | 16.44   | 16.33                 | 16.08                    |                        |                     |          |          |  |  |  |
| 15                   | 16QAM      | 1       | 0         | 16.33   | 16.21                 | 16.28                    | 16.28                  |                     |          |          |  |  |  |
| 15                   | 16QAM      | 1       | 37        | 16.30   | 16.27                 | 15.97                    | 15.97                  | 17.5                | 0        |          |  |  |  |
| 15                   | 16QAM      | 1       | 74        | 15.99   | 16.14                 | 15.89                    |                        |                     |          |          |  |  |  |
| 15                   | 16QAM      | 36      | 0         | 16.09   | 15.95                 | 15.78                    |                        |                     |          |          |  |  |  |
| 15                   | 16QAM      | 36      | 20        | 16.15   | 16.02                 | 15.86                    |                        |                     |          |          |  |  |  |
| 15                   | 16QAM      | 36      | 39        | 16.10   | 16.02                 | 15.73                    | 15.73                  | 17.5                | 0        |          |  |  |  |
| 15                   | 16QAM      | 75      | 0         | 16.17   | 16.04                 | 15.75                    | 15.75                  |                     |          |          |  |  |  |
| 15                   | 64QAM      | 1       | 0         | 16.24   | 16.03                 | 15.91                    |                        |                     |          |          |  |  |  |
| 15                   | 64QAM      | 1       | 37        | 16.16   | 15.94                 | 15.98                    | 15.98                  |                     |          |          |  |  |  |
| 15                   | 64QAM      | 1       | 74        | 16.03   | 15.96                 | 15.83                    | 15.83                  | 17.5                | 0        |          |  |  |  |
| 15                   | 64QAM      | 36      | 0         | 16.03   | 15.95                 | 16.04                    | 16.04                  |                     |          |          |  |  |  |
| 15                   | 64QAM      | 36      | 20        | 15.98   | 15.96                 | 16.00                    | 16.00                  |                     |          |          |  |  |  |
| 15                   | 64QAM      | 36      | 39        | 15.96   | 16.01                 | 16.07                    | 16.07                  |                     |          |          |  |  |  |
| 15                   | 64QAM      | 75      | 0         | 16.04   | 16.11                 | 16.09                    | 16.09                  | 17.5                | 0        |          |  |  |  |
| Channel              |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 1895.0 1890 1910     |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| Frequency (MHz)      |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 10                   | QPSK       | 1       | 0         | 16.26   | 16.14                 | 16.13                    | 16.13                  | 17.5                | 0        |          |  |  |  |
| 10                   | QPSK       | 1       | 25        | 16.24   | 16.40                 | 16.17                    | 16.17                  |                     |          |          |  |  |  |
| 10                   | QPSK       | 1       | 49        | 15.96   | 15.95                 | 15.93                    | 15.93                  |                     |          |          |  |  |  |
| 10                   | QPSK       | 25      | 0         | 16.39   | 16.31                 | 16.10                    | 16.10                  |                     |          |          |  |  |  |
| 10                   | QPSK       | 25      | 12        | 16.51   | 16.45                 | 16.09                    | 16.09                  | 17.5                | 0        |          |  |  |  |
| 10                   | QPSK       | 25      | 25        | 16.30   | 16.29                 | 16.05                    | 16.05                  |                     |          |          |  |  |  |
| 10                   | QPSK       | 50      | 0         | 16.37   | 16.30                 | 16.07                    | 16.07                  |                     |          |          |  |  |  |
| 10                   | 16QAM      | 1       | 0         | 16.16   | 15.94                 | 16.29                    | 16.29                  |                     |          |          |  |  |  |
| 10                   | 16QAM      | 1       | 25        | 16.30   | 16.35                 | 16.11                    | 16.11                  | 17.5                | 0        |          |  |  |  |
| 10                   | 16QAM      | 1       | 49        | 15.95   | 15.98                 | 15.95                    | 15.95                  |                     |          |          |  |  |  |
| 10                   | 16QAM      | 25      | 0         | 16.11   | 16.05                 | 15.72                    | 15.72                  |                     |          |          |  |  |  |
| 10                   | 16QAM      | 25      | 12        | 16.14   | 16.06                 | 15.76                    | 15.76                  |                     |          |          |  |  |  |
| 10                   | 16QAM      | 25      | 25        | 15.96   | 15.92                 | 15.66                    | 15.66                  | 17.5                | 0        |          |  |  |  |
| 10                   | 16QAM      | 50      | 0         | 16.06   | 15.97                 | 15.75                    | 15.75                  |                     |          |          |  |  |  |
| 10                   | 64QAM      | 1       | 0         | 16.10   | 15.96                 | 16.22                    | 16.22                  |                     |          |          |  |  |  |
| 10                   | 64QAM      | 1       | 25        | 16.32   | 16.44                 | 15.99                    | 15.99                  |                     |          |          |  |  |  |
| 10                   | 64QAM      | 1       | 49        | 16.07   | 15.98                 | 15.96                    | 15.96                  | 17.5                | 0        |          |  |  |  |
| 10                   | 64QAM      | 25      | 0         | 16.16   | 15.98                 | 15.77                    | 15.77                  |                     |          |          |  |  |  |
| 10                   | 64QAM      | 25      | 12        | 16.22   | 16.09                 | 15.99                    | 15.99                  |                     |          |          |  |  |  |
| 10                   | 64QAM      | 25      | 25        | 16.29   | 16.01                 | 15.78                    | 15.78                  |                     |          |          |  |  |  |
| 10                   | 64QAM      | 50      | 0         | 15.89   | 16.02                 | 15.71                    | 15.71                  | 17.5                | 0        |          |  |  |  |
| Channel              |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 1892.5 1890 1910     |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| Frequency (MHz)      |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 5                    | QPSK       | 1       | 0         | 16.39   | 16.31                 | 16.14                    | 16.14                  | 17.5                | 0        |          |  |  |  |
| 5                    | QPSK       | 1       | 12        | 16.53   | 16.50                 | 16.28                    | 16.28                  |                     |          |          |  |  |  |
| 5                    | QPSK       | 1       | 24        | 16.37   | 16.29                 | 16.11                    | 16.11                  |                     |          |          |  |  |  |
| 5                    | QPSK       | 12      | 0         | 16.55   | 16.45                 | 16.25                    | 16.25                  |                     |          |          |  |  |  |
| 5                    | QPSK       | 12      | 7         | 16.53   | 16.47                 | 16.28                    | 16.28                  | 17.5                | 0        |          |  |  |  |
| 5                    | QPSK       | 12      | 13        | 16.51   | 16.41                 | 16.16                    | 16.16                  |                     |          |          |  |  |  |
| 5                    | QPSK       | 25      | 0         | 16.47   | 16.42                 | 16.21                    | 16.21                  |                     |          |          |  |  |  |
| 5                    | 16QAM      | 1       | 0         | 16.50   | 16.33                 | 16.21                    | 16.21                  |                     |          |          |  |  |  |
| 5                    | 16QAM      | 1       | 12        | 16.43   | 16.42                 | 16.22                    | 16.22                  | 17.5                | 0        |          |  |  |  |
| 5                    | 16QAM      | 1       | 24        | 16.34   | 16.27                 | 16.05                    | 16.05                  |                     |          |          |  |  |  |
| 5                    | 16QAM      | 12      | 0         | 16.29   | 16.22                 | 16.03                    | 16.03                  |                     |          |          |  |  |  |
| 5                    | 16QAM      | 12      | 7         | 16.27   | 16.24                 | 15.99                    | 15.99                  |                     |          |          |  |  |  |
| 5                    | 16QAM      | 12      | 13        | 16.21   | 16.12                 | 15.88                    | 15.88                  | 17.5                | 0        |          |  |  |  |
| 5                    | 16QAM      | 25      | 0         | 16.22   | 16.16                 | 15.92                    | 15.92                  |                     |          |          |  |  |  |
| 5                    | 64QAM      | 1       | 0         | 16.45   | 16.15                 | 16.12                    | 16.12                  |                     |          |          |  |  |  |
| 5                    | 64QAM      | 1       | 12        | 16.44   | 16.09                 | 15.99                    | 15.99                  |                     |          |          |  |  |  |
| 5                    | 64QAM      | 1       | 24        | 16.30   | 16.11                 | 16.02                    | 16.02                  | 17.5                | 0        |          |  |  |  |
| 5                    | 64QAM      | 12      | 0         | 16.32   | 16.20                 | 16.03                    | 16.03                  |                     |          |          |  |  |  |
| 5                    | 64QAM      | 12      | 7         | 16.24   | 16.24                 | 16.07                    | 16.07                  |                     |          |          |  |  |  |
| 5                    | 64QAM      | 12      | 13        | 16.23   | 16.22                 | 15.94                    | 15.94                  |                     |          |          |  |  |  |
| 5                    | 64QAM      | 25      | 0         | 16.20   | 16.10                 | 15.99                    | 15.99                  | 17.5                | 0        |          |  |  |  |
| Channel              |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 1891.5 1890 1910     |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| Frequency (MHz)      |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 3                    | QPSK       | 1       | 0         | 16.43   | 16.28                 | 16.10                    | 16.10                  | 17.5                | 0        |          |  |  |  |
| 3                    | QPSK       | 1       | 8         | 16.38   | 16.41                 | 16.10                    | 16.10                  |                     |          |          |  |  |  |
| 3                    | QPSK       | 1       | 14        | 16.26   | 16.17                 | 15.95                    | 15.95                  |                     |          |          |  |  |  |
| 3                    | QPSK       | 8       | 0         | 16.52   | 16.41                 | 16.20                    | 16.20                  |                     |          |          |  |  |  |
| 3                    | QPSK       | 8       | 4         | 16.48   | 16.43                 | 16.16                    | 16.16                  | 17.5                | 0        |          |  |  |  |
| 3                    | QPSK       | 8       | 7         | 16.45   | 16.32                 | 16.08                    | 16.08                  |                     |          |          |  |  |  |
| 3                    | QPSK       | 15      | 0         | 16.50   | 16.37                 | 16.15                    | 16.15                  |                     |          |          |  |  |  |
| 3                    | 16QAM      | 1       | 0         | 16.51   | 16.31                 | 16.12                    | 16.12                  |                     |          |          |  |  |  |
| 3                    | 16QAM      | 1       | 8         | 16.43   | 16.38                 | 16.18                    | 16.18                  | 17.5                | 0        |          |  |  |  |
| 3                    | 16QAM      | 1       | 14        | 16.34   | 16.18                 | 16.03                    | 16.03                  |                     |          |          |  |  |  |
| 3                    | 16QAM      | 8       | 0         | 16.27   | 16.15                 | 15.96                    | 15.96                  |                     |          |          |  |  |  |
| 3                    | 16QAM      | 8       | 4         | 16.22   | 16.16                 | 15.96                    | 15.96                  |                     |          |          |  |  |  |
| 3                    | 16QAM      | 8       | 7         | 16.17   | 16.06                 | 15.79                    | 15.79                  | 17.5                | 0        |          |  |  |  |
| 3                    | 16QAM      | 15      | 0         | 16.14   | 16.10                 | 15.91                    | 15.91                  |                     |          |          |  |  |  |
| 3                    | 64QAM      | 1       | 0         | 16.40   | 16.15                 | 16.09                    | 16.09                  |                     |          |          |  |  |  |
| 3                    | 64QAM      | 1       | 8         | 16.25   | 16.40                 | 16.11                    | 16.11                  |                     |          |          |  |  |  |
| 3                    | 64QAM      | 1       | 14        | 16.14   | 16.21                 | 16.03                    | 16.03                  | 17.5                | 0        |          |  |  |  |
| 3                    | 64QAM      | 8       | 0         | 16.29   | 16.16                 | 15.96                    | 15.96                  |                     |          |          |  |  |  |
| 3                    | 64QAM      | 8       | 4         | 16.27   | 16.15                 | 15.93                    | 15.93                  |                     |          |          |  |  |  |
| 3                    | 64QAM      | 8       | 7         | 16.17   | 16.09                 | 15.85                    | 15.85                  |                     |          |          |  |  |  |
| 3                    | 64QAM      | 15      | 0         | 16.21   | 16.03                 | 15.88                    | 15.88                  | 17.5                | 0        |          |  |  |  |
| Channel              |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 1890.7 1890 1910     |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| Frequency (MHz)      |            |         |           |         |                       |                          |                        |                     |          |          |  |  |  |
| 1.4                  | QPSK       | 1       | 0         | 16.35   | 16.23                 | 16.02                    | 16.02                  | 17.5                | 0        |          |  |  |  |
| 1.4                  | QPSK       | 1       | 3         | 16.41   | 16.30                 | 15.92                    | 15.92                  |                     |          |          |  |  |  |
| 1.4                  | QPSK       | 1       | 5         | 16.22   | 16.14                 | 15.91                    | 15.91                  |                     |          |          |  |  |  |
| 1.4                  | QPSK       | 3       | 0         | 16.39   | 16.25                 | 16.03                    | 16.03                  |                     |          |          |  |  |  |
| 1.4                  | QPSK       | 3       | 1         | 16.33   | 16.29                 | 16.00                    | 16.00                  | 17.5                | 0        |          |  |  |  |
| 1.4                  | QPSK       | 3       | 3         | 16.32   | 16.17                 | 15.91                    | 15.91                  |                     |          |          |  |  |  |
| 1.4                  | QPSK       | 6       | 0         | 16.41   | 16.31                 | 16.03                    | 16.03                  | 17.5                | 0        |          |  |  |  |
| 1.4                  | 16QAM      | 1       | 0         | 16.43   | 16.25                 | 16.07                    | 16.07                  |                     |          |          |  |  |  |
| 1.4                  | 16QAM      | 1       | 3         | 16.35   | 16.26                 | 16.00                    | 16.00                  | 17.5                | 0        |          |  |  |  |
| 1.4                  | 16QAM      | 1       | 5         | 16.36   | 16.07                 | 15.98                    | 15.98                  |                     |          |          |  |  |  |
| 1.4                  | 16QAM      | 3       | 0         | 16.15   | 16.00                 | 15.81                    | 15.81                  |                     |          |          |  |  |  |
| 1.4                  | 16QAM      | 3       | 1         | 16.19   | 16.03                 | 15.79                    | 15.79                  |                     |          |          |  |  |  |
| 1.4                  | 16QAM      | 3       | 3         | 16.33   | 15.97                 | 15.73                    | 15.73                  | 17.5                | 0        |          |  |  |  |
| 1.4                  | 16QAM      | 6       | 0         | 16.22   | 16.03                 | 15.78                    | 15.78                  |                     |          |          |  |  |  |
| 1.4                  | 64QAM      | 1       | 0         | 16.39   | 16.14                 | 16.00                    | 16.00                  |                     |          |          |  |  |  |
| 1.4                  | 64QAM      | 1       | 3         | 16.36   | 16.29                 | 16.07                    | 16.07                  |                     |          |          |  |  |  |
| 1.4                  | 64QAM      | 1       | 5         | 16.23   | 16.08                 | 15.99                    | 15.99                  | 17.5                | 0        |          |  |  |  |
| 1.4                  | 64QAM      | 3       | 0         | 16.27   | 16.05                 | 15.79                    | 15.79                  |                     |          |          |  |  |  |
| 1.4                  | 64QAM      | 3       | 1         | 16.20   | 16.01                 | 15.84                    | 15.84                  |                     |          |          |  |  |  |
| 1.4                  | 64QAM      | 3       | 3         | 16.03   | 15.91                 | 15.91                    | 15.91                  |                     |          |          |  |  |  |
| 1.4                  | 64QAM      | 6       | 0         | 16.08   | 15.89                 | 15.99                    | 15.99                  | 17.5                | 0        |          |  |  |  |

| Band 7 (2400MHz Band) |            |         |           |               |               |                      |                     |          |  |
|-----------------------|------------|---------|-----------|---------------|---------------|----------------------|---------------------|----------|--|
| BW [MHz]              | Modulation | RB Size | RB Offset | Power         |               | Power High Ch. [dBm] | Tune-up limit (dBm) | MPR (dB) |  |
|                       |            |         |           | Low Ch. [dBm] | Mid Ch. [dBm] |                      |                     |          |  |
| Channel               |            |         |           | 20850         | 21100         | 21350                |                     |          |  |
| Frequency (MHz)       |            |         |           | 2510          | 2535          | 2560                 |                     |          |  |
| 20                    | QPSK       | 1       | 0         | 16.61         | 16.83         | 16.88                |                     | 0        |  |
| 20                    | QPSK       | 1       | 49        | 16.66         | 16.71         | 16.60                |                     |          |  |
| 20                    | QPSK       | 1       | 99        | 16.68         | 16.76         | 16.61                |                     |          |  |
| 20                    | QPSK       | 50      | 0         | 16.79         | 16.82         | 16.74                |                     |          |  |
| 20                    | QPSK       | 50      | 24        | 16.78         | 16.80         | 16.74                |                     | 0        |  |
| 20                    | QPSK       | 50      | 50        | 16.75         | 16.80         | 16.68                |                     |          |  |
| 20                    | QPSK       | 100     | 0         | 16.64         | 16.78         | 16.65                |                     |          |  |
| 20                    | 16QAM      | 1       | 0         | 16.57         | 16.65         | 16.51                |                     |          |  |
| 20                    | 16QAM      | 1       | 49        | 16.56         | 16.56         | 16.50                |                     | 0        |  |
| 20                    | 16QAM      | 1       | 99        | 16.63         | 16.71         | 16.54                |                     |          |  |
| 20                    | 16QAM      | 50      | 0         | 16.39         | 16.47         | 16.35                |                     |          |  |
| 20                    | 16QAM      | 50      | 24        | 16.37         | 16.49         | 16.35                |                     |          |  |
| 20                    | 16QAM      | 50      | 50        | 16.41         | 16.46         | 16.32                |                     | 0        |  |
| 20                    | 16QAM      | 100     | 0         | 16.26         | 16.39         | 16.23                |                     |          |  |
| 20                    | 84QAM      | 1       | 0         | 16.46         | 16.63         | 16.46                |                     |          |  |
| 20                    | 84QAM      | 1       | 49        | 16.59         | 16.63         | 16.44                |                     |          |  |
| 20                    | 84QAM      | 1       | 99        | 16.56         | 16.56         | 16.45                |                     |          |  |
| 20                    | 84QAM      | 50      | 0         | 16.39         | 16.45         | 16.34                |                     |          |  |
| 20                    | 84QAM      | 50      | 24        | 16.37         | 16.48         | 16.34                |                     | 0        |  |
| 20                    | 84QAM      | 50      | 50        | 16.36         | 16.42         | 16.30                |                     |          |  |
| 20                    | 84QAM      | 100     | 0         | 16.29         | 16.41         | 16.24                |                     |          |  |
| Channel               |            |         |           | 20925         | 21100         | 21375                |                     |          |  |
| Frequency (MHz)       |            |         |           | 2507.5        | 2535          | 2562.5               | Tune-up limit (dBm) | MPR (dB) |  |
| 15                    | QPSK       | 1       | 0         | 16.30         | 16.22         | 16.14                |                     | 0        |  |
| 15                    | QPSK       | 1       | 37        | 16.31         | 16.22         | 16.14                |                     |          |  |
| 15                    | QPSK       | 1       | 74        | 16.36         | 16.26         | 16.21                |                     |          |  |
| 15                    | QPSK       | 36      | 0         | 16.42         | 16.41         | 16.34                |                     |          |  |
| 15                    | QPSK       | 36      | 20        | 16.45         | 16.36         | 16.36                |                     | 0        |  |
| 15                    | QPSK       | 36      | 39        | 16.43         | 16.34         | 16.36                |                     |          |  |
| 15                    | QPSK       | 75      | 0         | 16.33         | 16.26         | 16.27                |                     |          |  |
| 15                    | 16QAM      | 1       | 0         | 16.64         | 16.55         | 16.50                |                     |          |  |
| 15                    | 16QAM      | 1       | 37        | 16.65         | 16.59         | 16.53                |                     | 0        |  |
| 15                    | 16QAM      | 1       | 74        | 16.68         | 16.60         | 16.55                |                     |          |  |
| 15                    | 16QAM      | 36      | 0         | 16.46         | 16.41         | 16.32                |                     |          |  |
| 15                    | 16QAM      | 36      | 20        | 16.45         | 16.39         | 16.36                |                     |          |  |
| 15                    | 16QAM      | 36      | 39        | 16.42         | 16.37         | 16.36                |                     | 0        |  |
| 15                    | 16QAM      | 75      | 0         | 16.35         | 16.28         | 16.29                |                     |          |  |
| 15                    | 84QAM      | 1       | 0         | 16.63         | 16.43         | 16.46                |                     |          |  |
| 15                    | 84QAM      | 1       | 37        | 16.63         | 16.57         | 16.41                |                     |          |  |
| 15                    | 84QAM      | 1       | 74        | 16.61         | 16.51         | 16.43                |                     | 0        |  |
| 15                    | 84QAM      | 36      | 0         | 16.49         | 16.39         | 16.33                |                     |          |  |
| 15                    | 84QAM      | 36      | 20        | 16.42         | 16.36         | 16.37                |                     |          |  |
| 15                    | 84QAM      | 36      | 39        | 16.44         | 16.35         | 16.36                |                     |          |  |
| 15                    | 84QAM      | 75      | 0         | 16.36         | 16.30         | 16.28                |                     |          |  |
| Channel               |            |         |           | 20950         | 21100         | 21400                |                     |          |  |
| Frequency (MHz)       |            |         |           | 2505          | 2535          | 2565                 | Tune-up limit (dBm) | MPR (dB) |  |
| 10                    | QPSK       | 1       | 0         | 16.34         | 16.27         | 16.13                |                     | 0        |  |
| 10                    | QPSK       | 1       | 25        | 16.35         | 16.29         | 16.17                |                     |          |  |
| 10                    | QPSK       | 1       | 49        | 16.34         | 16.31         | 16.22                |                     |          |  |
| 10                    | QPSK       | 25      | 0         | 16.44         | 16.39         | 16.30                |                     |          |  |
| 10                    | QPSK       | 25      | 12        | 16.47         | 16.35         | 16.33                |                     | 0        |  |
| 10                    | QPSK       | 25      | 25        | 16.40         | 16.35         | 16.32                |                     |          |  |
| 10                    | QPSK       | 50      | 0         | 16.32         | 16.24         | 16.23                |                     |          |  |
| 10                    | 16QAM      | 1       | 0         | 16.66         | 16.61         | 16.51                |                     |          |  |
| 10                    | 16QAM      | 1       | 25        | 16.69         | 16.63         | 16.48                |                     | 0        |  |
| 10                    | 16QAM      | 1       | 49        | 16.69         | 16.67         | 16.54                |                     |          |  |
| 10                    | 16QAM      | 25      | 0         | 16.46         | 16.41         | 16.27                |                     |          |  |
| 10                    | 16QAM      | 25      | 12        | 16.47         | 16.35         | 16.30                |                     |          |  |
| 10                    | 16QAM      | 25      | 25        | 16.38         | 16.37         | 16.27                |                     |          |  |
| 10                    | 16QAM      | 50      | 0         | 16.29         | 16.27         | 16.21                |                     |          |  |
| 10                    | 84QAM      | 1       | 0         | 16.71         | 16.63         | 16.55                |                     | 0        |  |
| 10                    | 84QAM      | 1       | 25        | 16.71         | 16.71         | 16.50                |                     |          |  |
| 10                    | 84QAM      | 1       | 49        | 16.74         | 16.67         | 16.58                |                     |          |  |
| 10                    | 84QAM      | 25      | 0         | 16.44         | 16.39         | 16.29                |                     |          |  |
| 10                    | 84QAM      | 25      | 12        | 16.51         | 16.34         | 16.30                |                     | 0        |  |
| 10                    | 84QAM      | 25      | 25        | 16.43         | 16.37         | 16.27                |                     |          |  |
| 10                    | 84QAM      | 50      | 0         | 16.32         | 16.25         | 16.16                |                     |          |  |
| Channel               |            |         |           | 20775         | 21100         | 21425                |                     |          |  |
| Frequency (MHz)       |            |         |           | 2502.5        | 2535          | 2567.5               | Tune-up limit (dBm) | MPR (dB) |  |
| 5                     | QPSK       | 1       | 0         | 16.33         | 16.32         | 16.16                |                     | 0        |  |
| 5                     | QPSK       | 1       | 12        | 16.37         | 16.32         | 16.22                |                     |          |  |
| 5                     | QPSK       | 1       | 24        | 16.35         | 16.28         | 16.22                |                     |          |  |
| 5                     | QPSK       | 12      | 0         | 16.43         | 16.34         | 16.25                |                     |          |  |
| 5                     | QPSK       | 12      | 7         | 16.48         | 16.35         | 16.31                |                     | 0        |  |
| 5                     | QPSK       | 12      | 13        | 16.41         | 16.30         | 16.25                |                     |          |  |
| 5                     | QPSK       | 25      | 0         | 16.40         | 16.33         | 16.26                |                     |          |  |
| 5                     | 16QAM      | 1       | 0         | 16.67         | 16.62         | 16.49                |                     |          |  |
| 5                     | 16QAM      | 1       | 12        | 16.61         | 16.54         | 16.46                |                     | 0        |  |
| 5                     | 16QAM      | 1       | 24        | 16.67         | 16.54         | 16.53                |                     |          |  |
| 5                     | 16QAM      | 12      | 0         | 16.42         | 16.36         | 16.25                |                     |          |  |
| 5                     | 16QAM      | 12      | 7         | 16.49         | 16.39         | 16.33                |                     |          |  |
| 5                     | 16QAM      | 12      | 13        | 16.41         | 16.34         | 16.29                |                     | 0        |  |
| 5                     | 16QAM      | 25      | 0         | 16.42         | 16.31         | 16.27                |                     |          |  |
| 5                     | 84QAM      | 1       | 0         | 16.54         | 16.55         | 16.38                |                     |          |  |
| 5                     | 84QAM      | 1       | 12        | 16.58         | 16.51         | 16.42                |                     |          |  |
| 5                     | 84QAM      | 1       | 24        | 16.62         | 16.47         | 16.43                |                     | 0        |  |
| 5                     | 84QAM      | 12      | 0         | 16.40         | 16.34         | 16.21                |                     |          |  |
| 5                     | 84QAM      | 12      | 7         | 16.48         | 16.36         | 16.26                |                     |          |  |
| 5                     | 84QAM      | 12      | 13        | 16.41         | 16.31         | 16.22                |                     |          |  |
| 5                     | 84QAM      | 25      | 0         | 16.44         | 16.28         | 16.26                |                     |          |  |

| Band 26 for FCC<br>(only on channel required) |            |         |           |                                                                                                  |                                                                                       |                                  |                        |             |  |                        |             |  |
|-----------------------------------------------|------------|---------|-----------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------|------------------------|-------------|--|------------------------|-------------|--|
| BW [MHz]                                      | Modulation | RB Size | RB Offset | Power Low<br>Ch. (dBm)<br>26760                                                                  | Power Middle<br>Ch. (dBm)<br>26865                                                    | Power High<br>Ch. (dBm)<br>26965 | Tune-up limit<br>(dBm) | MPR<br>(dB) |  |                        |             |  |
| Channel                                       |            |         |           | 821.5                                                                                            | 831.5                                                                                 | 841.5                            |                        |             |  |                        |             |  |
| 15                                            | QPSK       | 1       | 0         | 22.40                                                                                            | 22.29                                                                                 | 22.10                            | 23                     | 0           |  |                        |             |  |
| 15                                            | QPSK       | 1       | 37        | 22.29                                                                                            | 22.21                                                                                 | 21.96                            |                        |             |  |                        |             |  |
| 15                                            | QPSK       | 1       | 74        | 22.22                                                                                            | 22.07                                                                                 | 22.03                            |                        |             |  |                        |             |  |
| 15                                            | QPSK       | 36      | 0         | 21.60                                                                                            | 21.54                                                                                 | 21.38                            |                        |             |  |                        |             |  |
| 15                                            | QPSK       | 36      | 20        | 21.55                                                                                            | 21.59                                                                                 | 21.40                            | 23                     | 0           |  |                        |             |  |
| 15                                            | QPSK       | 36      | 39        | 21.53                                                                                            | 21.46                                                                                 | 21.30                            |                        |             |  |                        |             |  |
| 15                                            | QPSK       | 75      | 0         | 21.64                                                                                            | 21.51                                                                                 | 21.33                            |                        |             |  |                        |             |  |
| 15                                            | 16QAM      | 1       | 0         | 22.01                                                                                            | 21.91                                                                                 | 21.73                            |                        |             |  |                        |             |  |
| 15                                            | 16QAM      | 1       | 37        | 21.90                                                                                            | 21.86                                                                                 | 21.61                            | 23                     | 0           |  |                        |             |  |
| 15                                            | 16QAM      | 1       | 74        | 21.82                                                                                            | 21.68                                                                                 | 21.55                            |                        |             |  |                        |             |  |
| 15                                            | 16QAM      | 36      | 0         | 20.81                                                                                            | 20.71                                                                                 | 20.59                            |                        |             |  |                        |             |  |
| 15                                            | 16QAM      | 36      | 20        | 20.92                                                                                            | 20.78                                                                                 | 20.59                            |                        |             |  |                        |             |  |
| 15                                            | 16QAM      | 36      | 39        | 20.83                                                                                            | 20.67                                                                                 | 20.59                            | 22                     | 1           |  |                        |             |  |
| 15                                            | 16QAM      | 75      | 0         | 20.88                                                                                            | 20.72                                                                                 | 20.56                            |                        |             |  |                        |             |  |
| 15                                            | 84QAM      | 1       | 0         | 21.42                                                                                            | 21.32                                                                                 | 21.09                            |                        |             |  |                        |             |  |
| 15                                            | 84QAM      | 1       | 37        | 21.25                                                                                            | 21.26                                                                                 | 21.04                            |                        |             |  |                        |             |  |
| 15                                            | 84QAM      | 1       | 74        | 21.23                                                                                            | 21.03                                                                                 | 20.93                            | 22                     | 1           |  |                        |             |  |
| 15                                            | 84QAM      | 36      | 0         | 20.34                                                                                            | 20.24                                                                                 | 20.10                            |                        |             |  |                        |             |  |
| 15                                            | 84QAM      | 36      | 20        | 20.41                                                                                            | 20.28                                                                                 | 20.09                            |                        |             |  |                        |             |  |
| 15                                            | 84QAM      | 36      | 39        | 20.33                                                                                            | 20.15                                                                                 | 19.95                            |                        |             |  |                        |             |  |
| 15                                            | 84QAM      | 75      | 0         | 20.38                                                                                            | 20.21                                                                                 | 20.06                            | 21                     | 2           |  |                        |             |  |
| Channel                                       |            |         |           | 26740 <th>26865<th>26965</th></th>                                                               | 26865 <th>26965</th>                                                                  | 26965                            |                        |             |  |                        |             |  |
| Frequency (MHz)                               |            |         |           | 819                                                                                              | 831.5                                                                                 | 844                              |                        |             |  | Tune-up limit<br>(dBm) | MPR<br>(dB) |  |
| 10                                            | QPSK       | 1       | 0         | 22.30                                                                                            | 22.32                                                                                 | 22.10                            |                        |             |  | 23                     | 0           |  |
| 10                                            | QPSK       | 1       | 25        | 22.39                                                                                            | 22.27                                                                                 | 22.13                            |                        |             |  |                        |             |  |
| 10                                            | QPSK       | 1       | 49        | 22.38                                                                                            | 22.15                                                                                 | 22.11                            |                        |             |  |                        |             |  |
| 10                                            | QPSK       | 25      | 0         | 21.74                                                                                            | 21.56                                                                                 | 21.32                            |                        |             |  |                        |             |  |
| 10                                            | QPSK       | 25      | 12        | 21.62                                                                                            | 21.67                                                                                 | 21.40                            | 23                     | 0           |  |                        |             |  |
| 10                                            | QPSK       | 25      | 25        | 21.73                                                                                            | 21.55                                                                                 | 21.32                            |                        |             |  |                        |             |  |
| 10                                            | QPSK       | 50      | 0         | 21.74                                                                                            | 21.65                                                                                 | 21.42                            |                        |             |  |                        |             |  |
| 10                                            | 16QAM      | 1       | 0         | 22.15                                                                                            | 22.00                                                                                 | 21.73                            |                        |             |  |                        |             |  |
| 10                                            | 16QAM      | 1       | 25        | 22.05                                                                                            | 21.95                                                                                 | 21.71                            | 23                     | 0           |  |                        |             |  |
| 10                                            | 16QAM      | 1       | 49        | 21.99                                                                                            | 21.83                                                                                 | 21.73                            |                        |             |  |                        |             |  |
| 10                                            | 16QAM      | 25      | 0         | 20.86                                                                                            | 20.79                                                                                 | 20.59                            |                        |             |  |                        |             |  |
| 10                                            | 16QAM      | 25      | 12        | 21.07                                                                                            | 20.97                                                                                 | 20.63                            |                        |             |  |                        |             |  |
| 10                                            | 16QAM      | 25      | 25        | 20.93                                                                                            | 20.71                                                                                 | 20.50                            | 22                     | 1           |  |                        |             |  |
| 10                                            | 16QAM      | 50      | 0         | 20.97                                                                                            | 20.74                                                                                 | 20.58                            |                        |             |  |                        |             |  |
| 10                                            | 84QAM      | 1       | 0         | 21.69                                                                                            | 21.50                                                                                 | 21.22                            |                        |             |  |                        |             |  |
| 10                                            | 84QAM      | 1       | 25        | 21.54                                                                                            | 21.45                                                                                 | 21.23                            |                        |             |  |                        |             |  |
| 10                                            | 84QAM      | 1       | 49        | 21.51                                                                                            | 21.34                                                                                 | 21.24                            | 22                     | 1           |  |                        |             |  |
| 10                                            | 84QAM      | 25      | 0         | 20.46                                                                                            | 20.25                                                                                 | 20.13                            |                        |             |  |                        |             |  |
| 10                                            | 84QAM      | 25      | 12        | 20.58                                                                                            | 20.39                                                                                 | 20.21                            |                        |             |  |                        |             |  |
| 10                                            | 84QAM      | 25      | 25        | 20.46                                                                                            | 20.25                                                                                 | 20.15                            |                        |             |  |                        |             |  |
| 10                                            | 84QAM      | 50      | 0         | 20.44                                                                                            | 20.26                                                                                 | 20.04                            | 21                     | 2           |  |                        |             |  |
| Channel                                       |            |         |           | 26715 <th>26865<th>27015</th></th>                                                               | 26865 <th>27015</th>                                                                  | 27015                            |                        |             |  |                        |             |  |
| Frequency (MHz)                               |            |         |           | 816.5 <th>831.5<th>846.5</th><th>Tune-up limit<br/>(dBm)</th><th>MPR<br/>(dB)</th><th></th></th> | 831.5 <th>846.5</th> <th>Tune-up limit<br/>(dBm)</th> <th>MPR<br/>(dB)</th> <th></th> | 846.5                            |                        |             |  | Tune-up limit<br>(dBm) | MPR<br>(dB) |  |
| 5                                             | QPSK       | 1       | 0         | 22.16                                                                                            | 21.98                                                                                 | 21.70                            |                        |             |  | 23                     | 0           |  |
| 5                                             | QPSK       | 1       | 12        | 22.19                                                                                            | 22.02                                                                                 | 21.69                            |                        |             |  |                        |             |  |
| 5                                             | QPSK       | 1       | 24        | 22.13                                                                                            | 21.95                                                                                 | 21.71                            |                        |             |  |                        |             |  |
| 5                                             | QPSK       | 12      | 0         | 21.59                                                                                            | 21.37                                                                                 | 21.14                            |                        |             |  |                        |             |  |
| 5                                             | QPSK       | 12      | 7         | 21.62                                                                                            | 21.40                                                                                 | 21.16                            | 23                     | 0           |  |                        |             |  |
| 5                                             | QPSK       | 12      | 13        | 21.57                                                                                            | 21.32                                                                                 | 21.14                            |                        |             |  |                        |             |  |
| 5                                             | QPSK       | 25      | 0         | 21.57                                                                                            | 21.34                                                                                 | 21.17                            |                        |             |  |                        |             |  |
| 5                                             | 16QAM      | 1       | 0         | 21.79                                                                                            | 21.67                                                                                 | 21.44                            |                        |             |  |                        |             |  |
| 5                                             | 16QAM      | 1       | 12        | 21.84                                                                                            | 21.68                                                                                 | 21.40                            | 23                     | 0           |  |                        |             |  |
| 5                                             | 16QAM      | 1       | 24        | 21.75                                                                                            | 21.55                                                                                 | 21.43                            |                        |             |  |                        |             |  |
| 5                                             | 16QAM      | 12      | 0         | 20.81                                                                                            | 20.57                                                                                 | 20.59                            |                        |             |  |                        |             |  |
| 5                                             | 16QAM      | 12      | 7         | 20.83                                                                                            | 20.60                                                                                 | 20.57                            |                        |             |  |                        |             |  |
| 5                                             | 16QAM      | 12      | 13        | 20.79                                                                                            | 20.57                                                                                 | 20.59                            | 22                     | 1           |  |                        |             |  |
| 5                                             | 16QAM      | 25      | 0         | 20.85                                                                                            | 20.58                                                                                 | 20.58                            |                        |             |  |                        |             |  |
| 5                                             | 84QAM      | 1       | 0         | 21.19                                                                                            | 21.06                                                                                 | 21.05                            |                        |             |  |                        |             |  |
| 5                                             | 84QAM      | 1       | 12        | 21.31                                                                                            | 21.17                                                                                 | 21.09                            |                        |             |  |                        |             |  |
| 5                                             | 84QAM      | 1       | 24        | 21.48                                                                                            | 21.31                                                                                 | 21.30                            | 22                     | 1           |  |                        |             |  |
| 5                                             | 84QAM      | 12      | 0         | 20.60                                                                                            | 20.36                                                                                 | 20.16                            |                        |             |  |                        |             |  |
| 5                                             | 84QAM      | 12      | 7         | 20.62                                                                                            | 20.37                                                                                 | 20.27                            |                        |             |  |                        |             |  |
| 5                                             | 84QAM      | 12      | 13        | 20.56                                                                                            | 20.36                                                                                 | 20.26                            |                        |             |  |                        |             |  |
| 5                                             | 84QAM      | 25      | 0         | 20.57                                                                                            | 20.36                                                                                 | 20.21                            | 21                     | 2           |  |                        |             |  |
| Channel                                       |            |         |           | 26705 <th>26865<th>27025</th></th>                                                               | 26865 <th>27025</th>                                                                  | 27025                            |                        |             |  |                        |             |  |
| Frequency (MHz)                               |            |         |           | 816.5 <th>831.5<th>847.5</th><th>Tune-up limit<br/>(dBm)</th><th>MPR<br/>(dB)</th><th></th></th> | 831.5 <th>847.5</th> <th>Tune-up limit<br/>(dBm)</th> <th>MPR<br/>(dB)</th> <th></th> | 847.5                            |                        |             |  | Tune-up limit<br>(dBm) | MPR<br>(dB) |  |
| 3                                             | QPSK       | 1       | 0         | 22.19                                                                                            | 22.02                                                                                 | 21.90                            |                        |             |  | 23                     | 0           |  |
| 3                                             | QPSK       | 1       | 8         | 22.16                                                                                            | 22.08                                                                                 | 21.79                            |                        |             |  |                        |             |  |
| 3                                             | QPSK       | 1       | 14        | 22.16                                                                                            | 21.97                                                                                 | 21.82                            |                        |             |  |                        |             |  |
| 3                                             | QPSK       | 8       | 0         | 21.60                                                                                            | 21.36                                                                                 | 21.38                            |                        |             |  |                        |             |  |
| 3                                             | QPSK       | 8       | 4         | 21.66                                                                                            | 21.44                                                                                 | 21.23                            | 23                     | 0           |  |                        |             |  |
| 3                                             | QPSK       | 8       | 7         | 21.62                                                                                            | 21.37                                                                                 | 21.36                            |                        |             |  |                        |             |  |
| 3                                             | QPSK       | 15      | 0         | 21.62                                                                                            | 21.36                                                                                 | 21.37                            |                        |             |  |                        |             |  |
| 3                                             | 16QAM      | 1       | 0         | 21.83                                                                                            | 21.63                                                                                 | 21.64                            |                        |             |  |                        |             |  |
| 3                                             | 16QAM      | 1       | 8         | 21.90                                                                                            | 21.72                                                                                 | 21.78                            | 23                     | 0           |  |                        |             |  |
| 3                                             | 16QAM      | 1       | 14        | 21.81                                                                                            | 21.62                                                                                 | 21.63                            |                        |             |  |                        |             |  |
| 3                                             | 16QAM      | 8       | 0         | 20.86                                                                                            | 20.64                                                                                 | 20.66                            |                        |             |  |                        |             |  |
| 3                                             | 16QAM      | 8       | 4         | 20.90                                                                                            | 20.69                                                                                 | 20.71                            |                        |             |  |                        |             |  |
| 3                                             | 16QAM      | 8       | 7         | 20.88                                                                                            | 20.63                                                                                 | 20.66                            | 22                     | 1           |  |                        |             |  |
| 3                                             | 16QAM      | 15      | 0         | 20.85                                                                                            | 20.60                                                                                 | 20.65                            |                        |             |  |                        |             |  |
| 3                                             | 84QAM      | 1       | 0         | 21.26                                                                                            | 21.04                                                                                 | 21.16                            |                        |             |  |                        |             |  |
| 3                                             | 84QAM      | 1       | 7         | 21.53                                                                                            | 21.16                                                                                 | 21.07                            |                        |             |  |                        |             |  |
| 3                                             | 84QAM      | 1       | 14        | 21.24                                                                                            | 20.99                                                                                 | 21.02                            | 22                     | 1           |  |                        |             |  |
| 3                                             | 84QAM      | 8       | 0         | 20.64                                                                                            | 20.39                                                                                 | 20.41                            |                        |             |  |                        |             |  |
| 3                                             | 84QAM      | 8       | 4         | 20.64                                                                                            | 20.44                                                                                 | 20.45                            |                        |             |  |                        |             |  |
| 3                                             | 84QAM      | 8       | 7         | 20.60                                                                                            | 20.37                                                                                 | 20.39                            |                        |             |  |                        |             |  |
| 3                                             | 84QAM      | 15      | 0         | 20.63                                                                                            | 20.36                                                                                 | 20.37                            | 21                     | 2           |  |                        |             |  |
| Channel                                       |            |         |           | 26700 <th>26865<th>27030</th></th>                                                               | 26865 <th>27030</th>                                                                  | 27030                            |                        |             |  |                        |             |  |
| Frequency (MHz)                               |            |         |           | 816.3 <th>831.5<th>846.3</th><th>Tune-up limit<br/>(dBm)</th><th>MPR<br/>(dB)</th><th></th></th> | 831.5 <th>846.3</th> <th>Tune-up limit<br/>(dBm)</th> <th>MPR<br/>(dB)</th> <th></th> | 846.3                            |                        |             |  | Tune-up limit<br>(dBm) | MPR<br>(dB) |  |
| 1.4                                           | QPSK       | 1       | 0         | 22.18                                                                                            | 21.94                                                                                 | 21.72                            |                        |             |  | 23                     | 0           |  |
| 1.4                                           | QPSK       | 1       | 3         | 22.00                                                                                            | 22.02                                                                                 | 21.83                            |                        |             |  |                        |             |  |
| 1.4                                           | QPSK       | 1       | 5         | 22.15                                                                                            | 21.95                                                                                 | 21.85                            |                        |             |  |                        |             |  |
| 1.4                                           | QPSK       | 3       | 0         | 22.16                                                                                            | 21.91                                                                                 | 21.81                            |                        |             |  |                        |             |  |
| 1.4                                           | QPSK       | 3       | 1         | 21.81                                                                                            | 22.03                                                                                 | 21.86                            | 23                     | 0           |  |                        |             |  |
| 1.4                                           | QPSK       | 3       | 3         | 22.20                                                                                            | 21.97                                                                                 | 21.87                            |                        |             |  |                        |             |  |
| 1.4                                           | QPSK       | 6       | 0         | 21.56                                                                                            | 21.38                                                                                 | 21.40                            |                        |             |  |                        |             |  |
| 1.4                                           | 16QAM      | 1       | 0         | 21.75                                                                                            | 21.58                                                                                 | 21.59                            |                        |             |  |                        |             |  |
| 1.4                                           | 16QAM      | 1       | 3         | 21.82                                                                                            | 21.65                                                                                 | 21.66                            | 23                     | 0           |  |                        |             |  |
| 1.4                                           | 16QAM      | 1       | 5         | 21.74                                                                                            | 21.59                                                                                 | 21.62                            |                        |             |  |                        |             |  |
| 1.4                                           | 16QAM      | 3       | 0         | 21.60                                                                                            | 21.39                                                                                 | 21.43                            |                        |             |  |                        |             |  |
| 1.4                                           | 16QAM      | 3       | 1         | 21.63                                                                                            | 21.40                                                                                 | 21.47                            |                        |             |  |                        |             |  |
| 1.4                                           | 16QAM      | 3       | 3         | 21.67                                                                                            | 21.37                                                                                 | 21.49                            | 23                     | 0           |  |                        |             |  |
| 1.4                                           | 16QAM      | 6       | 0         | 21.55                                                                                            | 20.93                                                                                 | 20.97                            |                        |             |  |                        |             |  |
| 1.4                                           | 84QAM      | 1       | 0         | 21.53                                                                                            | 21.32                                                                                 | 21.39                            |                        |             |  |                        |             |  |
| 1.4                                           | 84QAM      | 1       | 3         | 21.58                                                                                            | 21.33                                                                                 | 21.37                            |                        |             |  |                        |             |  |
| 1.4                                           | 84QAM      | 1       | 5         | 21.51                                                                                            | 21.31                                                                                 | 21.36                            | 22                     | 1           |  |                        |             |  |
| 1.4                                           | 84QAM      | 3       | 0         | 21.36                                                                                            | 21.20                                                                                 | 21.23                            |                        |             |  |                        |             |  |
| 1.4                                           | 84QAM      | 3       | 1         | 21.47                                                                                            | 21.14                                                                                 | 21.24                            |                        |             |  |                        |             |  |
| 1.4                                           | 84QAM      | 3       | 3         | 21.47                                                                                            | 21.18                                                                                 | 21.30                            |                        |             |  |                        |             |  |
| 1.4                                           | 84QAM      | 6       | 0         | 20.55                                                                                            | 20.35                                                                                 | 20.39                            | 21                     | 2           |  |                        |             |  |

| Band 38(only on channel required) |            |         |           |                                                  |                          |                        |                     |          |  |  |  |
|-----------------------------------|------------|---------|-----------|--------------------------------------------------|--------------------------|------------------------|---------------------|----------|--|--|--|
| BW [MHz]                          | Modulation | RB Size | RB Offset | Power Low Ch. / Freq.                            | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dbm) | MPR (db) |  |  |  |
| Channel                           |            |         |           | 37850                                            | 38000                    | 38150                  |                     |          |  |  |  |
| Frequency (MHz)                   |            |         |           |                                                  |                          |                        |                     |          |  |  |  |
| 20                                | QPSK       | 1       | 0         | 18.48                                            | 18.55                    | 18.70                  | 19                  | 0        |  |  |  |
| 20                                | QPSK       | 1       | 49        | 18.56                                            | 18.66                    | 18.81                  |                     |          |  |  |  |
| 20                                | QPSK       | 1       | 99        | 18.60                                            | 18.70                    | 18.85                  |                     |          |  |  |  |
| 20                                | QPSK       | 50      | 0         | 18.41                                            | 18.46                    | 18.57                  |                     |          |  |  |  |
| 20                                | QPSK       | 50      | 24        | 18.65                                            | 18.70                    | 18.76                  | 19                  | 0        |  |  |  |
| 20                                | QPSK       | 50      | 50        | 18.56                                            | 18.65                    | 18.76                  |                     |          |  |  |  |
| 20                                | QPSK       | 100     | 0         | 18.52                                            | 18.59                    | 18.66                  |                     |          |  |  |  |
| 20                                | 16QAM      | 1       | 0         | 18.61                                            | 18.67                    | 18.77                  |                     |          |  |  |  |
| 20                                | 16QAM      | 1       | 49        | 18.66                                            | 18.77                    | 18.87                  | 19                  | 0        |  |  |  |
| 20                                | 16QAM      | 1       | 99        | 18.76                                            | 18.88                    | 18.97                  |                     |          |  |  |  |
| 20                                | 16QAM      | 50      | 0         | 18.44                                            | 18.52                    | 18.64                  |                     |          |  |  |  |
| 20                                | 16QAM      | 50      | 24        | 18.67                                            | 18.75                    | 18.79                  |                     |          |  |  |  |
| 20                                | 16QAM      | 50      | 50        | 18.60                                            | 18.69                    | 18.80                  | 19                  | 0        |  |  |  |
| 20                                | 16QAM      | 100     | 0         | 18.54                                            | 18.64                    | 18.70                  |                     |          |  |  |  |
| 20                                | 64QAM      | 1       | 0         | 18.48                                            | 18.48                    | 18.64                  |                     |          |  |  |  |
| 20                                | 64QAM      | 1       | 49        | 18.52                                            | 18.56                    | 18.69                  | 19                  | 0        |  |  |  |
| 20                                | 64QAM      | 1       | 99        | 18.58                                            | 18.68                    | 18.79                  |                     |          |  |  |  |
| 20                                | 64QAM      | 50      | 0         | 18.38                                            | 18.46                    | 18.57                  |                     |          |  |  |  |
| 20                                | 64QAM      | 50      | 24        | 18.60                                            | 18.67                    | 18.74                  |                     |          |  |  |  |
| 20                                | 64QAM      | 50      | 50        | 18.53                                            | 18.63                    | 18.74                  | 19                  | 0        |  |  |  |
| 20                                | 64QAM      | 100     | 0         | 18.57                                            | 18.65                    | 18.72                  |                     |          |  |  |  |
| Channel                           |            |         |           | 37925                                            | 38000                    | 38115                  | Tune-up limit (dbm) |          |  |  |  |
| Frequency (MHz)                   |            |         |           | 20 <td>20</td> <td>20</td> <td colspan="3"></td> | 20                       | 20                     |                     |          |  |  |  |
| 15                                | QPSK       | 1       | 0         | 18.44                                            | 18.53                    | 18.65                  | 19                  | 0        |  |  |  |
| 15                                | QPSK       | 1       | 37        | 18.49                                            | 18.55                    | 18.74                  |                     |          |  |  |  |
| 15                                | QPSK       | 1       | 74        | 18.56                                            | 18.65                    | 18.76                  |                     |          |  |  |  |
| 15                                | QPSK       | 36      | 0         | 18.51                                            | 18.53                    | 18.64                  |                     |          |  |  |  |
| 15                                | QPSK       | 36      | 20        | 18.63                                            | 18.69                    | 18.76                  | 19                  | 0        |  |  |  |
| 15                                | QPSK       | 36      | 39        | 18.56                                            | 18.64                    | 18.80                  |                     |          |  |  |  |
| 15                                | QPSK       | 75      | 0         | 18.57                                            | 18.61                    | 18.70                  |                     |          |  |  |  |
| 15                                | 16QAM      | 1       | 0         | 18.58                                            | 18.70                    | 18.86                  |                     |          |  |  |  |
| 15                                | 16QAM      | 1       | 37        | 18.58                                            | 18.69                    | 18.79                  | 19                  | 0        |  |  |  |
| 15                                | 16QAM      | 1       | 74        | 18.72                                            | 18.81                    | 18.97                  |                     |          |  |  |  |
| 15                                | 16QAM      | 36      | 0         | 18.48                                            | 18.48                    | 18.63                  |                     |          |  |  |  |
| 15                                | 16QAM      | 36      | 20        | 18.60                                            | 18.67                    | 18.74                  |                     |          |  |  |  |
| 15                                | 16QAM      | 36      | 39        | 18.53                                            | 18.64                    | 18.78                  | 19                  | 0        |  |  |  |
| 15                                | 16QAM      | 75      | 0         | 18.55                                            | 18.67                    | 18.75                  |                     |          |  |  |  |
| 15                                | 64QAM      | 1       | 0         | 18.39                                            | 18.44                    | 18.67                  |                     |          |  |  |  |
| 15                                | 64QAM      | 1       | 37        | 18.38                                            | 18.58                    | 18.74                  | 19                  | 0        |  |  |  |
| 15                                | 64QAM      | 1       | 74        | 18.50                                            | 18.67                    | 18.75                  |                     |          |  |  |  |
| 15                                | 64QAM      | 36      | 0         | 18.53                                            | 18.52                    | 18.66                  |                     |          |  |  |  |
| 15                                | 64QAM      | 36      | 20        | 18.62                                            | 18.71                    | 18.79                  |                     |          |  |  |  |
| 15                                | 64QAM      | 36      | 39        | 18.59                                            | 18.68                    | 18.84                  | 19                  | 0        |  |  |  |
| 15                                | 64QAM      | 75      | 0         | 18.56                                            | 18.65                    | 18.74                  |                     |          |  |  |  |
| Channel                           |            |         |           | 37975                                            | 38000                    | 38020                  | Tune-up limit (dbm) |          |  |  |  |
| Frequency (MHz)                   |            |         |           | 20 <td>20</td> <td>20</td> <td colspan="3"></td> | 20                       | 20                     |                     |          |  |  |  |
| 10                                | QPSK       | 1       | 0         | 18.36                                            | 18.56                    | 18.73                  | 19                  | 0        |  |  |  |
| 10                                | QPSK       | 1       | 25        | 18.43                                            | 18.51                    | 18.76                  |                     |          |  |  |  |
| 10                                | QPSK       | 1       | 49        | 18.39                                            | 18.62                    | 18.85                  |                     |          |  |  |  |
| 10                                | QPSK       | 25      | 0         | 18.45                                            | 18.45                    | 18.65                  |                     |          |  |  |  |
| 10                                | QPSK       | 25      | 12        | 18.55                                            | 18.65                    | 18.75                  | 19                  | 0        |  |  |  |
| 10                                | QPSK       | 25      | 25        | 18.49                                            | 18.60                    | 18.81                  |                     |          |  |  |  |
| 10                                | QPSK       | 50      | 0         | 18.49                                            | 18.58                    | 18.71                  |                     |          |  |  |  |
| 10                                | 16QAM      | 1       | 0         | 18.56                                            | 18.68                    | 18.88                  |                     |          |  |  |  |
| 10                                | 16QAM      | 1       | 25        | 18.59                                            | 18.70                    | 18.91                  | 19                  | 0        |  |  |  |
| 10                                | 16QAM      | 1       | 49        | 18.65                                            | 18.71                    | 18.94                  |                     |          |  |  |  |
| 10                                | 16QAM      | 25      | 0         | 18.46                                            | 18.48                    | 18.66                  |                     |          |  |  |  |
| 10                                | 16QAM      | 25      | 12        | 18.63                                            | 18.69                    | 18.80                  |                     |          |  |  |  |
| 10                                | 16QAM      | 25      | 25        | 18.52                                            | 18.61                    | 18.83                  | 19                  | 0        |  |  |  |
| 10                                | 16QAM      | 50      | 0         | 18.54                                            | 18.65                    | 18.75                  |                     |          |  |  |  |
| 10                                | 64QAM      | 1       | 0         | 18.39                                            | 18.59                    | 18.77                  |                     |          |  |  |  |
| 10                                | 64QAM      | 1       | 25        | 18.41                                            | 18.57                    | 18.73                  | 19                  | 0        |  |  |  |
| 10                                | 64QAM      | 1       | 49        | 18.35                                            | 18.70                    | 18.81                  |                     |          |  |  |  |
| 10                                | 64QAM      | 25      | 0         | 18.46                                            | 18.47                    | 18.65                  |                     |          |  |  |  |
| 10                                | 64QAM      | 25      | 12        | 18.57                                            | 18.71                    | 18.77                  |                     |          |  |  |  |
| 10                                | 64QAM      | 25      | 25        | 18.45                                            | 18.61                    | 18.80                  | 19                  | 0        |  |  |  |
| 10                                | 64QAM      | 50      | 0         | 18.48                                            | 18.57                    | 18.67                  |                     |          |  |  |  |
| Channel                           |            |         |           | 37975                                            | 38000                    | 38020                  | Tune-up limit (dbm) |          |  |  |  |
| Frequency (MHz)                   |            |         |           | 20 <td>20</td> <td>20</td> <td colspan="3"></td> | 20                       | 20                     |                     |          |  |  |  |
| 5                                 | QPSK       | 1       | 0         | 18.42                                            | 18.45                    | 18.70                  | 19                  | 0        |  |  |  |
| 5                                 | QPSK       | 1       | 12        | 18.47                                            | 18.55                    | 18.76                  |                     |          |  |  |  |
| 5                                 | QPSK       | 1       | 24        | 18.43                                            | 18.57                    | 18.74                  |                     |          |  |  |  |
| 5                                 | QPSK       | 12      | 0         | 18.52                                            | 18.54                    | 18.82                  |                     |          |  |  |  |
| 5                                 | QPSK       | 12      | 7         | 18.59                                            | 18.69                    | 18.90                  | 19                  | 0        |  |  |  |
| 5                                 | QPSK       | 12      | 13        | 18.58                                            | 18.67                    | 18.85                  |                     |          |  |  |  |
| 5                                 | QPSK       | 25      | 0         | 18.55                                            | 18.63                    | 18.82                  |                     |          |  |  |  |
| 5                                 | 16QAM      | 1       | 0         | 18.55                                            | 18.55                    | 18.82                  |                     |          |  |  |  |
| 5                                 | 16QAM      | 1       | 12        | 18.68                                            | 18.82                    | 18.82                  | 19                  | 0        |  |  |  |
| 5                                 | 16QAM      | 1       | 24        | 18.71                                            | 18.73                    | 18.87                  |                     |          |  |  |  |
| 5                                 | 16QAM      | 12      | 0         | 18.51                                            | 18.57                    | 18.79                  |                     |          |  |  |  |
| 5                                 | 16QAM      | 12      | 7         | 18.57                                            | 18.68                    | 18.86                  |                     |          |  |  |  |
| 5                                 | 16QAM      | 12      | 13        | 18.56                                            | 18.66                    | 18.86                  | 19                  | 0        |  |  |  |
| 5                                 | 16QAM      | 25      | 0         | 18.50                                            | 18.68                    | 18.87                  |                     |          |  |  |  |
| 5                                 | 64QAM      | 1       | 0         | 18.29                                            | 18.35                    | 18.58                  |                     |          |  |  |  |
| 5                                 | 64QAM      | 1       | 12        | 18.36                                            | 18.47                    | 18.66                  | 19                  | 0        |  |  |  |
| 5                                 | 64QAM      | 1       | 24        | 18.36                                            | 18.46                    | 18.63                  |                     |          |  |  |  |
| 5                                 | 64QAM      | 12      | 0         | 18.54                                            | 18.56                    | 18.77                  |                     |          |  |  |  |
| 5                                 | 64QAM      | 12      | 7         | 18.58                                            | 18.67                    | 18.86                  | 19                  | 0        |  |  |  |
| 5                                 | 64QAM      | 12      | 13        | 18.54                                            | 18.67                    | 18.83                  |                     |          |  |  |  |
| 5                                 | 64QAM      | 25      | 0         | 18.55                                            | 18.64                    | 18.83                  |                     |          |  |  |  |

| Band 41 (2.6G Band) |            |         |           |                      |                             |                         |                              |                       |                     |          |          |
|---------------------|------------|---------|-----------|----------------------|-----------------------------|-------------------------|------------------------------|-----------------------|---------------------|----------|----------|
| BW [MHz]            | Modulation | RB Size | RB Offset | Power Low Ch. / Freq | Power Low Middle Ch. / Freq | Power Middle Ch. / Freq | Power High Middle Ch. / Freq | Power High Ch. / Freq | Tune-up limit (dBm) | MPR (dB) |          |
| Channel             |            |         |           | 39750                | 40185                       | 40520                   | 41055                        | 41490                 |                     |          |          |
| Frequency (MHz)     |            |         |           | 2005                 | 2563.5                      | 2933                    | 2363.5                       | 2693                  |                     |          |          |
| 20                  | QPSK       | 1       | 0         | 18.78                | 18.71                       | 18.91                   | 18.85                        | 18.80                 | 19                  | 0        |          |
| 20                  | QPSK       | 1       | 49        | 18.67                | 18.70                       | 18.79                   | 18.82                        | 18.87                 |                     |          |          |
| 20                  | QPSK       | 1       | 99        | 18.67                | 18.68                       | 18.76                   | 18.77                        | 18.90                 |                     |          |          |
| 20                  | QPSK       | 50      | 0         | 18.66                | 18.51                       | 18.96                   | 18.76                        | 18.85                 |                     |          |          |
| 20                  | QPSK       | 50      | 24        | 18.68                | 18.54                       | 18.79                   | 18.93                        | 18.90                 | 19                  | 0        |          |
| 20                  | QPSK       | 50      | 50        | 18.68                | 18.53                       | 18.77                   | 18.91                        | 18.96                 |                     |          |          |
| 20                  | QPSK       | 100     | 0         | 18.45                | 18.53                       | 18.85                   | 18.81                        | 18.85                 |                     |          |          |
| 20                  | 16QAM      | 1       | 0         | 18.63                | 18.51                       | 18.47                   | 18.69                        | 18.68                 | 19                  | 0        |          |
| 20                  | 16QAM      | 1       | 49        | 18.58                | 18.51                       | 18.72                   | 18.94                        | 18.97                 |                     |          |          |
| 20                  | 16QAM      | 1       | 99        | 18.56                | 18.52                       | 18.52                   | 18.59                        | 18.91                 |                     |          |          |
| 20                  | 16QAM      | 50      | 0         | 18.71                | 18.64                       | 18.70                   | 18.79                        | 18.89                 |                     |          |          |
| 20                  | 16QAM      | 50      | 24        | 18.72                | 18.70                       | 18.93                   | 18.95                        | 18.93                 | 19                  | 0        |          |
| 20                  | 16QAM      | 50      | 50        | 18.68                | 18.66                       | 18.90                   | 18.87                        | 18.94                 |                     |          |          |
| 20                  | 16QAM      | 100     | 0         | 18.63                | 18.48                       | 18.72                   | 18.86                        | 18.94                 |                     |          |          |
| 20                  | 64QAM      | 1       | 0         | 18.47                | 18.56                       | 18.43                   | 18.39                        | 18.76                 | 19                  | 0        |          |
| 20                  | 64QAM      | 1       | 49        | 18.45                | 18.51                       | 18.57                   | 18.67                        | 18.86                 |                     |          |          |
| 20                  | 64QAM      | 1       | 99        | 18.70                | 18.76                       | 18.74                   | 18.79                        | 18.55                 |                     |          |          |
| 20                  | 64QAM      | 50      | 0         | 18.58                | 18.51                       | 18.58                   | 18.73                        | 18.93                 |                     |          |          |
| 20                  | 64QAM      | 50      | 24        | 18.56                | 18.54                       | 18.57                   | 18.91                        | 18.91                 | 19                  | 0        |          |
| 20                  | 64QAM      | 50      | 50        | 18.53                | 18.52                       | 18.52                   | 18.80                        | 18.90                 |                     |          |          |
| 20                  | 64QAM      | 100     | 0         | 18.50                | 18.51                       | 18.56                   | 18.88                        | 18.89                 |                     |          |          |
| Channel             |            |         |           | 39725                | 40173                       | 40520                   | 41066                        | 41515                 | Tune-up limit (dBm) |          | MPR (dB) |
| Frequency (MHz)     |            |         |           | 2063.5               | 2561.3                      | 2993                    | 2357.8                       | 2692.5                |                     |          |          |
| 15                  | QPSK       | 1       | 0         | 18.49                | 18.39                       | 18.35                   | 18.58                        | 18.55                 | 19                  | 0        |          |
| 15                  | QPSK       | 1       | 37        | 18.53                | 18.39                       | 18.47                   | 18.76                        | 18.81                 |                     |          |          |
| 15                  | QPSK       | 1       | 74        | 18.55                | 18.39                       | 18.42                   | 18.60                        | 18.77                 |                     |          |          |
| 15                  | QPSK       | 36      | 0         | 18.62                | 18.43                       | 18.43                   | 18.73                        | 18.82                 |                     |          |          |
| 15                  | QPSK       | 36      | 20        | 18.64                | 18.50                       | 18.63                   | 18.86                        | 18.87                 | 19                  | 0        |          |
| 15                  | QPSK       | 36      | 39        | 18.57                | 18.39                       | 18.62                   | 18.80                        | 18.85                 | 19                  | 0        |          |
| 15                  | QPSK       | 75      | 0         | 18.59                | 18.44                       | 18.56                   | 18.84                        | 18.82                 |                     |          |          |
| 15                  | 16QAM      | 1       | 0         | 18.69                | 18.46                       | 18.42                   | 18.74                        | 18.76                 |                     |          |          |
| 15                  | 16QAM      | 1       | 37        | 18.62                | 18.43                       | 18.51                   | 18.69                        | 18.78                 |                     |          |          |
| 15                  | 16QAM      | 1       | 74        | 18.62                | 18.41                       | 18.60                   | 18.75                        | 18.85                 | 19                  | 0        |          |
| 15                  | 16QAM      | 36      | 0         | 18.62                | 18.39                       | 18.41                   | 18.73                        | 18.79                 |                     |          |          |
| 15                  | 16QAM      | 36      | 20        | 18.61                | 18.48                       | 18.61                   | 18.85                        | 18.84                 |                     |          |          |
| 15                  | 16QAM      | 36      | 39        | 18.52                | 18.37                       | 18.59                   | 18.80                        | 18.86                 | 19                  | 0        |          |
| 15                  | 16QAM      | 75      | 0         | 18.64                | 18.44                       | 18.55                   | 18.83                        | 18.82                 |                     |          |          |
| 15                  | 64QAM      | 1       | 0         | 18.50                | 18.49                       | 18.45                   | 18.53                        | 18.80                 |                     |          |          |
| 15                  | 64QAM      | 1       | 37        | 18.45                | 18.38                       | 18.59                   | 18.83                        | 18.86                 | 19                  |          | 0        |
| 15                  | 64QAM      | 1       | 74        | 18.47                | 18.46                       | 18.44                   | 18.45                        | 18.61                 |                     |          |          |
| 15                  | 64QAM      | 36      | 0         | 18.66                | 18.45                       | 18.46                   | 18.76                        | 18.84                 |                     |          |          |
| 15                  | 64QAM      | 36      | 20        | 18.68                | 18.52                       | 18.61                   | 18.81                        | 18.88                 |                     |          |          |
| 15                  | 64QAM      | 36      | 39        | 18.58                | 18.46                       | 18.63                   | 18.82                        | 18.88                 | 19                  | 0        |          |
| 15                  | 64QAM      | 75      | 0         | 18.64                | 18.46                       | 18.60                   | 18.83                        | 18.84                 |                     |          |          |
| 15                  | 64QAM      | 75      | 0         | 18.64                | 18.46                       | 18.60                   | 18.83                        | 18.84                 |                     |          |          |
| Channel             |            |         |           | 39700                | 40160                       | 40520                   | 41080                        | 41540                 | Tune-up limit (dBm) |          | MPR (dB) |
| Frequency (MHz)     |            |         |           | 2301                 | 2547                        | 2993                    | 2630                         | 2693                  |                     |          |          |
| 10                  | QPSK       | 1       | 0         | 18.31                | 18.38                       | 18.34                   | 18.44                        | 18.55                 | 19                  | 0        |          |
| 10                  | QPSK       | 1       | 25        | 18.29                | 18.38                       | 18.36                   | 18.76                        | 18.74                 |                     |          |          |
| 10                  | QPSK       | 1       | 49        | 18.36                | 18.29                       | 18.28                   | 18.56                        | 18.59                 |                     |          |          |
| 10                  | QPSK       | 25      | 0         | 18.44                | 18.44                       | 18.51                   | 18.74                        | 18.66                 |                     |          |          |
| 10                  | QPSK       | 25      | 12        | 18.44                | 18.45                       | 18.56                   | 18.81                        | 18.93                 | 19                  | 0        |          |
| 10                  | QPSK       | 25      | 12        | 18.44                | 18.46                       | 18.45                   | 18.82                        | 18.86                 |                     |          |          |
| 10                  | QPSK       | 25      | 25        | 0                    | 18.51                       | 18.47                   | 18.51                        | 18.71                 |                     |          | 18.84    |
| 10                  | 16QAM      | 1       | 0         | 18.70                | 18.49                       | 18.51                   | 18.66                        | 18.71                 | 19                  |          | 0        |
| 10                  | 16QAM      | 1       | 25        | 18.61                | 18.65                       | 18.63                   | 18.76                        | 18.82                 |                     |          |          |
| 10                  | 16QAM      | 1       | 49        | 18.60                | 18.48                       | 18.55                   | 18.69                        | 18.68                 |                     |          |          |
| 10                  | 16QAM      | 25      | 0         | 18.63                | 18.57                       | 18.55                   | 18.74                        | 18.67                 |                     |          |          |
| 10                  | 16QAM      | 25      | 12        | 18.60                | 18.65                       | 18.71                   | 18.84                        | 18.79                 | 19                  | 0        |          |
| 10                  | 16QAM      | 25      | 25        | 18.61                | 18.54                       | 18.56                   | 18.84                        | 18.83                 |                     |          |          |
| 10                  | 16QAM      | 50      | 0         | 18.61                | 18.57                       | 18.59                   | 18.77                        | 18.89                 |                     |          |          |
| 10                  | 64QAM      | 1       | 0         | 18.54                | 18.41                       | 18.48                   | 18.54                        | 18.61                 | 19                  |          | 0        |
| 10                  | 64QAM      | 1       | 25        | 18.52                | 18.57                       | 18.59                   | 18.79                        | 18.61                 |                     |          |          |
| 10                  | 64QAM      | 1       | 49        | 18.57                | 18.42                       | 18.36                   | 18.57                        | 18.64                 |                     |          |          |
| 10                  | 64QAM      | 25      | 0         | 18.63                | 18.54                       | 18.48                   | 18.70                        | 18.84                 |                     |          |          |
| 10                  | 64QAM      | 25      | 12        | 18.67                | 18.62                       | 18.66                   | 18.83                        | 18.78                 | 19                  | 0        |          |
| 10                  | 64QAM      | 25      | 25        | 18.60                | 18.52                       | 18.57                   | 18.83                        | 18.84                 |                     |          |          |
| 10                  | 64QAM      | 50      | 0         | 18.49                | 18.56                       | 18.53                   | 18.69                        | 18.84                 |                     |          |          |
| Channel             |            |         |           | 2063.5               | 2561.3                      | 2993                    | 2357.8                       | 2692.5                | Tune-up limit (dBm) |          | MPR (dB) |
| Frequency (MHz)     |            |         |           | 2498.5               | 2561.3                      | 2993                    | 2643.30                      | 2697.5                |                     |          |          |
| 5                   | QPSK       | 1       | 0         | 18.36                | 18.31                       | 18.33                   | 18.74                        | 18.80                 | 19                  | 0        |          |
| 5                   | QPSK       | 1       | 24        | 18.32                | 18.31                       | 18.41                   | 18.78                        | 18.81                 |                     |          |          |
| 5                   | QPSK       | 1       | 24        | 18.33                | 18.36                       | 18.40                   | 18.77                        | 18.76                 |                     |          |          |
| 5                   | QPSK       | 12      | 0         | 18.51                | 18.47                       | 18.46                   | 18.84                        | 18.82                 |                     |          |          |
| 5                   | QPSK       | 12      | 7         | 18.53                | 18.49                       | 18.55                   | 18.92                        | 18.85                 | 19                  | 0        |          |
| 5                   | QPSK       | 12      | 13        | 18.47                | 18.46                       | 18.52                   | 18.90                        | 18.93                 |                     |          |          |
| 5                   | QPSK       | 25      | 0         | 18.44                | 18.43                       | 18.52                   | 18.84                        | 18.90                 |                     |          |          |
| 5                   | 16QAM      | 1       | 0         | 18.56                | 18.55                       | 18.57                   | 18.85                        | 18.75                 | 19                  |          | 0        |
| 5                   | 16QAM      | 1       | 12        | 18.56                | 18.53                       | 18.55                   | 18.84                        | 18.84                 |                     |          |          |
| 5                   | 16QAM      | 1       | 24        | 18.57                | 18.54                       | 18.56                   | 18.84                        | 18.90                 |                     |          |          |
| 5                   | 16QAM      | 12      | 0         | 18.49                | 18.44                       | 18.49                   | 18.81                        | 18.89                 |                     |          |          |
| 5                   | 16QAM      | 12      | 7         | 18.45                | 18.45                       | 18.53                   | 18.90                        | 18.94                 | 19                  | 0        |          |
| 5                   | 16QAM      | 12      | 13        | 18.45                | 18.46                       | 18.52                   | 18.89                        | 18.90                 |                     |          |          |
| 5                   | 16QAM      | 25      | 0         | 18.48                | 18.47                       | 18.48                   | 18.89                        | 18.90                 |                     |          |          |
| 5                   | 64QAM      | 1       | 0         | 18.33                | 18.26                       | 18.25                   | 18.63                        | 18.70                 | 19                  |          | 0        |
| 5                   | 64QAM      | 1       | 12        | 18.34                | 18.24                       | 18.33                   | 18.74                        | 18.72                 |                     |          |          |
| 5                   | 64QAM      | 1       | 24        | 18.54                | 18.45                       | 18.51                   | 18.69                        | 18.66                 |                     |          |          |
| 5                   | 64QAM      | 12      | 0         | 18.64                | 18.52                       | 18.65                   | 18.81                        | 18.89                 |                     |          |          |
| 5                   | 64QAM      | 12      | 7         | 18.68                | 18.57                       | 18.67                   | 18.92                        | 18.92                 | 19                  | 0        |          |
| 5                   | 64QAM      | 12      | 13        | 18.45                | 18.51                       | 18.52                   | 18.90                        | 18.89                 |                     |          |          |
| 5                   | 64QAM      | 25      | 0         | 18.42                | 18.39                       | 18.49                   | 18.83                        | 18.88                 |                     |          |          |

# Reduced Power Mode for Hotspot on

| GSM850          |  | Burst Average Power (dBm) |       |       | Tune-up Limit |  | Frame Average Power (dBm) |       |       | Tune-up Limit |  |
|-----------------|--|---------------------------|-------|-------|---------------|--|---------------------------|-------|-------|---------------|--|
| TX Channel      |  | 128                       | 169   | 251   |               |  | 128                       | 169   | 251   |               |  |
| Frequency (MHz) |  | 824.2                     | 836.4 | 848.8 |               |  | 824.2                     | 836.4 | 848.8 |               |  |
| GSM 1 Tx slot   |  | 30.90                     | 30.91 | 30.92 | 31.00         |  | 21.90                     | 21.91 | 21.92 | 22.00         |  |
| GPRS 1 Tx slot  |  | 30.85                     | 30.90 | 30.95 | 31.00         |  | 21.88                     | 21.90 | 21.95 | 22.00         |  |
| GPRS 2 Tx slots |  | 29.99                     | 29.84 | 29.93 | 30.50         |  | 23.99                     | 23.84 | 23.93 | 24.50         |  |
| GPRS 3 Tx slots |  | 28.12                     | 28.35 | 28.34 | 29.00         |  | 23.86                     | 24.09 | 24.08 | 24.74         |  |
| GPRS 4 Tx slots |  | 26.54                     | 26.71 | 26.70 | 27.50         |  | 23.54                     | 23.71 | 23.70 | 24.50         |  |
| EDGE 1 Tx slot  |  | 25.40                     | 25.41 | 24.97 | 26.50         |  | 16.40                     | 16.41 | 15.97 | 16.50         |  |
| EDGE 2 Tx slots |  | 23.92                     | 23.98 | 23.87 | 25.00         |  | 17.92                     | 17.96 | 17.87 | 19.00         |  |
| EDGE 3 Tx slots |  | 22.12                     | 22.21 | 22.10 | 23.00         |  | 17.86                     | 17.96 | 17.84 | 18.74         |  |
| EDGE 4 Tx slots |  | 20.67                     | 20.92 | 20.84 | 22.00         |  | 17.67                     | 17.92 | 17.84 | 19.00         |  |

| GSM1900         |  | Burst Average Power (dBm) |       |        | Tune-up Limit |  | Frame Average Power (dBm) |       |        | Tune-up Limit |  |
|-----------------|--|---------------------------|-------|--------|---------------|--|---------------------------|-------|--------|---------------|--|
| TX Channel      |  | 512                       | 661   | 810    |               |  | 512                       | 661   | 810    |               |  |
| Frequency (MHz) |  | 1852.2                    | 1860  | 1868.8 |               |  | 1852.2                    | 1860  | 1868.8 |               |  |
| GSM 1 Tx slot   |  | 23.41                     | 23.25 | 22.52  | 23.50         |  | 14.41                     | 14.25 | 13.52  | 14.50         |  |
| GPRS 1 Tx slot  |  | 23.40                     | 23.22 | 22.51  | 23.50         |  | 14.40                     | 14.22 | 13.51  | 14.50         |  |
| GPRS 2 Tx slots |  | 22.80                     | 21.51 | 21.67  | 23.00         |  | 16.80                     | 15.51 | 15.67  | 17.00         |  |
| GPRS 3 Tx slots |  | 21.72                     | 21.24 | 20.30  | 21.50         |  | 16.96                     | 17.02 | 16.54  | 17.24         |  |
| GPRS 4 Tx slots |  | 18.98                     | 18.38 | 18.02  | 19.50         |  | 15.98                     | 15.38 | 15.02  | 16.50         |  |
| EDGE 1 Tx slot  |  | 19.54                     | 19.22 | 18.51  | 20.00         |  | 10.54                     | 10.22 | 9.51   | 11.00         |  |
| EDGE 2 Tx slots |  | 18.01                     | 17.84 | 17.06  | 18.50         |  | 12.01                     | 11.84 | 11.06  | 12.50         |  |
| EDGE 3 Tx slots |  | 15.37                     | 16.19 | 15.48  | 16.50         |  | 11.11                     | 11.93 | 11.22  | 12.24         |  |
| EDGE 4 Tx slots |  | 15.32                     | 14.77 | 14.48  | 15.50         |  | 12.32                     | 11.77 | 11.48  | 12.50         |  |

| Band            |                    | WCDMA II |       |        | Tune-up Limit |  | WCDMA IV |         |         | Tune-up Limit |       | WCDMA V |        |        | Tune-up Limit |  |
|-----------------|--------------------|----------|-------|--------|---------------|--|----------|---------|---------|---------------|-------|---------|--------|--------|---------------|--|
| TX Channel      |                    | 9652     | 9660  | 9668   |               |  | 13112    | 14112   | 15112   |               |       | 41332   | 41412  | 42332  |               |  |
| Rx Channel      |                    | 9662     | 9660  | 9658   |               |  | 15517    | 16318   | 17318   |               |       | 43517   | 44017  | 44518  |               |  |
| Frequency (MHz) |                    | 1862.4   | 1860  | 1857.6 |               |  | 17112.4  | 17312.6 | 17512.8 |               |       | 8361.4  | 8361.4 | 8461.6 |               |  |
| 3GPP Rel 99     | AMR 12.2Kbps       | 15.70    | 15.75 | 15.74  | 16.50         |  | 14.71    | 14.99   | 14.89   | 16.00         | 22.79 | 22.86   | 22.41  | 23.00  |               |  |
| 3GPP Rel 99     | AMR 12.2Kbps       | 15.72    | 15.77 | 15.76  | 16.50         |  | 14.72    | 15.00   | 14.81   | 16.00         | 22.80 | 22.87   | 22.43  | 23.00  |               |  |
| 3GPP Rel 6      | HSDPA Subtest-1    | 14.66    | 14.66 | 14.26  | 16.00         |  | 13.61    | 13.92   | 13.48   | 15.50         | 22.44 | 22.46   | 22.14  | 22.50  |               |  |
| 3GPP Rel 6      | HSDPA Subtest-2    | 14.63    | 14.64 | 14.19  | 16.00         |  | 13.60    | 13.93   | 13.54   | 15.50         | 22.47 | 22.45   | 22.11  | 22.50  |               |  |
| 3GPP Rel 6      | HSDPA Subtest-3    | 14.17    | 14.14 | 13.74  | 15.50         |  | 13.06    | 13.46   | 12.88   | 15.00         | 21.94 | 21.96   | 21.63  | 22.00  |               |  |
| 3GPP Rel 6      | HSDPA Subtest-4    | 14.19    | 14.10 | 13.69  | 15.50         |  | 13.11    | 13.46   | 12.86   | 15.00         | 21.93 | 21.92   | 21.63  | 22.00  |               |  |
| 3GPP Rel 6      | DC-HSDPA Subtest-1 | 14.65    | 14.66 | 14.25  | 16.00         |  | 13.65    | 13.95   | 13.50   | 15.50         | 22.41 | 22.41   | 22.11  | 22.50  |               |  |
| 3GPP Rel 6      | DC-HSDPA Subtest-2 | 14.64    | 14.66 | 14.18  | 16.00         |  | 13.61    | 13.94   | 13.56   | 15.50         | 22.44 | 22.39   | 22.12  | 22.50  |               |  |
| 3GPP Rel 6      | DC-HSDPA Subtest-3 | 14.19    | 14.15 | 13.73  | 15.50         |  | 13.16    | 13.46   | 13.02   | 15.00         | 21.91 | 21.91   | 21.61  | 22.00  |               |  |
| 3GPP Rel 6      | DC-HSDPA Subtest-4 | 14.19    | 14.12 | 13.71  | 15.50         |  | 13.16    | 13.47   | 12.89   | 15.00         | 21.95 | 21.96   | 21.66  | 22.00  |               |  |
| 3GPP Rel 6      | HSUPA Subtest-1    | 14.67    | 14.64 | 14.19  | 16.00         |  | 13.69    | 13.97   | 13.50   | 15.50         | 22.44 | 22.47   | 22.12  | 22.50  |               |  |
| 3GPP Rel 6      | HSUPA Subtest-2    | 12.58    | 12.62 | 12.28  | 14.00         |  | 11.68    | 12.03   | 11.61   | 13.50         | 20.48 | 20.44   | 20.09  | 20.50  |               |  |
| 3GPP Rel 6      | HSUPA Subtest-3    | 13.71    | 13.68 | 13.31  | 15.00         |  | 12.61    | 12.94   | 12.49   | 14.50         | 21.44 | 21.47   | 21.16  | 21.50  |               |  |
| 3GPP Rel 6      | HSUPA Subtest-4    | 12.74    | 12.68 | 12.32  | 14.00         |  | 11.61    | 11.96   | 11.53   | 13.50         | 20.44 | 20.48   | 20.08  | 20.50  |               |  |
| 3GPP Rel 6      | HSUPA Subtest-5    | 14.80    | 14.70 | 14.30  | 16.00         |  | 13.60    | 14.00   | 13.50   | 15.50         | 22.50 | 22.50   | 22.10  | 22.50  |               |  |

| Band             |  | CDMA BC1 |       |         | Tune-up Limit |  |
|------------------|--|----------|-------|---------|---------------|--|
| TX Channel       |  | 25       | 600   | 1175    |               |  |
| Frequency (MHz)  |  | 1851.25  | 1860  | 1868.75 |               |  |
| RC1 S05S         |  | 16.18    | 16.32 | 16.25   | 17.00         |  |
| RC1 S05S         |  | 16.22    | 16.48 | 16.33   | 17.00         |  |
| RC3 S032 (F+SCH) |  | 16.19    | 16.40 | 16.30   | 17.00         |  |
| RC3 S032 (H+SCH) |  | 16.18    | 16.35 | 16.27   | 17.00         |  |
| RTAP 153.6Kbps   |  | 16.20    | 16.42 | 16.32   | 17.00         |  |
| RTAP 405Kbps     |  | 16.19    | 16.37 | 16.28   | 17.00         |  |

| Band 2 (190MHz Band) |            |         |           |                    |                       |                     |                     |          |  |  |       |       |       |
|----------------------|------------|---------|-----------|--------------------|-----------------------|---------------------|---------------------|----------|--|--|-------|-------|-------|
| Part 24E             |            |         |           |                    |                       |                     |                     |          |  |  |       |       |       |
| BW (MHz)             | Modulation | RB Size | RB Offset | Power Low Co./Freq | Power Middle Co./Freq | Power High Co./Freq | Time-up limit (dBm) | MPE (dB) |  |  |       |       |       |
| Channel              |            |         |           |                    |                       |                     |                     |          |  |  |       |       |       |
| Frequency (MHz)      |            |         |           |                    |                       |                     |                     |          |  |  |       |       |       |
| 20                   | QPSK       | 1       | 0         | 15.11              | 15.13                 | 14.91               | 16                  | 0        |  |  |       |       |       |
| 20                   | QPSK       | 1       | 49        | 15.00              | 15.11                 | 14.93               |                     |          |  |  |       |       |       |
| 20                   | QPSK       | 1       | 99        | 15.02              | 15.02                 | 15.12               |                     |          |  |  |       |       |       |
| 20                   | QPSK       | 50      | 0         | 15.02              | 15.18                 | 14.92               |                     |          |  |  |       |       |       |
| 20                   | QPSK       | 50      | 24        | 15.17              | 15.11                 | 14.92               |                     |          |  |  |       |       |       |
| 20                   | QPSK       | 50      | 50        | 15.10              | 15.01                 | 15.05               | 16                  | 0        |  |  |       |       |       |
| 20                   | QPSK       | 100     | 0         | 15.05              | 15.06                 | 15.04               |                     |          |  |  |       |       |       |
| 20                   | 16QAM      | 1       | 0         | 14.87              | 15.04                 | 14.98               |                     |          |  |  |       |       |       |
| 20                   | 16QAM      | 1       | 49        | 14.80              | 14.54                 | 14.58               |                     |          |  |  |       |       |       |
| 20                   | 16QAM      | 50      | 0         | 14.70              | 14.55                 | 14.72               |                     |          |  |  |       |       |       |
| 20                   | 16QAM      | 50      | 24        | 14.61              | 14.59                 | 14.52               | 16                  | 0        |  |  |       |       |       |
| 20                   | 16QAM      | 50      | 50        | 14.57              | 14.49                 | 14.60               |                     |          |  |  |       |       |       |
| 20                   | 16QAM      | 100     | 0         | 14.62              | 14.51                 | 14.46               |                     |          |  |  |       |       |       |
| 20                   | 64QAM      | 1       | 0         | 14.54              | 14.59                 | 14.30               |                     |          |  |  |       |       |       |
| 20                   | 64QAM      | 1       | 49        | 14.63              | 14.46                 | 14.42               |                     |          |  |  |       |       |       |
| 20                   | 64QAM      | 1       | 99        | 14.64              | 14.51                 | 14.77               | 16                  | 0        |  |  |       |       |       |
| 20                   | 64QAM      | 50      | 0         | 14.66              | 14.62                 | 14.74               |                     |          |  |  |       |       |       |
| 20                   | 64QAM      | 50      | 24        | 14.61              | 14.55                 | 14.51               |                     |          |  |  |       |       |       |
| 20                   | 64QAM      | 50      | 50        | 14.65              | 14.52                 | 14.68               |                     |          |  |  |       |       |       |
| 20                   | 64QAM      | 100     | 0         | 15.15              | 15.02                 | 15.18               |                     |          |  |  |       |       |       |
| Channel              |            |         |           |                    |                       |                     |                     |          |  |  |       |       |       |
| Frequency (MHz)      |            |         |           |                    |                       |                     | 18615               |          |  |  | 18800 | 19125 |       |
| 15                   | QPSK       | 1       | 0         | 14.86              | 15.00                 | 14.98               | 16                  | 0        |  |  |       |       |       |
| 15                   | QPSK       | 1       | 37        | 15.05              | 15.13                 | 14.75               |                     |          |  |  |       |       |       |
| 15                   | QPSK       | 1       | 74        | 14.88              | 14.97                 | 14.69               |                     |          |  |  |       |       |       |
| 15                   | QPSK       | 36      | 0         | 15.10              | 15.12                 | 14.85               |                     |          |  |  |       |       |       |
| 15                   | QPSK       | 36      | 20        | 15.23              | 15.17                 | 14.88               |                     |          |  |  |       |       |       |
| 15                   | QPSK       | 36      | 39        | 15.05              | 15.10                 | 14.73               | 16                  | 0        |  |  |       |       |       |
| 15                   | QPSK       | 75      | 0         | 15.08              | 15.11                 | 14.65               |                     |          |  |  |       |       |       |
| 15                   | 16QAM      | 1       | 0         | 15.01              | 14.97                 | 14.68               |                     |          |  |  |       |       |       |
| 15                   | 16QAM      | 1       | 37        | 14.79              | 14.87                 | 14.59               |                     |          |  |  |       |       |       |
| 15                   | 16QAM      | 1       | 74        | 14.72              | 14.86                 | 14.52               |                     |          |  |  |       |       |       |
| 15                   | 16QAM      | 36      | 0         | 14.96              | 14.93                 | 14.32               | 16                  | 0        |  |  |       |       |       |
| 15                   | 16QAM      | 36      | 20        | 14.67              | 14.64                 | 14.39               |                     |          |  |  |       |       |       |
| 15                   | 16QAM      | 36      | 39        | 14.71              | 14.51                 | 14.25               |                     |          |  |  |       |       |       |
| 15                   | 16QAM      | 75      | 0         | 14.61              | 14.56                 | 14.18               |                     |          |  |  |       |       |       |
| 15                   | 64QAM      | 1       | 0         | 14.66              | 14.90                 | 14.88               |                     |          |  |  |       |       |       |
| 15                   | 64QAM      | 1       | 37        | 14.80              | 14.78                 | 14.66               | 16                  | 0        |  |  |       |       |       |
| 15                   | 64QAM      | 1       | 74        | 14.81              | 14.67                 | 14.40               |                     |          |  |  |       |       |       |
| 15                   | 64QAM      | 36      | 0         | 14.81              | 14.86                 | 14.51               |                     |          |  |  |       |       |       |
| 15                   | 64QAM      | 36      | 20        | 14.56              | 14.62                 | 14.61               |                     |          |  |  |       |       |       |
| 15                   | 64QAM      | 36      | 39        | 14.62              | 14.64                 | 14.26               |                     |          |  |  |       |       |       |
| 15                   | 64QAM      | 75      | 0         | 14.59              | 14.63                 | 14.41               | 16                  | 0        |  |  |       |       |       |
| Channel              |            |         |           |                    |                       |                     |                     |          |  |  | 18650 | 18800 | 19150 |
| Frequency (MHz)      |            |         |           |                    |                       |                     |                     |          |  |  | 18650 | 18800 | 19050 |
| 10                   | QPSK       | 1       | 0         | 15.03              | 14.82                 | 14.96               | 16                  | 0        |  |  |       |       |       |
| 10                   | QPSK       | 1       | 25        | 15.12              | 15.12                 | 14.85               |                     |          |  |  |       |       |       |
| 10                   | QPSK       | 1       | 49        | 14.67              | 14.67                 | 14.66               |                     |          |  |  |       |       |       |
| 10                   | QPSK       | 25      | 0         | 15.19              | 15.14                 | 14.82               |                     |          |  |  |       |       |       |
| 10                   | QPSK       | 25      | 12        | 15.22              | 15.29                 | 14.80               |                     |          |  |  |       |       |       |
| 10                   | QPSK       | 25      | 25        | 15.09              | 15.11                 | 14.83               | 16                  | 0        |  |  |       |       |       |
| 10                   | QPSK       | 50      | 0         | 15.20              | 15.18                 | 14.83               |                     |          |  |  |       |       |       |
| 10                   | 16QAM      | 1       | 0         | 15.05              | 15.02                 | 14.56               |                     |          |  |  |       |       |       |
| 10                   | 16QAM      | 1       | 25        | 14.75              | 14.73                 | 14.55               |                     |          |  |  |       |       |       |
| 10                   | 16QAM      | 1       | 49        | 14.85              | 14.86                 | 14.39               |                     |          |  |  |       |       |       |
| 10                   | 16QAM      | 25      | 0         | 14.72              | 14.84                 | 14.41               | 16                  | 0        |  |  |       |       |       |
| 10                   | 16QAM      | 25      | 12        | 14.76              | 14.63                 | 14.36               |                     |          |  |  |       |       |       |
| 10                   | 16QAM      | 25      | 25        | 14.68              | 14.60                 | 14.35               |                     |          |  |  |       |       |       |
| 10                   | 16QAM      | 50      | 0         | 14.69              | 14.62                 | 14.66               |                     |          |  |  |       |       |       |
| 10                   | 64QAM      | 1       | 0         | 14.65              | 15.11                 | 14.67               |                     |          |  |  |       |       |       |
| 10                   | 64QAM      | 1       | 25        | 14.63              | 14.61                 | 14.63               | 16                  | 0        |  |  |       |       |       |
| 10                   | 64QAM      | 1       | 49        | 14.62              | 14.53                 | 14.33               |                     |          |  |  |       |       |       |
| 10                   | 64QAM      | 25      | 0         | 14.55              | 14.56                 | 14.46               |                     |          |  |  |       |       |       |
| 10                   | 64QAM      | 25      | 12        | 14.68              | 14.56                 | 14.39               |                     |          |  |  |       |       |       |
| 10                   | 64QAM      | 25      | 25        | 14.66              | 14.57                 | 14.22               |                     |          |  |  |       |       |       |
| 10                   | 64QAM      | 50      | 0         | 15.15              | 15.07                 | 14.72               | 16                  | 0        |  |  |       |       |       |
| Channel              |            |         |           |                    |                       |                     |                     |          |  |  | 18625 | 18800 | 19175 |
| Frequency (MHz)      |            |         |           |                    |                       |                     |                     |          |  |  | 18625 | 18800 | 19075 |
| 5                    | QPSK       | 1       | 0         | 15.22              | 15.11                 | 15.03               | 16                  | 0        |  |  |       |       |       |
| 5                    | QPSK       | 1       | 12        | 15.27              | 15.10                 | 15.01               |                     |          |  |  |       |       |       |
| 5                    | QPSK       | 1       | 24        | 15.11              | 15.03                 | 14.85               |                     |          |  |  |       |       |       |
| 5                    | QPSK       | 12      | 0         | 15.37              | 15.20                 | 15.05               |                     |          |  |  |       |       |       |
| 5                    | QPSK       | 12      | 7         | 15.34              | 15.20                 | 15.10               |                     |          |  |  |       |       |       |
| 5                    | QPSK       | 12      | 13        | 15.31              | 15.24                 | 15.07               | 16                  | 0        |  |  |       |       |       |
| 5                    | QPSK       | 25      | 0         | 15.33              | 15.22                 | 15.12               |                     |          |  |  |       |       |       |
| 5                    | 16QAM      | 1       | 0         | 15.15              | 15.07                 | 14.80               |                     |          |  |  |       |       |       |
| 5                    | 16QAM      | 1       | 12        | 15.03              | 15.00                 | 14.66               |                     |          |  |  |       |       |       |
| 5                    | 16QAM      | 1       | 24        | 15.08              | 14.92                 | 14.69               |                     |          |  |  |       |       |       |
| 5                    | 16QAM      | 12      | 0         | 14.86              | 14.85                 | 14.61               | 16                  | 0        |  |  |       |       |       |
| 5                    | 16QAM      | 12      | 7         | 14.86              | 14.82                 | 14.63               |                     |          |  |  |       |       |       |
| 5                    | 16QAM      | 12      | 13        | 14.85              | 14.76                 | 14.60               |                     |          |  |  |       |       |       |
| 5                    | 16QAM      | 25      | 0         | 14.86              | 14.73                 | 14.63               |                     |          |  |  |       |       |       |
| 5                    | 64QAM      | 1       | 0         | 15.01              | 14.97                 | 14.70               |                     |          |  |  |       |       |       |
| 5                    | 64QAM      | 1       | 12        | 15.14              | 14.97                 | 14.86               | 16                  | 0        |  |  |       |       |       |
| 5                    | 64QAM      | 1       | 24        | 14.94              | 14.79                 | 14.65               |                     |          |  |  |       |       |       |
| 5                    | 64QAM      | 12      | 0         | 14.75              | 14.84                 | 14.64               |                     |          |  |  |       |       |       |
| 5                    | 64QAM      | 12      | 7         | 14.95              | 14.85                 | 14.66               |                     |          |  |  |       |       |       |
| 5                    | 64QAM      | 12      | 13        | 14.84              | 14.82                 | 14.51               |                     |          |  |  |       |       |       |
| 5                    | 64QAM      | 25      | 0         | 14.89              | 14.79                 | 14.54               | 16                  | 0        |  |  |       |       |       |
| Channel              |            |         |           |                    |                       |                     |                     |          |  |  | 18615 | 18800 | 19185 |
| Frequency (MHz)      |            |         |           |                    |                       |                     |                     |          |  |  | 18615 | 18800 | 19085 |
| 3                    | QPSK       | 1       | 0         | 15.29              | 15.11                 | 15.03               | 16                  | 0        |  |  |       |       |       |
| 3                    | QPSK       | 1       | 8         | 15.36              | 15.26                 | 15.06               |                     |          |  |  |       |       |       |
| 3                    | QPSK       | 1       | 14        | 15.21              | 15.19                 | 14.97               |                     |          |  |  |       |       |       |
| 3                    | QPSK       | 8       | 0         | 15.44              | 15.32                 | 15.02               |                     |          |  |  |       |       |       |
| 3                    | QPSK       | 8       | 4         | 15.44              | 15.28                 | 15.05               |                     |          |  |  |       |       |       |
| 3                    | QPSK       | 8       | 7         | 15.34              | 15.24                 | 15.07               | 16                  | 0        |  |  |       |       |       |
| 3                    | QPSK       | 15      | 0         | 15.39              | 15.33                 | 15.04               |                     |          |  |  |       |       |       |
| 3                    | 16QAM      | 1       | 0         | 15.23              | 15.15                 | 14.85               |                     |          |  |  |       |       |       |
| 3                    | 16QAM      | 1       | 8         | 15.11              | 15.24                 | 14.86               |                     |          |  |  |       |       |       |
| 3                    | 16QAM      | 1       | 14        | 14.96              | 15.04                 | 14.79               |                     |          |  |  |       |       |       |
| 3                    | 16QAM      | 8       | 0         | 14.96              | 14.90                 | 14.59               | 16                  | 0        |  |  |       |       |       |
| 3                    | 16QAM      | 8       | 4         | 15.00              | 14.84                 | 14.62               |                     |          |  |  |       |       |       |
| 3                    | 16QAM      | 8       | 7         | 14.91              | 14.81                 | 14.51               |                     |          |  |  |       |       |       |
| 3                    | 16QAM      | 15      | 0         | 14.95              | 14.77                 | 14.56               |                     |          |  |  |       |       |       |
| 3                    | 64QAM      | 1       | 0         | 14.95              | 14.79                 | 14.71               |                     |          |  |  |       |       |       |
| 3                    | 64QAM      | 1       | 8         | 14.85              | 14.99                 | 14.81               | 16                  | 0        |  |  |       |       |       |
| 3                    | 64QAM      | 1       | 14        | 14.79              | 14.65                 | 14.74               |                     |          |  |  |       |       |       |
| 3                    | 64QAM      | 8       | 0         | 15.08              | 14.63                 | 14.71               |                     |          |  |  |       |       |       |
| 3                    | 64QAM      | 8       | 4         | 14.99              | 14.66                 | 14.63               |                     |          |  |  |       |       |       |
| 3                    | 64QAM      | 8       | 7         | 15.01              | 14.64                 | 14.58               |                     |          |  |  |       |       |       |
| 3                    | 64QAM      | 15      | 0         | 14.90              | 14.66                 | 14.47               | 16                  | 0        |  |  |       |       |       |
| Channel              |            |         |           |                    |                       |                     |                     |          |  |  | 18607 | 18800 | 19193 |
| Frequency (MHz)      |            |         |           |                    |                       |                     |                     |          |  |  | 18607 | 18800 | 19093 |
| 1.4                  | QPSK       | 1       | 0         | 15.17              | 15.16                 | 14.86               | 16                  | 0        |  |  |       |       |       |
| 1.4                  | QPSK       | 1       | 3         | 15.23              | 15.15                 | 14.82               |                     |          |  |  |       |       |       |
| 1.4                  | QPSK       | 1       | 5         | 15.15              | 15.04                 | 14.86               |                     |          |  |  |       |       |       |
| 1.4                  | QPSK       | 3       | 0         | 15.19              | 15.08                 | 14.80               |                     |          |  |  |       |       |       |
| 1.4                  | QPSK       | 3       | 1         | 15.22              | 15.24                 | 14.94               |                     |          |  |  |       |       |       |
| 1.4                  | QPSK       | 3       | 3         | 15.20              | 15.12                 | 14.86               | 16                  | 0        |  |  |       |       |       |
| 1.4                  | QPSK       | 6       | 0         | 15.25              | 15.14                 | 14.82               |                     |          |  |  |       |       |       |
| 1.4                  | 16QAM      | 1       | 0         | 15.03              | 14.93                 | 14.95               |                     |          |  |  |       |       |       |
| 1.4                  | 16QAM      | 1       | 3         | 14.99              | 14.89                 | 14.82               |                     |          |  |  |       |       |       |
| 1.4                  | 16QAM      | 1       | 5         | 15.09              | 14.83                 | 14.83               |                     |          |  |  |       |       |       |
| 1.4                  | 16QAM      | 3       | 0         | 14.74              | 14.84                 | 14.44               | 16                  | 0        |  |  |       |       |       |
| 1.4                  | 16QAM      | 3       | 1         | 14.83              | 14.71                 | 14.54               |                     |          |  |  |       |       |       |
| 1.4                  | 16QAM      | 3       | 3         | 14.83              | 14.82                 | 14.42               |                     |          |  |  |       |       |       |
| 1.4                  | 64QAM      | 1       | 0         | 14.62              | 14.87                 | 14.64               |                     |          |  |  |       |       |       |
| 1.4                  | 64QAM      | 1       | 3         | 14.63              | 15.01                 | 14.54               |                     |          |  |  |       |       |       |
| 1.4                  | 64QAM      | 1       | 5         | 14.90              | 14.82                 | 14.52               | 16                  | 0        |  |  |       |       |       |
| 1.4                  | 64QAM      | 3       | 0         | 14.86              | 14.98                 | 14.51               |                     |          |  |  |       |       |       |
| 1.4                  | 64QAM      | 3       | 1         | 14.82              | 14.92                 | 14.54               |                     |          |  |  |       |       |       |
| 1.4                  | 64QAM      | 3       | 3         | 14.91              | 14.71                 | 14.44               |                     |          |  |  |       |       |       |
| 1.4                  | 64QAM      | 6       | 0         | 14.82              | 14.82                 | 14.40               |                     |          |  |  |       |       |       |

| Band 7 (2400MHz Band) |            |         |           |                      |                         |                       |                     |          |  |  |
|-----------------------|------------|---------|-----------|----------------------|-------------------------|-----------------------|---------------------|----------|--|--|
| Part 27               |            |         |           |                      |                         |                       |                     |          |  |  |
| BW (MHz)              | Modulation | RB Size | RB Offset | Power Low Co. (Freq) | Power Middle Co. (Freq) | Power High Co. (Freq) | Tune-up limit (dBm) | MPR (dB) |  |  |
| Channel               |            |         |           | 20850                | 21100                   | 21350                 |                     |          |  |  |
| Frequency (MHz)       |            |         |           | 2010                 | 2035                    | 2060                  |                     |          |  |  |
| 20                    | QPSK       | 1       | 0         | 13.16                | 13.17                   | 13.07                 | 14                  | 0        |  |  |
| 20                    | QPSK       | 1       | 48        | 13.09                | 13.09                   | 12.99                 |                     |          |  |  |
| 20                    | QPSK       | 1       | 96        | 13.07                | 13.01                   | 12.98                 |                     |          |  |  |
| 20                    | QPSK       | 50      | 0         | 13.07                | 13.24                   | 13.23                 |                     |          |  |  |
| 20                    | QPSK       | 50      | 24        | 13.23                | 13.23                   | 13.22                 |                     |          |  |  |
| 20                    | QPSK       | 50      | 60        | 13.15                | 13.15                   | 13.12                 | 14                  | 0        |  |  |
| 20                    | QPSK       | 100     | 0         | 13.06                | 13.13                   | 13.09                 |                     |          |  |  |
| 20                    | 16QAM      | 1       | 0         | 13.47                | 13.41                   | 13.36                 |                     |          |  |  |
| 20                    | 16QAM      | 1       | 48        | 13.53                | 13.46                   | 13.52                 |                     |          |  |  |
| 20                    | 16QAM      | 1       | 96        | 13.31                | 13.36                   | 13.47                 |                     |          |  |  |
| 20                    | 16QAM      | 50      | 0         | 13.21                | 13.24                   | 13.22                 | 14                  | 0        |  |  |
| 20                    | 16QAM      | 50      | 24        | 13.17                | 13.17                   | 13.19                 |                     |          |  |  |
| 20                    | 16QAM      | 50      | 50        | 13.18                | 13.21                   | 13.12                 |                     |          |  |  |
| 20                    | 16QAM      | 100     | 0         | 13.03                | 13.06                   | 13.14                 |                     |          |  |  |
| 20                    | 64QAM      | 1       | 0         | 13.47                | 13.40                   | 13.39                 |                     |          |  |  |
| 20                    | 64QAM      | 1       | 48        | 13.27                | 13.25                   | 13.23                 | 14                  | 0        |  |  |
| 20                    | 64QAM      | 1       | 96        | 13.25                | 13.18                   | 13.13                 |                     |          |  |  |
| 20                    | 64QAM      | 50      | 0         | 13.28                | 13.22                   | 13.25                 |                     |          |  |  |
| 20                    | 64QAM      | 50      | 24        | 13.24                | 13.18                   | 13.24                 |                     |          |  |  |
| 20                    | 64QAM      | 50      | 50        | 13.11                | 13.19                   | 13.13                 |                     |          |  |  |
| 20                    | 64QAM      | 100     | 0         | 13.13                | 13.15                   | 13.12                 | 14                  | 0        |  |  |
| Channel               |            |         |           | 20850                | 21100                   | 21350                 |                     |          |  |  |
| Frequency (MHz)       |            |         |           | 2027.5               | 2035                    | 2062.5                |                     |          |  |  |
| 15                    | QPSK       | 1       | 0         | 13.17                | 13.19                   | 13.12                 | 14                  | 0        |  |  |
| 15                    | QPSK       | 1       | 37        | 13.18                | 13.01                   | 13.05                 |                     |          |  |  |
| 15                    | QPSK       | 1       | 74        | 13.11                | 13.04                   | 13.01                 |                     |          |  |  |
| 15                    | QPSK       | 36      | 0         | 13.28                | 13.22                   | 13.27                 |                     |          |  |  |
| 15                    | QPSK       | 36      | 20        | 13.27                | 13.21                   | 13.19                 |                     |          |  |  |
| 15                    | QPSK       | 36      | 36        | 13.17                | 13.17                   | 13.14                 | 14                  | 0        |  |  |
| 15                    | QPSK       | 75      | 0         | 13.23                | 13.16                   | 13.16                 |                     |          |  |  |
| 15                    | 16QAM      | 1       | 0         | 13.53                | 13.50                   | 13.45                 |                     |          |  |  |
| 15                    | 16QAM      | 1       | 37        | 13.44                | 13.49                   | 13.36                 |                     |          |  |  |
| 15                    | 16QAM      | 1       | 74        | 13.39                | 13.38                   | 13.23                 |                     |          |  |  |
| 15                    | 16QAM      | 36      | 0         | 13.31                | 13.24                   | 13.24                 | 14                  | 0        |  |  |
| 15                    | 16QAM      | 36      | 20        | 13.30                | 13.17                   | 13.24                 |                     |          |  |  |
| 15                    | 16QAM      | 36      | 36        | 13.25                | 13.20                   | 13.18                 |                     |          |  |  |
| 15                    | 16QAM      | 75      | 0         | 13.28                | 13.11                   | 13.11                 |                     |          |  |  |
| 15                    | 64QAM      | 1       | 0         | 13.50                | 13.37                   | 13.34                 |                     |          |  |  |
| 15                    | 64QAM      | 1       | 37        | 13.36                | 13.37                   | 13.26                 | 14                  | 0        |  |  |
| 15                    | 64QAM      | 1       | 74        | 13.26                | 13.29                   | 13.19                 |                     |          |  |  |
| 15                    | 64QAM      | 36      | 0         | 13.30                | 13.30                   | 13.25                 |                     |          |  |  |
| 15                    | 64QAM      | 36      | 20        | 13.36                | 13.30                   | 13.28                 |                     |          |  |  |
| 15                    | 64QAM      | 36      | 36        | 13.27                | 13.23                   | 13.14                 |                     |          |  |  |
| 15                    | 64QAM      | 75      | 0         | 13.28                | 13.11                   | 13.10                 | 14                  | 0        |  |  |
| Channel               |            |         |           | 20850                | 21100                   | 21400                 |                     |          |  |  |
| Frequency (MHz)       |            |         |           | 2065                 | 2035                    | 2065                  |                     |          |  |  |
| 10                    | QPSK       | 1       | 0         | 13.25                | 13.21                   | 13.02                 | 14                  | 0        |  |  |
| 10                    | QPSK       | 1       | 25        | 13.23                | 13.12                   | 13.13                 |                     |          |  |  |
| 10                    | QPSK       | 1       | 49        | 13.14                | 13.07                   | 13.09                 |                     |          |  |  |
| 10                    | QPSK       | 25      | 0         | 13.29                | 13.25                   | 13.22                 |                     |          |  |  |
| 10                    | QPSK       | 25      | 12        | 13.28                | 13.22                   | 13.25                 |                     |          |  |  |
| 10                    | QPSK       | 25      | 25        | 13.28                | 13.15                   | 13.16                 | 14                  | 0        |  |  |
| 10                    | QPSK       | 50      | 0         | 13.25                | 13.14                   | 13.06                 |                     |          |  |  |
| 10                    | 16QAM      | 1       | 0         | 13.70                | 13.53                   | 13.53                 |                     |          |  |  |
| 10                    | 16QAM      | 1       | 25        | 13.54                | 13.56                   | 13.44                 |                     |          |  |  |
| 10                    | 16QAM      | 1       | 49        | 13.52                | 13.63                   | 13.59                 |                     |          |  |  |
| 10                    | 16QAM      | 25      | 0         | 13.36                | 13.21                   | 13.20                 | 14                  | 0        |  |  |
| 10                    | 16QAM      | 25      | 12        | 13.35                | 13.16                   | 13.23                 |                     |          |  |  |
| 10                    | 16QAM      | 25      | 25        | 13.24                | 13.20                   | 13.22                 |                     |          |  |  |
| 10                    | 16QAM      | 50      | 0         | 13.21                | 13.07                   | 13.12                 |                     |          |  |  |
| 10                    | 64QAM      | 1       | 0         | 13.63                | 13.34                   | 13.39                 |                     |          |  |  |
| 10                    | 64QAM      | 1       | 25        | 13.60                | 13.43                   | 13.34                 | 14                  | 0        |  |  |
| 10                    | 64QAM      | 1       | 49        | 13.32                | 13.33                   | 13.41                 |                     |          |  |  |
| 10                    | 64QAM      | 25      | 0         | 13.36                | 13.22                   | 13.20                 |                     |          |  |  |
| 10                    | 64QAM      | 25      | 12        | 13.34                | 13.21                   | 13.27                 |                     |          |  |  |
| 10                    | 64QAM      | 25      | 25        | 13.30                | 13.26                   | 13.16                 |                     |          |  |  |
| 10                    | 64QAM      | 50      | 0         | 13.15                | 13.04                   | 13.16                 | 14                  | 0        |  |  |
| Channel               |            |         |           | 2077.5               | 21100                   | 21425                 |                     |          |  |  |
| Frequency (MHz)       |            |         |           | 2027.5               | 2035                    | 2062.5                |                     |          |  |  |
| 5                     | QPSK       | 1       | 0         | 13.27                | 13.18                   | 13.16                 | 14                  | 0        |  |  |
| 5                     | QPSK       | 1       | 12        | 13.29                | 13.24                   | 13.06                 |                     |          |  |  |
| 5                     | QPSK       | 1       | 24        | 13.33                | 13.16                   | 13.12                 |                     |          |  |  |
| 5                     | QPSK       | 12      | 0         | 13.34                | 13.17                   | 13.13                 |                     |          |  |  |
| 5                     | QPSK       | 12      | 7         | 13.41                | 13.33                   | 13.25                 |                     |          |  |  |
| 5                     | QPSK       | 12      | 13        | 13.31                | 13.14                   | 13.21                 | 14                  | 0        |  |  |
| 5                     | QPSK       | 25      | 0         | 13.35                | 13.19                   | 13.16                 |                     |          |  |  |
| 5                     | 16QAM      | 1       | 0         | 13.74                | 13.61                   | 13.46                 |                     |          |  |  |
| 5                     | 16QAM      | 1       | 12        | 13.69                | 13.55                   | 13.57                 |                     |          |  |  |
| 5                     | 16QAM      | 1       | 24        | 13.59                | 13.56                   | 13.48                 |                     |          |  |  |
| 5                     | 16QAM      | 12      | 0         | 13.36                | 13.22                   | 13.18                 | 14                  | 0        |  |  |
| 5                     | 16QAM      | 12      | 7         | 13.45                | 13.27                   | 13.19                 |                     |          |  |  |
| 5                     | 16QAM      | 12      | 13        | 13.36                | 13.20                   | 13.15                 |                     |          |  |  |
| 5                     | 16QAM      | 25      | 0         | 13.36                | 13.14                   | 13.22                 |                     |          |  |  |
| 5                     | 64QAM      | 1       | 0         | 13.59                | 13.38                   | 13.50                 |                     |          |  |  |
| 5                     | 64QAM      | 1       | 12        | 13.55                | 13.43                   | 13.39                 | 14                  | 0        |  |  |
| 5                     | 64QAM      | 1       | 24        | 13.52                | 13.33                   | 13.34                 |                     |          |  |  |
| 5                     | 64QAM      | 12      | 0         | 13.33                | 13.26                   | 13.24                 |                     |          |  |  |
| 5                     | 64QAM      | 12      | 7         | 13.42                | 13.33                   | 13.31                 |                     |          |  |  |
| 5                     | 64QAM      | 12      | 13        | 13.38                | 13.30                   | 13.24                 |                     |          |  |  |
| 5                     | 64QAM      | 25      | 0         | 13.39                | 13.18                   | 13.20                 | 14                  | 0        |  |  |

| Band 26 for FCC            |            |         |           |                    |                       |                     |                     |          |    |   |  |  |
|----------------------------|------------|---------|-----------|--------------------|-----------------------|---------------------|---------------------|----------|----|---|--|--|
| (only on channel required) |            |         |           |                    |                       |                     |                     |          |    |   |  |  |
| BW (MHz)                   | Modulation | RB Size | RB Offset | Power Low Ch./Freq | Power Middle Ch./Freq | Power High Ch./Freq | Tune-up limit (dBm) | MPR (dB) |    |   |  |  |
| Channel                    |            |         |           | 26705              | 26865                 | 26965               |                     |          |    |   |  |  |
| Frequency (MHz)            |            |         |           | 821.5              | 831.5                 | 841.5               |                     |          |    |   |  |  |
| 15                         | QPSK       | 1       | 0         | 22.40              | 22.29                 | 22.10               | 23                  | 0        |    |   |  |  |
| 15                         | QPSK       | 1       | 37        | 22.29              | 22.21                 | 21.86               |                     |          |    |   |  |  |
| 15                         | QPSK       | 1       | 74        | 22.22              | 22.07                 | 22.03               |                     |          |    |   |  |  |
| 15                         | QPSK       | 36      | 0         | 21.60              | 21.54                 | 21.38               |                     |          |    |   |  |  |
| 15                         | QPSK       | 36      | 20        | 21.05              | 21.09                 | 21.40               |                     |          |    |   |  |  |
| 15                         | QPSK       | 36      | 39        | 21.53              | 21.46                 | 21.30               | 23                  | 0        |    |   |  |  |
| 15                         | QPSK       | 75      | 0         | 21.64              | 21.51                 | 21.33               |                     |          |    |   |  |  |
| 15                         | 16QAM      | 1       | 0         | 22.01              | 21.91                 | 21.73               |                     |          |    |   |  |  |
| 15                         | 16QAM      | 1       | 37        | 21.90              | 21.86                 | 21.81               |                     |          |    |   |  |  |
| 15                         | 16QAM      | 1       | 74        | 21.82              | 21.66                 | 21.55               |                     |          |    |   |  |  |
| 15                         | 16QAM      | 36      | 0         | 20.81              | 20.71                 | 20.59               | 22                  | 1        |    |   |  |  |
| 15                         | 16QAM      | 36      | 20        | 20.92              | 20.78                 | 20.59               |                     |          |    |   |  |  |
| 15                         | 16QAM      | 36      | 39        | 20.83              | 20.67                 | 20.59               |                     |          |    |   |  |  |
| 15                         | 16QAM      | 75      | 0         | 20.88              | 20.72                 | 20.56               |                     |          |    |   |  |  |
| 15                         | 64QAM      | 1       | 0         | 21.42              | 21.32                 | 21.39               |                     |          |    |   |  |  |
| 15                         | 64QAM      | 1       | 37        | 21.25              | 21.26                 | 20.94               | 22                  | 1        |    |   |  |  |
| 15                         | 64QAM      | 1       | 74        | 21.23              | 21.03                 | 20.93               |                     |          |    |   |  |  |
| 15                         | 64QAM      | 36      | 0         | 20.34              | 20.24                 | 20.10               | 21                  | 2        |    |   |  |  |
| 15                         | 64QAM      | 36      | 20        | 20.41              | 20.28                 | 20.09               |                     |          |    |   |  |  |
| 15                         | 64QAM      | 36      | 39        | 20.30              | 20.15                 | 20.05               |                     |          |    |   |  |  |
| 15                         | 64QAM      | 75      | 0         | 20.36              | 20.21                 | 20.06               |                     |          |    |   |  |  |
| Channel                    |            |         |           | 26740              | 26895                 | 26990               |                     |          |    |   |  |  |
| Frequency (MHz)            |            |         |           | 819                | 831.5                 | 844                 |                     |          |    |   |  |  |
| 10                         | QPSK       | 1       | 0         | 22.51              | 22.32                 | 22.10               | 23                  | 0        |    |   |  |  |
| 10                         | QPSK       | 1       | 25        | 22.39              | 22.27                 | 22.13               |                     |          |    |   |  |  |
| 10                         | QPSK       | 1       | 49        | 22.40              | 22.15                 | 22.10               |                     |          |    |   |  |  |
| 10                         | QPSK       | 25      | 0         | 21.74              | 21.56                 | 21.32               |                     |          |    |   |  |  |
| 10                         | QPSK       | 25      | 12        | 21.82              | 21.62                 | 21.40               |                     |          |    |   |  |  |
| 10                         | QPSK       | 25      | 25        | 21.73              | 21.55                 | 21.32               | 23                  | 0        |    |   |  |  |
| 10                         | QPSK       | 50      | 0         | 21.74              | 21.55                 | 21.32               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 1       | 0         | 22.15              | 22.00                 | 21.73               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 1       | 25        | 22.05              | 21.95                 | 21.71               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 1       | 49        | 21.99              | 21.83                 | 21.71               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 25      | 0         | 20.69              | 20.76                 | 20.66               | 22                  | 1        |    |   |  |  |
| 10                         | 16QAM      | 25      | 12        | 21.07              | 20.85                 | 20.83               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 25      | 25        | 20.93              | 20.71                 | 20.59               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 50      | 0         | 20.97              | 20.74                 | 20.50               |                     |          |    |   |  |  |
| 10                         | 16QAM      | 50      | 0         | 21.69              | 21.50                 | 21.22               |                     |          |    |   |  |  |
| 10                         | 64QAM      | 1       | 25        | 21.54              | 21.45                 | 21.23               | 22                  | 1        |    |   |  |  |
| 10                         | 64QAM      | 1       | 49        | 21.51              | 21.34                 | 21.24               |                     |          |    |   |  |  |
| 10                         | 64QAM      | 25      | 0         | 20.46              | 20.21                 | 20.13               |                     |          |    |   |  |  |
| 10                         | 64QAM      | 25      | 12        | 20.58              | 20.39                 | 20.11               |                     |          |    |   |  |  |
| 10                         | 64QAM      | 25      | 25        | 20.46              | 20.25                 | 20.15               |                     |          |    |   |  |  |
| 10                         | 64QAM      | 50      | 0         | 20.44              | 20.26                 | 20.04               | 21                  | 2        |    |   |  |  |
| Channel                    |            |         |           | 26715              | 26865                 | 27015               |                     |          |    |   |  |  |
| Frequency (MHz)            |            |         |           | 816.5              | 831.5                 | 846.5               |                     |          |    |   |  |  |
| 5                          | QPSK       | 1       | 0         | 22.46              | 22.28                 | 22.00               |                     |          | 23 | 0 |  |  |
| 5                          | QPSK       | 1       | 12        | 22.49              | 22.23                 | 21.99               |                     |          |    |   |  |  |
| 5                          | QPSK       | 1       | 24        | 22.43              | 22.25                 | 22.01               |                     |          |    |   |  |  |
| 5                          | QPSK       | 12      | 0         | 21.89              | 21.67                 | 21.44               |                     |          |    |   |  |  |
| 5                          | QPSK       | 12      | 7         | 21.92              | 21.70                 | 21.46               |                     |          |    |   |  |  |
| 5                          | QPSK       | 12      | 13        | 21.87              | 21.62                 | 21.44               | 23                  | 0        |    |   |  |  |
| 5                          | QPSK       | 25      | 0         | 21.87              | 21.64                 | 21.67               |                     |          |    |   |  |  |
| 5                          | 16QAM      | 1       | 0         | 22.09              | 21.97                 | 21.61               |                     |          |    |   |  |  |
| 5                          | 16QAM      | 1       | 12        | 22.14              | 21.96                 | 21.70               |                     |          |    |   |  |  |
| 5                          | 16QAM      | 1       | 24        | 22.05              | 21.85                 | 21.73               |                     |          |    |   |  |  |
| 5                          | 16QAM      | 12      | 7         | 21.13              | 20.87                 | 20.89               | 22                  | 1        |    |   |  |  |
| 5                          | 16QAM      | 12      | 13        | 21.09              | 20.87                 | 20.87               |                     |          |    |   |  |  |
| 5                          | 16QAM      | 25      | 0         | 21.10              | 20.87                 | 20.88               |                     |          |    |   |  |  |
| 5                          | 16QAM      | 25      | 0         | 21.49              | 21.36                 | 21.35               |                     |          |    |   |  |  |
| 5                          | 64QAM      | 1       | 12        | 21.61              | 21.42                 | 21.39               |                     |          |    |   |  |  |
| 5                          | 64QAM      | 1       | 24        | 21.48              | 21.31                 | 21.30               | 22                  | 1        |    |   |  |  |
| 5                          | 64QAM      | 12      | 0         | 20.60              | 20.36                 | 20.16               |                     |          |    |   |  |  |
| 5                          | 64QAM      | 12      | 7         | 20.62              | 20.37                 | 20.27               |                     |          |    |   |  |  |
| 5                          | 64QAM      | 12      | 13        | 20.56              | 20.37                 | 20.35               |                     |          |    |   |  |  |
| 5                          | 64QAM      | 25      | 0         | 20.57              | 20.36                 | 20.21               |                     |          |    |   |  |  |
| Channel                    |            |         |           | 26697              | 26855                 | 27023               |                     |          |    |   |  |  |
| Frequency (MHz)            |            |         |           | 814.7              | 831.5                 | 848.3               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 1       | 0         | 22.48              | 22.32                 | 22.20               | 23                  | 0        |    |   |  |  |
| 1.4                        | QPSK       | 1       | 8         | 22.50              | 22.38                 | 22.29               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 1       | 14        | 22.46              | 22.27                 | 22.12               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 8       | 0         | 21.90              | 21.66                 | 21.56               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 8       | 7         | 21.96              | 21.74                 | 21.53               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 8       | 7         | 21.92              | 21.67                 | 21.65               | 23                  | 0        |    |   |  |  |
| 1.4                        | QPSK       | 16      | 0         | 21.50              | 21.36                 | 21.67               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 1       | 0         | 22.13              | 21.93                 | 21.94               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 1       | 8         | 22.20              | 22.02                 | 22.08               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 1       | 14        | 22.11              | 21.92                 | 21.93               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 8       | 0         | 21.16              | 20.94                 | 20.94               | 22                  | 1        |    |   |  |  |
| 1.4                        | 16QAM      | 8       | 7         | 21.20              | 20.99                 | 21.91               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 8       | 7         | 21.16              | 20.93                 | 20.96               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 16      | 0         | 21.15              | 20.93                 | 20.93               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 1       | 0         | 21.56              | 21.34                 | 21.46               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 1       | 8         | 21.63              | 21.46                 | 21.47               | 22                  | 1        |    |   |  |  |
| 1.4                        | 64QAM      | 1       | 14        | 21.54              | 21.29                 | 21.32               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 8       | 0         | 20.64              | 20.39                 | 20.41               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 8       | 7         | 20.64              | 20.44                 | 20.45               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 8       | 7         | 20.60              | 20.37                 | 20.39               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 15      | 0         | 20.67              | 20.36                 | 20.37               | 21                  | 2        |    |   |  |  |
| Channel                    |            |         |           | 26697              | 26855                 | 27023               |                     |          |    |   |  |  |
| Frequency (MHz)            |            |         |           | 814.7              | 831.5                 | 848.3               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 1       | 0         | 22.48              | 22.24                 | 22.02               |                     |          | 23 | 0 |  |  |
| 1.4                        | QPSK       | 1       | 3         | 22.51              | 22.32                 | 22.13               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 1       | 5         | 22.45              | 22.25                 | 22.15               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 3       | 0         | 22.46              | 22.29                 | 22.17               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 3       | 1         | 22.53              | 22.35                 | 22.18               |                     |          |    |   |  |  |
| 1.4                        | QPSK       | 3       | 3         | 22.50              | 22.27                 | 22.17               | 23                  | 0        |    |   |  |  |
| 1.4                        | QPSK       | 6       | 0         | 21.85              | 21.68                 | 21.70               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 1       | 3         | 22.05              | 21.85                 | 21.89               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 1       | 3         | 22.12              | 21.95                 | 21.96               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 3       | 0         | 22.04              | 21.89                 | 21.92               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 3       | 1         | 22.00              | 21.69                 | 21.73               | 23                  | 0        |    |   |  |  |
| 1.4                        | 16QAM      | 3       | 1         | 21.93              | 21.73                 | 21.77               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 3       | 3         | 21.88              | 21.67                 | 21.79               |                     |          |    |   |  |  |
| 1.4                        | 16QAM      | 6       | 0         | 21.15              | 20.93                 | 20.97               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 1       | 3         | 21.53              | 21.32                 | 21.39               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 1       | 3         | 21.58              | 21.33                 | 21.37               | 22                  | 1        |    |   |  |  |
| 1.4                        | 64QAM      | 3       | 0         | 21.51              | 21.31                 | 21.36               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 3       | 1         | 21.36              | 21.16                 | 21.23               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 3       | 1         | 21.47              | 21.24                 | 21.24               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 3       | 3         | 21.47              | 21.18                 | 21.30               |                     |          |    |   |  |  |
| 1.4                        | 64QAM      | 6       | 0         | 20.55              | 20.35                 | 20.39               | 21                  | 2        |    |   |  |  |

| Band 38(only on channel required) |            |         |           |                                     |                        |                      |                     |          |  |
|-----------------------------------|------------|---------|-----------|-------------------------------------|------------------------|----------------------|---------------------|----------|--|
| BW (MHz)                          | Modulation | RB Size | RB Offset | Power Low Ch./Freq.                 | Power Middle Ch./Freq. | Power High Ch./Freq. | Tune-up limit (dBm) | MPR (dB) |  |
| Channel Frequency (MHz)           |            |         |           | 37650                               | 38050                  | 38100                |                     |          |  |
| 20                                | QPSK       | 1       | 0         | 15.86                               | 15.78                  | 15.86                | 17                  | 0        |  |
| 20                                | QPSK       | 1       | 49        | 15.80                               | 15.76                  | 15.79                |                     |          |  |
| 20                                | QPSK       | 1       | 99        | 15.73                               | 15.73                  | 15.80                |                     |          |  |
| 20                                | QPSK       | 50      | 0         | 15.70                               | 15.67                  | 15.73                |                     |          |  |
| 20                                | QPSK       | 50      | 24        | 15.86                               | 15.86                  | 15.83                | 17                  | 0        |  |
| 20                                | QPSK       | 50      | 50        | 15.72                               | 15.75                  | 15.77                |                     |          |  |
| 20                                | QPSK       | 100     | 0         | 15.79                               | 15.77                  | 15.69                |                     |          |  |
| 20                                | 16QAM      | 1       | 0         | 16.02                               | 16.04                  | 15.98                |                     |          |  |
| 20                                | 16QAM      | 1       | 49        | 15.94                               | 15.91                  | 15.92                | 17                  | 0        |  |
| 20                                | 16QAM      | 1       | 99        | 15.86                               | 15.86                  | 15.89                |                     |          |  |
| 20                                | 16QAM      | 50      | 0         | 15.73                               | 15.78                  | 15.71                |                     |          |  |
| 20                                | 16QAM      | 50      | 24        | 15.88                               | 15.90                  | 15.89                |                     |          |  |
| 20                                | 16QAM      | 50      | 50        | 15.78                               | 15.80                  | 15.81                | 17                  | 0        |  |
| 20                                | 16QAM      | 100     | 0         | 15.76                               | 15.82                  | 15.72                |                     |          |  |
| 20                                | 64QAM      | 1       | 0         | 15.99                               | 15.63                  | 15.61                |                     |          |  |
| 20                                | 64QAM      | 1       | 49        | 15.51                               | 15.57                  | 15.64                |                     |          |  |
| 20                                | 64QAM      | 1       | 99        | 15.48                               | 15.49                  | 15.53                | 17                  | 0        |  |
| 20                                | 64QAM      | 50      | 0         | 15.74                               | 15.76                  | 15.80                |                     |          |  |
| 20                                | 64QAM      | 50      | 24        | 15.87                               | 15.87                  | 15.85                |                     |          |  |
| 20                                | 64QAM      | 50      | 50        | 15.74                               | 15.74                  | 15.79                |                     |          |  |
| 20                                | 64QAM      | 100     | 0         | 15.76                               | 15.77                  | 15.75                | 17                  | 0        |  |
| Channel Frequency (MHz)           |            |         |           | 37625                               | 38050                  | 38115                |                     |          |  |
| 15                                | QPSK       | 1       | 0         | 15.78                               | 15.81                  | 15.90                | 17                  | 0        |  |
| 15                                | QPSK       | 1       | 37        | 15.77                               | 15.75                  | 15.81                |                     |          |  |
| 15                                | QPSK       | 1       | 74        | 15.66                               | 15.69                  | 15.73                |                     |          |  |
| 15                                | QPSK       | 36      | 0         | 15.77                               | 15.73                  | 15.77                |                     |          |  |
| 15                                | QPSK       | 36      | 20        | 15.85                               | 15.87                  | 15.80                | 17                  | 0        |  |
| 15                                | QPSK       | 36      | 39        | 15.74                               | 15.73                  | 15.79                |                     |          |  |
| 15                                | QPSK       | 75      | 0         | 15.77                               | 15.78                  | 15.72                |                     |          |  |
| 15                                | 16QAM      | 1       | 0         | 15.98                               | 15.97                  | 15.05                |                     |          |  |
| 15                                | 16QAM      | 1       | 37        | 15.95                               | 15.90                  | 15.90                | 17                  | 0        |  |
| 15                                | 16QAM      | 1       | 74        | 15.93                               | 15.92                  | 15.95                |                     |          |  |
| 15                                | 16QAM      | 36      | 0         | 15.74                               | 15.69                  | 15.75                |                     |          |  |
| 15                                | 16QAM      | 36      | 20        | 15.83                               | 15.84                  | 15.81                |                     |          |  |
| 15                                | 16QAM      | 36      | 39        | 15.75                               | 15.76                  | 15.78                | 17                  | 0        |  |
| 15                                | 16QAM      | 75      | 0         | 15.80                               | 15.81                  | 15.77                |                     |          |  |
| 15                                | 64QAM      | 1       | 0         | 15.98                               | 15.86                  | 15.55                |                     |          |  |
| 15                                | 64QAM      | 1       | 37        | 15.48                               | 15.57                  | 15.61                |                     |          |  |
| 15                                | 64QAM      | 1       | 74        | 15.44                               | 15.54                  | 15.55                | 17                  | 0        |  |
| 15                                | 64QAM      | 36      | 0         | 15.80                               | 15.74                  | 15.79                |                     |          |  |
| 15                                | 64QAM      | 36      | 20        | 15.89                               | 15.88                  | 15.84                |                     |          |  |
| 15                                | 64QAM      | 36      | 39        | 15.76                               | 15.81                  | 15.81                |                     |          |  |
| 15                                | 64QAM      | 75      | 0         | 15.81                               | 15.82                  | 15.77                | 17                  | 0        |  |
| Channel Frequency (MHz)           |            |         |           | 37650                               | 38050                  | 38050                |                     |          |  |
| 10                                | QPSK       | 1       | 0         | 15.39                               | 15.74                  | 15.81                | 17                  | 0        |  |
| 10                                | QPSK       | 1       | 25        | 15.73                               | 15.76                  | 15.79                |                     |          |  |
| 10                                | QPSK       | 1       | 49        | 15.42                               | 15.71                  | 15.75                |                     |          |  |
| 10                                | QPSK       | 25      | 0         | 15.78                               | 15.72                  | 15.73                |                     |          |  |
| 10                                | QPSK       | 25      | 12        | 15.83                               | 15.90                  | 15.77                | 17                  | 0        |  |
| 10                                | QPSK       | 25      | 25        | 15.80                               | 15.79                  | 15.83                |                     |          |  |
| 10                                | QPSK       | 50      | 0         | 15.77                               | 15.84                  | 15.72                |                     |          |  |
| 10                                | 16QAM      | 1       | 0         | 15.61                               | 15.99                  | 16.04                |                     |          |  |
| 10                                | 16QAM      | 1       | 25        | 15.90                               | 15.87                  | 15.93                | 17                  | 0        |  |
| 10                                | 16QAM      | 1       | 49        | 15.54                               | 15.87                  | 15.93                |                     |          |  |
| 10                                | 16QAM      | 25      | 0         | 15.79                               | 15.69                  | 15.72                |                     |          |  |
| 10                                | 16QAM      | 25      | 12        | 15.91                               | 15.92                  | 15.82                |                     |          |  |
| 10                                | 16QAM      | 25      | 25        | 15.72                               | 15.75                  | 15.82                | 17                  | 0        |  |
| 10                                | 16QAM      | 50      | 0         | 15.90                               | 15.78                  | 15.76                |                     |          |  |
| 10                                | 64QAM      | 1       | 0         | 15.27                               | 15.58                  | 15.63                |                     |          |  |
| 10                                | 64QAM      | 1       | 25        | 15.56                               | 15.60                  | 15.65                |                     |          |  |
| 10                                | 64QAM      | 1       | 49        | 15.19                               | 15.53                  | 15.60                | 17                  | 0        |  |
| 10                                | 64QAM      | 25      | 0         | 15.79                               | 15.68                  | 15.78                |                     |          |  |
| 10                                | 64QAM      | 25      | 12        | 15.96                               | 15.91                  | 15.85                |                     |          |  |
| 10                                | 64QAM      | 25      | 25        | 15.75                               | 15.77                  | 15.79                |                     |          |  |
| 10                                | 64QAM      | 50      | 0         | 15.77                               | 15.82                  | 15.77                | 17                  | 0        |  |
| Channel Frequency (MHz)           |            |         |           | 37775 <th>38050</th> <th>38225</th> | 38050                  | 38225                |                     |          |  |
| 5                                 | QPSK       | 1       | 0         | 15.72                               | 15.67                  | 15.78                | 17                  | 0        |  |
| 5                                 | QPSK       | 1       | 12        | 15.77                               | 15.76                  | 15.81                |                     |          |  |
| 5                                 | QPSK       | 1       | 24        | 15.65                               | 15.72                  | 15.71                |                     |          |  |
| 5                                 | QPSK       | 12      | 0         | 15.82                               | 15.80                  | 15.88                |                     |          |  |
| 5                                 | QPSK       | 12      | 7         | 15.89                               | 15.87                  | 15.94                | 17                  | 0        |  |
| 5                                 | QPSK       | 12      | 13        | 15.85                               | 15.88                  | 15.88                |                     |          |  |
| 5                                 | QPSK       | 25      | 0         | 15.84                               | 15.83                  | 15.91                |                     |          |  |
| 5                                 | 16QAM      | 1       | 0         | 15.85                               | 15.80                  | 15.87                |                     |          |  |
| 5                                 | 16QAM      | 1       | 12        | 15.95                               | 16.01                  | 16.03                | 17                  | 0        |  |
| 5                                 | 16QAM      | 1       | 24        | 15.85                               | 15.89                  | 15.94                |                     |          |  |
| 5                                 | 16QAM      | 12      | 0         | 15.82                               | 15.74                  | 15.86                |                     |          |  |
| 5                                 | 16QAM      | 12      | 7         | 15.82                               | 15.82                  | 15.87                |                     |          |  |
| 5                                 | 16QAM      | 12      | 13        | 15.79                               | 15.81                  | 15.80                | 17                  | 0        |  |
| 5                                 | 16QAM      | 25      | 0         | 15.84                               | 15.83                  | 15.90                |                     |          |  |
| 5                                 | 64QAM      | 1       | 0         | 15.55                               | 15.44                  | 15.52                |                     |          |  |
| 5                                 | 64QAM      | 1       | 12        | 15.49                               | 15.52                  | 15.57                |                     |          |  |
| 5                                 | 64QAM      | 1       | 24        | 15.47                               | 15.54                  | 15.59                | 17                  | 0        |  |
| 5                                 | 64QAM      | 12      | 0         | 15.88                               | 15.80                  | 15.90                |                     |          |  |
| 5                                 | 64QAM      | 12      | 7         | 15.89                               | 15.90                  | 15.96                |                     |          |  |
| 5                                 | 64QAM      | 12      | 13        | 15.87                               | 15.87                  | 15.91                |                     |          |  |
| 5                                 | 64QAM      | 25      | 0         | 15.86                               | 15.89                  | 15.93                | 17                  | 0        |  |

| Band 41 (2.6G Band)     |            |         |           |                    |                           |                       |                            |                     |                     |          |
|-------------------------|------------|---------|-----------|--------------------|---------------------------|-----------------------|----------------------------|---------------------|---------------------|----------|
| BW (MHz)                | Modulation | RB Size | RB Offset | Power Low Ch./Freq | Power Low Middle Ch./Freq | Power Middle Ch./Freq | Power High Middle Ch./Freq | Power High Ch./Freq | Turn-up limit (dBm) | MPR (dB) |
| Channel Frequency (MHz) |            |         |           | 39750              | 40100                     | 40200                 | 41005                      | 41400               |                     |          |
| 20                      | QPSK       | 1       | 0         | 15.95              | 15.83                     | 16.12                 | 15.85                      | 15.90               | 17                  | 0        |
| 20                      | QPSK       | 1       | 49        | 15.92              | 15.88                     | 15.90                 | 16.11                      | 16.11               |                     |          |
| 20                      | QPSK       | 1       | 99        | 15.91              | 15.81                     | 15.81                 | 15.85                      | 16.03               |                     |          |
| 20                      | QPSK       | 50      | 0         | 15.97              | 15.93                     | 16.21                 | 16.11                      | 16.21               |                     |          |
| 20                      | QPSK       | 50      | 24        | 15.93              | 15.91                     | 15.97                 | 16.02                      | 16.03               | 17                  | 0        |
| 20                      | QPSK       | 50      | 50        | 15.92              | 15.90                     | 15.94                 | 16.06                      | 16.24               |                     |          |
| 20                      | QPSK       | 100     | 0         | 15.85              | 15.84                     | 16.09                 | 16.02                      | 16.01               |                     |          |
| 20                      | 16QAM      | 1       | 0         | 16.09              | 15.99                     | 15.98                 | 16.01                      | 16.08               |                     |          |
| 20                      | 16QAM      | 1       | 49        | 15.98              | 15.95                     | 16.02                 | 16.23                      | 16.21               | 17                  | 0        |
| 20                      | 16QAM      | 1       | 99        | 15.96              | 15.92                     | 15.90                 | 16.02                      | 16.40               |                     |          |
| 20                      | 16QAM      | 50      | 0         | 16.00              | 15.92                     | 15.95                 | 16.06                      | 16.24               |                     |          |
| 20                      | 16QAM      | 50      | 24        | 15.94              | 15.91                     | 16.03                 | 16.22                      | 16.39               |                     |          |
| 20                      | 16QAM      | 50      | 50        | 15.91              | 15.89                     | 15.91                 | 16.04                      | 16.26               | 17                  | 0        |
| 20                      | 16QAM      | 100     | 0         | 15.86              | 15.79                     | 15.92                 | 16.11                      | 16.23               |                     |          |
| 20                      | 64QAM      | 1       | 0         | 15.65              | 15.54                     | 15.48                 | 15.54                      | 15.65               |                     |          |
| 20                      | 64QAM      | 1       | 49        | 15.85              | 15.44                     | 15.67                 | 15.66                      | 15.81               |                     |          |
| 20                      | 64QAM      | 1       | 99        | 15.52              | 15.42                     | 15.46                 | 15.49                      | 15.61               | 17                  | 0        |
| 20                      | 64QAM      | 50      | 0         | 16.04              | 15.88                     | 15.87                 | 16.09                      | 16.24               |                     |          |
| 20                      | 64QAM      | 50      | 24        | 15.94              | 15.88                     | 16.02                 | 16.22                      | 16.37               |                     |          |
| 20                      | 64QAM      | 50      | 50        | 15.90              | 15.89                     | 15.91                 | 16.06                      | 16.24               |                     |          |
| 20                      | 64QAM      | 100     | 0         | 15.98              | 16.03                     | 16.21                 | 16.06                      | 16.32               |                     |          |
| Channel Frequency (MHz) |            |         |           | 39755              | 40173                     | 40900                 | 41009                      | 41515               | Turn-up limit (dBm) | MPR (dB) |
| 15                      | QPSK       | 1       | 0         | 15.87              | 15.75                     | 15.76                 | 16.00                      | 16.03               | 17                  | 0        |
| 15                      | QPSK       | 1       | 37        | 15.89              | 15.83                     | 15.80                 | 16.10                      | 16.26               |                     |          |
| 15                      | QPSK       | 1       | 74        | 15.76              | 15.85                     | 15.77                 | 15.85                      | 16.06               |                     |          |
| 15                      | QPSK       | 36      | 0         | 15.95              | 15.82                     | 15.88                 | 16.05                      | 16.24               |                     |          |
| 15                      | QPSK       | 36      | 20        | 15.94              | 15.82                     | 15.97                 | 16.16                      | 16.27               | 17                  | 0        |
| 15                      | QPSK       | 36      | 39        | 15.82              | 15.81                     | 15.90                 | 16.10                      | 16.27               |                     |          |
| 15                      | QPSK       | 75      | 0         | 15.83              | 15.80                     | 15.93                 | 16.09                      | 16.23               |                     |          |
| 15                      | 16QAM      | 1       | 0         | 16.02              | 15.96                     | 15.99                 | 16.09                      | 16.24               |                     |          |
| 15                      | 16QAM      | 1       | 37        | 16.01              | 15.97                     | 16.01                 | 16.23                      | 16.37               | 17                  | 0        |
| 15                      | 16QAM      | 1       | 74        | 15.96              | 15.88                     | 15.94                 | 15.99                      | 16.26               |                     |          |
| 15                      | 16QAM      | 36      | 0         | 15.96              | 15.76                     | 15.81                 | 16.02                      | 16.24               |                     |          |
| 15                      | 16QAM      | 36      | 20        | 15.89              | 15.77                     | 15.98                 | 16.12                      | 16.23               |                     |          |
| 15                      | 16QAM      | 36      | 39        | 15.79              | 15.82                     | 15.88                 | 16.05                      | 16.24               | 17                  | 0        |
| 15                      | 16QAM      | 75      | 0         | 15.92              | 15.74                     | 15.93                 | 16.06                      | 16.21               |                     |          |
| 15                      | 16QAM      | 1       | 0         | 15.62              | 15.39                     | 15.39                 | 15.68                      | 15.89               |                     |          |
| 15                      | 64QAM      | 1       | 37        | 15.62              | 15.46                     | 15.60                 | 15.79                      | 15.88               |                     |          |
| 15                      | 64QAM      | 1       | 74        | 15.59              | 15.47                     | 15.52                 | 15.49                      | 15.76               | 17                  | 0        |
| 15                      | 64QAM      | 36      | 0         | 15.97              | 15.83                     | 15.93                 | 16.04                      | 16.24               |                     |          |
| 15                      | 64QAM      | 36      | 20        | 15.87              | 15.86                     | 15.86                 | 16.17                      | 16.28               |                     |          |
| 15                      | 64QAM      | 36      | 39        | 15.96              | 15.88                     | 15.91                 | 16.07                      | 16.26               |                     |          |
| 15                      | 64QAM      | 75      | 0         | 15.90              | 15.76                     | 15.96                 | 16.11                      | 16.23               |                     |          |
| Channel Frequency (MHz) |            |         |           | 39700              | 40160                     | 40500                 | 41080                      | 41540               | Turn-up limit (dBm) | MPR (dB) |
| 10                      | QPSK       | 1       | 0         | 15.81              | 15.47                     | 15.93                 | 16.09                      | 16.06               | 17                  | 0        |
| 10                      | QPSK       | 1       | 25        | 15.83              | 15.73                     | 15.75                 | 15.86                      | 15.91               |                     |          |
| 10                      | QPSK       | 1       | 49        | 15.87              | 15.75                     | 15.78                 | 15.81                      | 15.86               |                     |          |
| 10                      | QPSK       | 25      | 0         | 16.02              | 15.97                     | 15.98                 | 16.04                      | 16.33               |                     |          |
| 10                      | QPSK       | 25      | 12        | 16.03              | 15.90                     | 16.07                 | 16.14                      | 16.39               | 17                  | 0        |
| 10                      | QPSK       | 25      | 19        | 15.97              | 15.93                     | 15.93                 | 16.16                      | 16.24               |                     |          |
| 10                      | QPSK       | 0       | 15.92     | 15.81              | 15.99                     | 16.09                 | 16.09                      | 16.27               |                     |          |
| 10                      | 16QAM      | 1       | 0         | 16.06              | 15.97                     | 15.98                 | 16.01                      | 16.22               |                     |          |
| 10                      | 16QAM      | 1       | 25        | 16.00              | 15.90                     | 16.04                 | 16.25                      | 16.40               | 17                  | 0        |
| 10                      | 16QAM      | 1       | 49        | 15.92              | 15.91                     | 15.93                 | 16.08                      | 16.11               |                     |          |
| 10                      | 16QAM      | 25      | 0         | 16.00              | 15.99                     | 15.99                 | 16.05                      | 16.32               |                     |          |
| 10                      | 16QAM      | 25      | 12        | 16.00              | 15.95                     | 16.08                 | 16.18                      | 16.41               |                     |          |
| 10                      | 16QAM      | 25      | 25        | 15.97              | 15.92                     | 15.91                 | 16.13                      | 16.27               | 17                  | 0        |
| 10                      | 16QAM      | 50      | 0         | 15.93              | 15.88                     | 15.97                 | 16.06                      | 16.33               |                     |          |
| 10                      | 64QAM      | 1       | 0         | 15.75              | 15.65                     | 15.75                 | 15.66                      | 15.83               |                     |          |
| 10                      | 64QAM      | 1       | 25        | 15.76              | 15.67                     | 15.74                 | 15.99                      | 16.13               |                     |          |
| 10                      | 64QAM      | 1       | 49        | 15.60              | 15.99                     | 15.74                 | 15.67                      | 15.78               | 17                  | 0        |
| 10                      | 64QAM      | 25      | 0         | 16.03              | 15.96                     | 15.95                 | 16.13                      | 16.34               |                     |          |
| 10                      | 64QAM      | 25      | 12        | 16.01              | 15.96                     | 16.11                 | 16.23                      | 16.44               |                     |          |
| 10                      | 64QAM      | 25      | 25        | 16.04              | 15.99                     | 15.96                 | 16.12                      | 16.29               |                     |          |
| 10                      | 64QAM      | 50      | 0         | 15.94              | 15.80                     | 15.96                 | 16.13                      | 16.30               |                     |          |
| Channel Frequency (MHz) |            |         |           | 29873              | 30112                     | 30500                 | 30513                      | 30975               | Turn-up limit (dBm) | MPR (dB) |
| 5                       | QPSK       | 1       | 0         | 15.93              | 15.78                     | 15.83                 | 16.07                      | 16.26               | 17                  | 0        |
| 5                       | QPSK       | 1       | 12        | 15.87              | 15.76                     | 15.90                 | 16.11                      | 16.21               |                     |          |
| 5                       | QPSK       | 1       | 24        | 15.83              | 15.77                     | 15.86                 | 16.10                      | 16.21               |                     |          |
| 5                       | QPSK       | 1       | 49        | 16.03              | 15.96                     | 15.86                 | 16.16                      | 16.38               |                     |          |
| 5                       | QPSK       | 12      | 7         | 16.08              | 15.91                     | 16.07                 | 16.26                      | 16.41               | 17                  | 0        |
| 5                       | QPSK       | 12      | 13        | 16.00              | 15.94                     | 16.01                 | 16.26                      | 16.41               |                     |          |
| 5                       | QPSK       | 25      | 0         | 15.99              | 15.86                     | 16.02                 | 16.19                      | 16.35               |                     |          |
| 5                       | 16QAM      | 1       | 0         | 16.10              | 15.98                     | 16.00                 | 16.22                      | 16.42               |                     |          |
| 5                       | 16QAM      | 1       | 12        | 16.11              | 15.97                     | 16.11                 | 16.27                      | 16.47               | 17                  | 0        |
| 5                       | 16QAM      | 1       | 24        | 16.08              | 15.96                     | 16.02                 | 16.31                      | 16.35               |                     |          |
| 5                       | 16QAM      | 12      | 0         | 15.98              | 15.85                     | 15.93                 | 16.12                      | 16.34               |                     |          |
| 5                       | 16QAM      | 12      | 7         | 15.99              | 15.88                     | 15.98                 | 16.26                      | 16.34               |                     |          |
| 5                       | 16QAM      | 12      | 13        | 15.98              | 15.86                     | 15.94                 | 16.18                      | 16.32               | 17                  | 0        |
| 5                       | 16QAM      | 25      | 0         | 16.00              | 15.91                     | 16.01                 | 16.15                      | 16.38               |                     |          |
| 5                       | 64QAM      | 0       | 15.99     | 15.52              | 15.61                     | 15.84                 | 16.00                      |                     |                     |          |
| 5                       | 64QAM      | 1       | 12        | 15.66              | 15.53                     | 15.68                 | 15.85                      | 15.98               |                     |          |
| 5                       | 64QAM      | 1       | 24        | 15.70              | 15.50                     | 15.66                 | 15.85                      | 15.99               |                     |          |
| 5                       | 64QAM      | 12      | 0         | 16.08              | 15.96                     | 16.03                 | 16.22                      | 16.43               |                     |          |
| 5                       | 64QAM      | 12      | 7         | 16.04              | 15.96                     | 16.10                 | 16.30                      | 16.51               | 17                  | 0        |
| 5                       | 64QAM      | 25      | 0         | 16.05              | 15.98                     | 16.28                 | 16.42                      |                     |                     |          |
| 5                       | 64QAM      | 25      | 0         | 16.02              | 15.92                     | 16.07                 | 16.26                      | 16.41               |                     |          |

**Reduced Power Mode for Handheld on**

| Band            | Frame-Average Power (dBm) |       |        | Tune-up Limit (dBm) | Frame-Average Power (dBm) |        |       | Tune-up Limit (dBm) |
|-----------------|---------------------------|-------|--------|---------------------|---------------------------|--------|-------|---------------------|
|                 | 512                       | 661   | 810    |                     | 512                       | 661    | 810   |                     |
| TX Channel      | 1860.2                    | 1880  | 1909.8 | 1860.2              | 1880                      | 1909.8 |       |                     |
| Frequency (MHz) | 28.98                     | 28.53 | 27.50  | 29.00               | 19.98                     | 19.53  | 18.50 | 20.00               |
| GSM 1 Tx slot   | 28.97                     | 28.53 | 27.49  | 29.00               | 19.97                     | 19.53  | 18.49 | 20.00               |
| GPRS 1 Tx slot  | 27.78                     | 27.48 | 26.72  | 28.50               | 21.78                     | 21.48  | 20.72 | 22.50               |
| GPRS 3 Tx slots | 26.26                     | 25.92 | 25.18  | 27.00               | 22.00                     | 21.66  | 20.92 | 22.74               |
| GPRS 4 Tx slots | 24.94                     | 24.53 | 23.48  | 25.00               | 21.54                     | 21.33  | 20.48 | 22.00               |
| EDGE 1 Tx slot  | 23.36                     | 23.00 | 21.14  | 23.50               | 18.36                     | 18.00  | 15.14 | 19.50               |
| EDGE 2 Tx slots | 23.08                     | 23.46 | 22.72  | 24.00               | 17.98                     | 17.46  | 16.72 | 18.00               |
| EDGE 3 Tx slots | 21.88                     | 21.65 | 20.24  | 22.00               | 17.42                     | 17.39  | 15.98 | 17.74               |
| EDGE 4 Tx slots | 20.78                     | 20.27 | 18.58  | 21.00               | 17.78                     | 17.27  | 16.55 | 16.00               |

| Band            | WCDMA 8            |       |        | Tune-up Limit (dBm) | WCDMA 11 |        |        | Tune-up Limit (dBm) |
|-----------------|--------------------|-------|--------|---------------------|----------|--------|--------|---------------------|
|                 | 5052               | 9600  | 9538   |                     | 1312     | 1413   | 1513   |                     |
| TX Channel      | 1852.4             | 1880  | 1907.8 | 1852.4              | 1712.4   | 1732.6 | 1752.6 |                     |
| Frequency (MHz) | 20.31              | 20.33 | 20.27  | 21.00               | 20.11    | 20.41  | 20.22  | 21.00               |
| SCPP Rel 99     | AMR 12.2Kbps       | 20.33 | 20.35  | 20.28               | 21.00    | 20.12  | 20.42  | 20.25               |
| SCPP Rel 99     | RMC 12.2Kbps       | 19.97 | 19.95  | 19.69               | 20.50    | 19.54  | 19.98  | 19.62               |
| SCPP Rel 6      | HSDPA Subtest-1    | 19.45 | 19.46  | 19.08               | 20.00    | 19.05  | 19.34  | 19.09               |
| SCPP Rel 6      | HSDPA Subtest-2    | 19.48 | 19.47  | 19.00               | 20.00    | 19.03  | 19.36  | 19.10               |
| SCPP Rel 6      | HSDPA Subtest-3    | 19.48 | 19.47  | 19.00               | 20.00    | 19.03  | 19.36  | 19.10               |
| SCPP Rel 6      | HSDPA Subtest-4    | 19.48 | 19.47  | 19.00               | 20.00    | 19.03  | 19.36  | 19.10               |
| SCPP Rel 8      | DC-HSDPA Subtest-1 | 19.06 | 19.08  | 19.71               | 20.50    | 19.58  | 19.91  | 19.64               |
| SCPP Rel 8      | DC-HSDPA Subtest-2 | 20.01 | 20.00  | 19.57               | 20.50    | 19.62  | 19.98  | 19.68               |
| SCPP Rel 8      | DC-HSDPA Subtest-3 | 19.49 | 19.48  | 19.15               | 20.00    | 19.09  | 19.36  | 19.11               |
| SCPP Rel 8      | DC-HSDPA Subtest-4 | 19.46 | 19.50  | 19.16               | 20.00    | 19.05  | 19.39  | 19.15               |
| SCPP Rel 6      | HSPA Subtest-1     | 19.51 | 19.99  | 19.49               | 20.50    | 19.52  | 19.84  | 19.61               |
| SCPP Rel 6      | HSPA Subtest-2     | 17.45 | 17.93  | 17.51               | 18.50    | 17.57  | 17.90  | 17.62               |
| SCPP Rel 6      | HSPA Subtest-3     | 18.97 | 18.96  | 18.49               | 19.50    | 18.58  | 18.90  | 18.64               |
| SCPP Rel 6      | HSPA Subtest-4     | 18.02 | 17.97  | 17.56               | 18.50    | 17.53  | 17.87  | 17.59               |
| SCPP Rel 6      | HSPA Subtest-5     | 20.00 | 19.90  | 19.54               | 20.50    | 19.50  | 19.10  | 19.40               |

| Band             | CDMA BC1 |       |         | Tune-up Limit (dBm) |
|------------------|----------|-------|---------|---------------------|
|                  | 78       | 660   | 1115    |                     |
| TX Channel       | 1851.25  | 1880  | 1908.75 |                     |
| Frequency (MHz)  | 21.18    | 21.27 | 21.00   | 21.50               |
| RC1 S055         | 21.20    | 21.29 | 21.03   | 21.50               |
| RC3 S032 (F-SCH) | 21.21    | 21.30 | 21.05   | 21.50               |
| RC3 S032 (F-SCH) | 21.22    | 21.25 | 21.05   | 21.50               |
| RTAP 153.6Kbps   | 21.21    | 21.30 | 21.04   | 21.50               |
| RETAP 4596Kbps   | 21.19    | 21.28 | 21.02   | 21.50               |



| Band 2 (190MHz Band)<br>Part 24E |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
|----------------------------------|------------|---------|-----------|------------------------------------|---------------------------------------|-------------------------------------|------------------------|-------------|--|--|--|--|--|--|
| BW (MHz)                         | Modulation | RB Size | RB Offset | Power<br>Low<br>Ch. Freq.<br>18700 | Power<br>Middle<br>Ch. Freq.<br>18800 | Power<br>High<br>Ch. Freq.<br>19100 | Tune-up limit<br>(dBm) | MPR<br>(dB) |  |  |  |  |  |  |
| Channel                          |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| Frequency (MHz)                  |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| 20                               | QPSK       | 1       | 0         | 20.45                              | 20.38                                 | 20.34                               | 21                     | 0           |  |  |  |  |  |  |
| 20                               | QPSK       | 1       | 49        | 20.36                              | 20.45                                 | 20.38                               |                        |             |  |  |  |  |  |  |
| 20                               | QPSK       | 1       | 99        | 20.27                              | 20.35                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 20                               | QPSK       | 50      | 0         | 20.43                              | 20.36                                 | 20.36                               |                        |             |  |  |  |  |  |  |
| 20                               | QPSK       | 50      | 24        | 20.31                              | 20.27                                 | 20.37                               | 21                     | 0           |  |  |  |  |  |  |
| 20                               | QPSK       | 50      | 50        | 20.27                              | 20.19                                 | 20.16                               |                        |             |  |  |  |  |  |  |
| 20                               | QPSK       | 100     | 0         | 20.27                              | 20.41                                 | 20.37                               |                        |             |  |  |  |  |  |  |
| 20                               | 16QAM      | 1       | 0         | 20.52                              | 20.36                                 | 20.56                               |                        |             |  |  |  |  |  |  |
| 20                               | 16QAM      | 1       | 49        | 20.57                              | 20.57                                 | 20.57                               | 21                     | 0           |  |  |  |  |  |  |
| 20                               | 16QAM      | 1       | 99        | 20.40                              | 20.39                                 | 20.31                               |                        |             |  |  |  |  |  |  |
| 20                               | 16QAM      | 50      | 0         | 20.23                              | 20.23                                 | 20.40                               |                        |             |  |  |  |  |  |  |
| 20                               | 16QAM      | 50      | 24        | 20.36                              | 20.31                                 | 20.35                               |                        |             |  |  |  |  |  |  |
| 20                               | 16QAM      | 50      | 50        | 20.26                              | 20.21                                 | 20.15                               | 21                     | 0           |  |  |  |  |  |  |
| 20                               | 16QAM      | 100     | 0         | 20.29                              | 20.18                                 | 20.32                               |                        |             |  |  |  |  |  |  |
| 20                               | 64QAM      | 1       | 0         | 20.39                              | 20.57                                 | 20.66                               |                        |             |  |  |  |  |  |  |
| 20                               | 64QAM      | 1       | 49        | 20.46                              | 20.53                                 | 20.46                               |                        |             |  |  |  |  |  |  |
| 20                               | 64QAM      | 1       | 99        | 20.31                              | 20.34                                 | 20.41                               | 21                     | 0           |  |  |  |  |  |  |
| 20                               | 64QAM      | 50      | 0         | 20.24                              | 20.20                                 | 20.37                               |                        |             |  |  |  |  |  |  |
| 20                               | 64QAM      | 50      | 24        | 20.36                              | 20.28                                 | 20.39                               |                        |             |  |  |  |  |  |  |
| 20                               | 64QAM      | 50      | 50        | 20.27                              | 20.20                                 | 20.16                               |                        |             |  |  |  |  |  |  |
| 20                               | 64QAM      | 100     | 0         | 20.29                              | 20.21                                 | 20.31                               | 21                     | 0           |  |  |  |  |  |  |
| Channel                          |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| Frequency (MHz)                  |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| 15                               | QPSK       | 1       | 0         | 20.21                              | 20.28                                 | 20.39                               | 21                     | 0           |  |  |  |  |  |  |
| 15                               | QPSK       | 1       | 37        | 20.24                              | 20.22                                 | 20.16                               |                        |             |  |  |  |  |  |  |
| 15                               | QPSK       | 1       | 74        | 20.08                              | 20.06                                 | 20.02                               |                        |             |  |  |  |  |  |  |
| 15                               | QPSK       | 36      | 0         | 20.27                              | 20.23                                 | 20.34                               |                        |             |  |  |  |  |  |  |
| 15                               | QPSK       | 36      | 20        | 20.39                              | 20.30                                 | 20.32                               | 21                     | 0           |  |  |  |  |  |  |
| 15                               | QPSK       | 36      | 39        | 20.30                              | 20.23                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 15                               | QPSK       | 75      | 0         | 20.51                              | 20.39                                 | 20.28                               |                        |             |  |  |  |  |  |  |
| 15                               | 16QAM      | 1       | 0         | 20.56                              | 20.60                                 | 20.23                               |                        |             |  |  |  |  |  |  |
| 15                               | 16QAM      | 1       | 37        | 20.61                              | 20.57                                 | 20.47                               | 21                     | 0           |  |  |  |  |  |  |
| 15                               | 16QAM      | 1       | 74        | 20.43                              | 20.42                                 | 20.32                               |                        |             |  |  |  |  |  |  |
| 15                               | 16QAM      | 36      | 0         | 20.33                              | 20.23                                 | 20.32                               |                        |             |  |  |  |  |  |  |
| 15                               | 16QAM      | 36      | 20        | 20.38                              | 20.32                                 | 20.30                               |                        |             |  |  |  |  |  |  |
| 15                               | 16QAM      | 36      | 39        | 20.33                              | 20.26                                 | 20.34                               | 21                     | 0           |  |  |  |  |  |  |
| 15                               | 16QAM      | 75      | 0         | 20.38                              | 20.26                                 | 20.28                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 1       | 0         | 20.56                              | 20.51                                 | 20.63                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 1       | 37        | 20.41                              | 20.48                                 | 20.41                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 1       | 74        | 20.26                              | 20.30                                 | 20.13                               | 21                     | 0           |  |  |  |  |  |  |
| 15                               | 64QAM      | 36      | 0         | 20.30                              | 20.23                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 36      | 20        | 20.36                              | 20.27                                 | 20.32                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 36      | 39        | 20.33                              | 20.26                                 | 20.29                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 75      | 0         | 20.36                              | 20.25                                 | 20.29                               |                        |             |  |  |  |  |  |  |
| 15                               | 64QAM      | 75      | 0         | 20.36                              | 20.25                                 | 20.29                               |                        |             |  |  |  |  |  |  |
| Channel                          |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| Frequency (MHz)                  |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| 10                               | QPSK       | 1       | 0         | 20.10                              | 20.00                                 | 20.33                               | 21                     | 0           |  |  |  |  |  |  |
| 10                               | QPSK       | 1       | 25        | 20.39                              | 20.40                                 | 20.20                               |                        |             |  |  |  |  |  |  |
| 10                               | QPSK       | 1       | 49        | 20.02                              | 20.02                                 | 20.06                               |                        |             |  |  |  |  |  |  |
| 10                               | QPSK       | 25      | 0         | 20.53                              | 20.30                                 | 20.26                               |                        |             |  |  |  |  |  |  |
| 10                               | QPSK       | 25      | 12        | 20.51                              | 20.39                                 | 20.28                               | 21                     | 0           |  |  |  |  |  |  |
| 10                               | QPSK       | 25      | 25        | 20.34                              | 20.29                                 | 20.17                               |                        |             |  |  |  |  |  |  |
| 10                               | QPSK       | 50      | 0         | 20.41                              | 20.30                                 | 20.22                               |                        |             |  |  |  |  |  |  |
| 10                               | 16QAM      | 1       | 0         | 20.48                              | 20.39                                 | 20.22                               |                        |             |  |  |  |  |  |  |
| 10                               | 16QAM      | 1       | 25        | 20.56                              | 20.35                                 | 20.59                               | 21                     | 0           |  |  |  |  |  |  |
| 10                               | 16QAM      | 1       | 49        | 20.41                              | 20.36                                 | 20.47                               |                        |             |  |  |  |  |  |  |
| 10                               | 16QAM      | 25      | 0         | 20.45                              | 20.31                                 | 20.27                               |                        |             |  |  |  |  |  |  |
| 10                               | 16QAM      | 25      | 12        | 20.53                              | 20.44                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 10                               | 16QAM      | 25      | 25        | 20.34                              | 20.29                                 | 20.18                               | 21                     | 0           |  |  |  |  |  |  |
| 10                               | 16QAM      | 50      | 0         | 20.41                              | 20.30                                 | 20.21                               |                        |             |  |  |  |  |  |  |
| 10                               | 64QAM      | 1       | 0         | 20.48                              | 20.35                                 | 20.51                               |                        |             |  |  |  |  |  |  |
| 10                               | 64QAM      | 1       | 25        | 20.32                              | 20.61                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 10                               | 64QAM      | 1       | 49        | 20.40                              | 20.39                                 | 20.44                               | 21                     | 0           |  |  |  |  |  |  |
| 10                               | 64QAM      | 25      | 0         | 20.49                              | 20.33                                 | 20.28                               |                        |             |  |  |  |  |  |  |
| 10                               | 64QAM      | 25      | 12        | 20.54                              | 20.42                                 | 20.32                               |                        |             |  |  |  |  |  |  |
| 10                               | 64QAM      | 25      | 25        | 20.36                              | 20.27                                 | 20.17                               |                        |             |  |  |  |  |  |  |
| 10                               | 64QAM      | 50      | 0         | 20.41                              | 20.30                                 | 20.23                               | 21                     | 0           |  |  |  |  |  |  |
| Channel                          |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| Frequency (MHz)                  |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| 5                                | QPSK       | 1       | 0         | 20.46                              | 20.30                                 | 20.15                               | 21                     | 0           |  |  |  |  |  |  |
| 5                                | QPSK       | 1       | 12        | 20.47                              | 20.38                                 | 20.19                               |                        |             |  |  |  |  |  |  |
| 5                                | QPSK       | 1       | 24        | 20.27                              | 20.15                                 | 20.01                               |                        |             |  |  |  |  |  |  |
| 5                                | QPSK       | 12      | 0         | 20.59                              | 20.40                                 | 20.27                               |                        |             |  |  |  |  |  |  |
| 5                                | QPSK       | 12      | 7         | 20.58                              | 20.45                                 | 20.28                               | 21                     | 0           |  |  |  |  |  |  |
| 5                                | QPSK       | 12      | 13        | 20.47                              | 20.35                                 | 20.14                               |                        |             |  |  |  |  |  |  |
| 5                                | QPSK       | 25      | 0         | 20.52                              | 20.37                                 | 20.20                               |                        |             |  |  |  |  |  |  |
| 5                                | 16QAM      | 1       | 0         | 20.51                              | 20.60                                 | 20.50                               |                        |             |  |  |  |  |  |  |
| 5                                | 16QAM      | 1       | 12        | 20.36                              | 20.52                                 | 20.53                               | 21                     | 0           |  |  |  |  |  |  |
| 5                                | 16QAM      | 1       | 24        | 20.66                              | 20.52                                 | 20.35                               |                        |             |  |  |  |  |  |  |
| 5                                | 16QAM      | 12      | 0         | 20.64                              | 20.45                                 | 20.30                               |                        |             |  |  |  |  |  |  |
| 5                                | 16QAM      | 12      | 7         | 20.63                              | 20.49                                 | 20.39                               |                        |             |  |  |  |  |  |  |
| 5                                | 16QAM      | 12      | 13        | 20.52                              | 20.39                                 | 20.21                               | 21                     | 0           |  |  |  |  |  |  |
| 5                                | 16QAM      | 25      | 0         | 20.53                              | 20.41                                 | 20.25                               |                        |             |  |  |  |  |  |  |
| 5                                | 64QAM      | 1       | 0         | 20.67                              | 20.52                                 | 20.41                               |                        |             |  |  |  |  |  |  |
| 5                                | 64QAM      | 1       | 12        | 20.52                              | 20.67                                 | 20.44                               |                        |             |  |  |  |  |  |  |
| 5                                | 64QAM      | 1       | 24        | 20.53                              | 20.44                                 | 20.28                               | 21                     | 0           |  |  |  |  |  |  |
| 5                                | 64QAM      | 12      | 0         | 20.61                              | 20.42                                 | 20.52                               |                        |             |  |  |  |  |  |  |
| 5                                | 64QAM      | 12      | 7         | 20.57                              | 20.44                                 | 20.32                               |                        |             |  |  |  |  |  |  |
| 5                                | 64QAM      | 12      | 13        | 20.50                              | 20.33                                 | 20.18                               |                        |             |  |  |  |  |  |  |
| 5                                | 64QAM      | 25      | 0         | 20.54                              | 20.42                                 | 20.23                               | 21                     | 0           |  |  |  |  |  |  |
| Channel                          |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| Frequency (MHz)                  |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| 3                                | QPSK       | 1       | 0         | 20.50                              | 20.29                                 | 20.19                               | 21                     | 0           |  |  |  |  |  |  |
| 3                                | QPSK       | 1       | 8         | 20.49                              | 20.40                                 | 20.19                               |                        |             |  |  |  |  |  |  |
| 3                                | QPSK       | 1       | 14        | 20.36                              | 20.16                                 | 20.02                               |                        |             |  |  |  |  |  |  |
| 3                                | QPSK       | 8       | 0         | 20.57                              | 20.38                                 | 20.25                               |                        |             |  |  |  |  |  |  |
| 3                                | QPSK       | 8       | 4         | 20.56                              | 20.43                                 | 20.25                               | 21                     | 0           |  |  |  |  |  |  |
| 3                                | QPSK       | 8       | 7         | 20.50                              | 20.37                                 | 20.17                               |                        |             |  |  |  |  |  |  |
| 3                                | QPSK       | 15      | 0         | 20.53                              | 20.38                                 | 20.20                               |                        |             |  |  |  |  |  |  |
| 3                                | 16QAM      | 1       | 0         | 20.64                              | 20.63                                 | 20.53                               |                        |             |  |  |  |  |  |  |
| 3                                | 16QAM      | 1       | 8         | 20.51                              | 20.43                                 | 20.56                               | 21                     | 0           |  |  |  |  |  |  |
| 3                                | 16QAM      | 1       | 14        | 20.50                              | 20.57                                 | 20.41                               |                        |             |  |  |  |  |  |  |
| 3                                | 16QAM      | 8       | 0         | 20.61                              | 20.49                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 3                                | 16QAM      | 8       | 4         | 20.62                              | 20.49                                 | 20.33                               |                        |             |  |  |  |  |  |  |
| 3                                | 16QAM      | 8       | 7         | 20.55                              | 20.42                                 | 20.27                               | 21                     | 0           |  |  |  |  |  |  |
| 3                                | 16QAM      | 15      | 0         | 20.56                              | 20.42                                 | 20.27                               |                        |             |  |  |  |  |  |  |
| 3                                | 64QAM      | 1       | 0         | 20.49                              | 20.46                                 | 20.43                               |                        |             |  |  |  |  |  |  |
| 3                                | 64QAM      | 1       | 8         | 20.42                              | 20.21                                 | 20.42                               |                        |             |  |  |  |  |  |  |
| 3                                | 64QAM      | 1       | 14        | 20.65                              | 20.50                                 | 20.31                               | 21                     | 0           |  |  |  |  |  |  |
| 3                                | 64QAM      | 8       | 0         | 20.60                              | 20.44                                 | 20.29                               |                        |             |  |  |  |  |  |  |
| 3                                | 64QAM      | 8       | 4         | 20.57                              | 20.43                                 | 20.27                               |                        |             |  |  |  |  |  |  |
| 3                                | 64QAM      | 8       | 7         | 20.50                              | 20.38                                 | 20.21                               |                        |             |  |  |  |  |  |  |
| 3                                | 64QAM      | 15      | 0         | 20.54                              | 20.42                                 | 20.23                               | 21                     | 0           |  |  |  |  |  |  |
| Channel                          |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| Frequency (MHz)                  |            |         |           |                                    |                                       |                                     |                        |             |  |  |  |  |  |  |
| 1.4                              | QPSK       | 1       | 0         | 20.40                              | 20.34                                 | 20.05                               | 21                     | 0           |  |  |  |  |  |  |
| 1.4                              | QPSK       | 1       | 3         | 20.47                              | 20.33                                 | 20.08                               |                        |             |  |  |  |  |  |  |
| 1.4                              | QPSK       | 1       | 5         | 20.36                              | 20.22                                 | 19.99                               |                        |             |  |  |  |  |  |  |
| 1.4                              | QPSK       | 3       | 0         | 20.41                              | 20.36                                 | 20.07                               |                        |             |  |  |  |  |  |  |
| 1.4                              | QPSK       | 3       | 1         | 20.42                              | 20.38                                 | 20.12                               | 21                     | 0           |  |  |  |  |  |  |
| 1.4                              | QPSK       | 3       | 2         | 20.39                              | 20.34                                 | 20.07                               |                        |             |  |  |  |  |  |  |
| 1.4                              | QPSK       | 6       | 0         | 20.50                              | 20.33                                 | 20.16                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 1       | 0         | 20.45                              | 20.23                                 | 20.41                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 1       | 3         | 20.39                              | 20.26                                 | 20.45                               | 21                     | 0           |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 1       | 5         | 20.50                              | 20.33                                 | 20.35                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 3       | 0         | 20.53                              | 20.43                                 | 20.17                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 3       | 1         | 20.58                              | 20.47                                 | 20.25                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 3       | 3         | 20.50                              | 20.34                                 | 20.16                               | 21                     | 0           |  |  |  |  |  |  |
| 1.4                              | 16QAM      | 6       | 0         | 20.53                              | 20.40                                 | 20.19                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 1       | 0         | 20.61                              | 20.53                                 | 20.35                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 1       | 3         | 20.34                              | 20.63                                 | 20.38                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 1       | 5         | 20.65                              | 20.50                                 | 20.34                               | 21                     | 0           |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 3       | 0         | 20.57                              | 20.40                                 | 20.20                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 3       | 1         | 20.63                              | 20.50                                 | 20.30                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 3       | 3         | 20.53                              | 20.40                                 | 20.24                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 3       | 5         | 20.63                              | 20.50                                 | 20.34                               | 21                     | 0           |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 6       | 0         | 20.49                              | 20.35                                 | 20.17                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 6       | 0         | 20.49                              | 20.35                                 | 20.17                               |                        |             |  |  |  |  |  |  |
| 1.4                              | 64QAM      | 6       | 0         | 20.49                              | 20.35                                 | 20.17                               |                        |             |  |  |  |  |  |  |

| Band 66         |            |         |           |                                  |                                     |                                   |                        |             |        |
|-----------------|------------|---------|-----------|----------------------------------|-------------------------------------|-----------------------------------|------------------------|-------------|--------|
| BW (MHz)        | Modulation | RB Size | RB Offset | Power Low<br>Ch. Freq.<br>150075 | Power Middle<br>Ch. Freq.<br>150322 | Power High<br>Ch. Freq.<br>150575 | Tune-up limit<br>(dBm) | MPR<br>(dB) |        |
| Channel         |            |         |           |                                  |                                     |                                   |                        |             |        |
| Frequency (MHz) |            |         |           |                                  |                                     |                                   |                        |             |        |
| 20              | QPSK       | 1       | 0         | 20.32                            | 20.35                               | 20.31                             | 20.5                   | 0           |        |
| 20              | QPSK       | 1       | 49        | 20.30                            | 20.31                               | 20.32                             |                        |             |        |
| 20              | QPSK       | 1       | 99        | 20.31                            | 20.22                               | 20.33                             |                        |             |        |
| 20              | QPSK       | 50      | 0         | 20.31                            | 20.39                               | 20.38                             | 20.5                   | 0           |        |
| 20              | QPSK       | 50      | 24        | 20.35                            | 20.35                               | 20.24                             |                        |             |        |
| 20              | QPSK       | 50      | 50        | 20.21                            | 20.32                               | 20.31                             |                        |             |        |
| 20              | QPSK       | 100     | 0         | 20.21                            | 20.24                               | 20.20                             | 20.5                   | 0           |        |
| 20              | 16QAM      | 1       | 0         | 20.30                            | 20.20                               | 20.31                             |                        |             |        |
| 20              | 16QAM      | 1       | 49        | 20.34                            | 20.28                               | 20.47                             |                        |             |        |
| 20              | 16QAM      | 1       | 99        | 20.31                            | 20.23                               | 20.42                             | 20.5                   | 0           |        |
| 20              | 16QAM      | 50      | 0         | 19.89                            | 19.93                               | 20.01                             |                        |             |        |
| 20              | 16QAM      | 50      | 24        | 20.05                            | 19.95                               | 20.11                             |                        |             |        |
| 20              | 16QAM      | 50      | 50        | 19.91                            | 19.98                               | 20.05                             | 20.5                   | 0           |        |
| 20              | 16QAM      | 100     | 0         | 19.72                            | 19.78                               | 19.68                             |                        |             |        |
| 20              | 64QAM      | 1       | 0         | 20.14                            | 20.02                               | 20.39                             |                        |             |        |
| 20              | 64QAM      | 1       | 49        | 20.24                            | 20.06                               | 20.34                             | 20.5                   | 0           |        |
| 20              | 64QAM      | 1       | 99        | 20.01                            | 20.04                               | 20.19                             |                        |             |        |
| 20              | 64QAM      | 50      | 0         | 19.67                            | 19.84                               | 19.79                             |                        |             |        |
| 20              | 64QAM      | 50      | 24        | 19.72                            | 19.68                               | 20.04                             | 20.5                   | 0           |        |
| 20              | 64QAM      | 50      | 50        | 19.63                            | 19.70                               | 19.92                             |                        |             |        |
| 20              | 64QAM      | 100     | 0         | 19.48                            | 19.83                               | 19.93                             |                        |             |        |
| Channel         |            |         |           |                                  |                                     |                                   |                        |             |        |
| Frequency (MHz) |            |         |           |                                  |                                     |                                   | 150047                 | 150322      | 150997 |
|                 |            |         |           |                                  |                                     |                                   | 1717.5                 | 1745        | 1772.5 |
| 15              | QPSK       | 1       | 0         | 20.27                            | 20.38                               | 20.36                             | 20.5                   | 0           |        |
| 15              | QPSK       | 1       | 37        | 20.39                            | 20.39                               | 20.30                             |                        |             |        |
| 15              | QPSK       | 1       | 74        | 20.26                            | 20.30                               | 20.26                             |                        |             |        |
| 15              | QPSK       | 36      | 0         | 20.06                            | 19.96                               | 19.87                             | 20.5                   | 0           |        |
| 15              | QPSK       | 36      | 20        | 20.24                            | 20.04                               | 19.84                             |                        |             |        |
| 15              | QPSK       | 75      | 0         | 20.18                            | 19.98                               | 19.80                             |                        |             |        |
| 15              | 16QAM      | 1       | 0         | 20.28                            | 20.14                               | 20.19                             | 20.5                   | 0           |        |
| 15              | 16QAM      | 1       | 37        | 20.40                            | 20.22                               | 20.13                             |                        |             |        |
| 15              | 16QAM      | 1       | 74        | 20.30                            | 20.22                               | 20.12                             |                        |             |        |
| 15              | 16QAM      | 36      | 0         | 19.93                            | 19.85                               | 19.79                             | 20.5                   | 0           |        |
| 15              | 16QAM      | 36      | 20        | 20.13                            | 19.89                               | 19.88                             |                        |             |        |
| 15              | 16QAM      | 36      | 39        | 20.20                            | 19.86                               | 19.81                             |                        |             |        |
| 15              | 16QAM      | 75      | 0         | 20.05                            | 19.79                               | 19.55                             | 20.5                   | 0           |        |
| 15              | 64QAM      | 1       | 0         | 19.90                            | 19.91                               | 19.88                             |                        |             |        |
| 15              | 64QAM      | 1       | 37        | 20.22                            | 20.01                               | 19.85                             |                        |             |        |
| 15              | 64QAM      | 1       | 74        | 20.33                            | 19.85                               | 19.84                             | 20.5                   | 0           |        |
| 15              | 64QAM      | 36      | 0         | 19.68                            | 19.46                               | 19.55                             |                        |             |        |
| 15              | 64QAM      | 36      | 20        | 19.87                            | 19.63                               | 19.62                             |                        |             |        |
| 15              | 64QAM      | 36      | 39        | 19.96                            | 19.65                               | 19.58                             | 20.5                   | 0           |        |
| 15              | 64QAM      | 75      | 0         | 19.79                            | 19.54                               | 19.31                             |                        |             |        |
| Channel         |            |         |           |                                  |                                     |                                   |                        |             |        |
| Frequency (MHz) |            |         |           |                                  |                                     |                                   | 1715                   | 1745        | 1775   |
| 10              | QPSK       | 1       | 0         | 20.31                            | 20.09                               | 20.16                             | 20.5                   | 0           |        |
| 10              | QPSK       | 1       | 25        | 20.34                            | 20.16                               | 20.14                             |                        |             |        |
| 10              | QPSK       | 1       | 49        | 20.25                            | 20.11                               | 20.12                             |                        |             |        |
| 10              | QPSK       | 25      | 0         | 20.12                            | 19.63                               | 19.67                             | 20.5                   | 0           |        |
| 10              | QPSK       | 25      | 12        | 20.13                            | 19.69                               | 19.68                             |                        |             |        |
| 10              | QPSK       | 25      | 25        | 20.09                            | 19.68                               | 19.66                             |                        |             |        |
| 10              | QPSK       | 50      | 0         | 19.96                            | 19.48                               | 19.46                             | 20.5                   | 0           |        |
| 10              | 16QAM      | 1       | 0         | 20.22                            | 19.90                               | 19.92                             |                        |             |        |
| 10              | 16QAM      | 1       | 25        | 20.35                            | 19.87                               | 19.93                             |                        |             |        |
| 10              | 16QAM      | 1       | 49        | 20.15                            | 19.95                               | 19.91                             | 20.5                   | 0           |        |
| 10              | 16QAM      | 25      | 0         | 19.90                            | 19.68                               | 19.59                             |                        |             |        |
| 10              | 16QAM      | 25      | 12        | 20.04                            | 19.69                               | 19.63                             |                        |             |        |
| 10              | 16QAM      | 25      | 25        | 19.95                            | 19.63                               | 19.61                             | 20.5                   | 0           |        |
| 10              | 16QAM      | 50      | 0         | 19.84                            | 19.35                               | 19.41                             |                        |             |        |
| 10              | 64QAM      | 1       | 0         | 19.88                            | 19.78                               | 19.80                             |                        |             |        |
| 10              | 64QAM      | 1       | 25        | 20.24                            | 19.79                               | 19.86                             | 20.5                   | 0           |        |
| 10              | 64QAM      | 1       | 49        | 19.89                            | 19.74                               | 19.81                             |                        |             |        |
| 10              | 64QAM      | 25      | 0         | 19.49                            | 19.31                               | 19.41                             |                        |             |        |
| 10              | 64QAM      | 25      | 12        | 19.78                            | 19.42                               | 19.39                             | 20.5                   | 0           |        |
| 10              | 64QAM      | 25      | 25        | 19.70                            | 19.43                               | 19.38                             |                        |             |        |
| 10              | 64QAM      | 50      | 0         | 19.59                            | 19.13                               | 19.16                             |                        |             |        |
| Channel         |            |         |           |                                  |                                     |                                   | 151697                 | 152322      | 152947 |
| Frequency (MHz) |            |         |           |                                  |                                     |                                   | 1712.5                 | 1745        | 1777.5 |
| 5               | QPSK       | 1       | 0         | 20.36                            | 20.25                               | 20.25                             | 20.5                   | 0           |        |
| 5               | QPSK       | 1       | 12        | 20.26                            | 20.20                               | 20.22                             |                        |             |        |
| 5               | QPSK       | 1       | 24        | 20.28                            | 20.16                               | 20.09                             |                        |             |        |
| 5               | QPSK       | 12      | 0         | 20.26                            | 20.31                               | 20.29                             | 20.5                   | 0           |        |
| 5               | QPSK       | 12      | 7         | 20.38                            | 20.30                               | 20.28                             |                        |             |        |
| 5               | QPSK       | 12      | 13        | 20.32                            | 20.26                               | 20.21                             |                        |             |        |
| 5               | QPSK       | 25      | 0         | 20.19                            | 20.19                               | 20.21                             | 20.5                   | 0           |        |
| 5               | 16QAM      | 1       | 0         | 20.18                            | 19.95                               | 19.90                             |                        |             |        |
| 5               | 16QAM      | 1       | 12        | 20.31                            | 19.97                               | 19.91                             |                        |             |        |
| 5               | 16QAM      | 1       | 24        | 20.40                            | 19.95                               | 19.90                             | 20.5                   | 0           |        |
| 5               | 16QAM      | 12      | 0         | 19.94                            | 19.88                               | 19.75                             |                        |             |        |
| 5               | 16QAM      | 12      | 7         | 20.07                            | 19.87                               | 19.80                             |                        |             |        |
| 5               | 16QAM      | 12      | 13        | 20.07                            | 19.65                               | 19.69                             | 20.5                   | 0           |        |
| 5               | 16QAM      | 25      | 0         | 19.97                            | 19.55                               | 19.69                             |                        |             |        |
| 5               | 64QAM      | 1       | 0         | 19.98                            | 19.76                               | 19.83                             |                        |             |        |
| 5               | 64QAM      | 1       | 12        | 20.21                            | 19.75                               | 19.96                             | 20.5                   | 0           |        |
| 5               | 64QAM      | 1       | 24        | 20.17                            | 19.81                               | 19.87                             |                        |             |        |
| 5               | 64QAM      | 12      | 0         | 19.69                            | 19.45                               | 19.52                             |                        |             |        |
| 5               | 64QAM      | 12      | 7         | 19.94                            | 19.43                               | 19.58                             | 20.5                   | 0           |        |
| 5               | 64QAM      | 12      | 13        | 19.83                            | 19.41                               | 19.47                             |                        |             |        |
| 5               | 64QAM      | 25      | 0         | 19.70                            | 19.29                               | 19.26                             |                        |             |        |
| Channel         |            |         |           |                                  |                                     |                                   | 151897                 | 152322      | 152607 |
| Frequency (MHz) |            |         |           |                                  |                                     |                                   | 1711.5                 | 1745        | 1778.5 |
| 3               | QPSK       | 1       | 0         | 20.31                            | 20.26                               | 20.23                             | 20.5                   | 0           |        |
| 3               | QPSK       | 1       | 8         | 20.44                            | 20.29                               | 20.25                             |                        |             |        |
| 3               | QPSK       | 1       | 14        | 20.40                            | 20.20                               | 20.16                             |                        |             |        |
| 3               | QPSK       | 8       | 0         | 20.39                            | 20.24                               | 20.26                             | 20.5                   | 0           |        |
| 3               | QPSK       | 8       | 4         | 20.45                            | 20.31                               | 20.26                             |                        |             |        |
| 3               | QPSK       | 8       | 7         | 20.44                            | 20.28                               | 20.21                             |                        |             |        |
| 3               | QPSK       | 15      | 0         | 20.41                            | 20.26                               | 20.23                             | 20.5                   | 0           |        |
| 3               | 16QAM      | 1       | 0         | 19.88                            | 19.88                               | 19.99                             |                        |             |        |
| 3               | 16QAM      | 1       | 8         | 20.17                            | 20.06                               | 19.97                             |                        |             |        |
| 3               | 16QAM      | 1       | 14        | 20.13                            | 19.98                               | 19.92                             | 20.5                   | 0           |        |
| 3               | 16QAM      | 8       | 0         | 19.84                            | 19.65                               | 19.78                             |                        |             |        |
| 3               | 16QAM      | 8       | 4         | 19.90                            | 19.74                               | 19.82                             |                        |             |        |
| 3               | 16QAM      | 8       | 7         | 19.88                            | 19.70                               | 19.80                             | 20.5                   | 0           |        |
| 3               | 16QAM      | 15      | 0         | 19.82                            | 19.61                               | 19.74                             |                        |             |        |
| 3               | 64QAM      | 1       | 0         | 19.94                            | 19.91                               | 19.98                             |                        |             |        |
| 3               | 64QAM      | 1       | 8         | 20.10                            | 19.87                               | 19.86                             | 20.5                   | 0           |        |
| 3               | 64QAM      | 1       | 14        | 20.11                            | 19.89                               | 19.84                             |                        |             |        |
| 3               | 64QAM      | 8       | 0         | 19.55                            | 19.34                               | 19.53                             |                        |             |        |
| 3               | 64QAM      | 8       | 4         | 19.63                            | 19.45                               | 19.55                             | 20.5                   | 0           |        |
| 3               | 64QAM      | 8       | 7         | 19.61                            | 19.43                               | 19.50                             |                        |             |        |
| 3               | 64QAM      | 15      | 0         | 19.54                            | 19.35                               | 19.47                             |                        |             |        |
| Channel         |            |         |           |                                  |                                     |                                   | 151939                 | 152322      | 152665 |
| Frequency (MHz) |            |         |           |                                  |                                     |                                   | 1710.7                 | 1745        | 1779.3 |
| 1.4             | QPSK       | 1       | 0         | 20.24                            | 20.08                               | 20.03                             | 20.5                   | 0           |        |
| 1.4             | QPSK       | 1       | 3         | 20.33                            | 20.19                               | 20.07                             |                        |             |        |
| 1.4             | QPSK       | 1       | 5         | 20.27                            | 20.11                               | 20.08                             |                        |             |        |
| 1.4             | QPSK       | 3       | 0         | 20.28                            | 20.13                               | 20.02                             | 20.5                   | 0           |        |
| 1.4             | QPSK       | 3       | 1         | 20.32                            | 20.17                               | 20.07                             |                        |             |        |
| 1.4             | QPSK       | 3       | 3         | 20.36                            | 20.16                               | 20.07                             |                        |             |        |
| 1.4             | QPSK       | 6       | 0         | 20.33                            | 20.19                               | 20.10                             | 20.5                   | 0           |        |
| 1.4             | 16QAM      | 1       | 0         | 20.04                            | 19.88                               | 19.85                             |                        |             |        |
| 1.4             | 16QAM      | 1       | 3         | 20.01                            | 19.95                               | 19.90                             |                        |             |        |
| 1.4             | 16QAM      | 1       | 5         | 19.92                            | 19.91                               | 19.90                             | 20.5                   | 0           |        |
| 1.4             | 16QAM      | 3       | 0         | 19.78                            | 19.67                               | 19.57                             |                        |             |        |
| 1.4             | 16QAM      | 3       | 1         | 19.87                            | 19.71                               | 19.77                             |                        |             |        |
| 1.4             | 16QAM      | 3       | 3         | 19.87                            | 19.71                               | 19.77                             | 20.5                   | 0           |        |
| 1.4             | 16QAM      | 6       | 0         | 19.68                            | 19.77                               | 19.84                             |                        |             |        |
| 1.4             | 16QAM      | 6       | 0         | 19.48                            | 19.24                               | 19.31                             |                        |             |        |

### Full

| CA_7C                                 |             |            |         |           |         |           |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |                      |                     |
| 20850                                 | 21048       | QPSK       | 1       | 0         | 0       | 0         | 23.52                | 24.00               |
| 21100                                 | 20902       | QPSK       | 1       | 0         | 0       | 0         | 23.75                | 24.00               |
| 21350                                 | 21152       | QPSK       | 1       | 0         | 0       | 0         | 23.68                | 24.00               |

### Sensor

| CA_7C                                 |             |            |         |           |         |           |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |                      |                     |
| 20850                                 | 21048       | QPSK       | 1       | 0         | 0       | 0         | 16.87                | 17.00               |
| 21100                                 | 20902       | QPSK       | 1       | 0         | 0       | 0         | 16.76                | 17.00               |
| 21350                                 | 21152       | QPSK       | 1       | 0         | 0       | 0         | 17.88                | 17.00               |

### Hotspot

| CA_7C                                 |             |            |         |           |         |           |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |                      |                     |
| 20850                                 | 21048       | QPSK       | 1       | 0         | 0       | 0         | 13.31                | 14.00               |
| 21100                                 | 20902       | QPSK       | 1       | 0         | 0       | 0         | 13.47                | 14.00               |
| 21350                                 | 21152       | QPSK       | 1       | 0         | 0       | 0         | 13.35                | 14.00               |

### Handheld

| CA_7C                                 |             |            |         |           |         |           |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |                      |                     |
| 20850                                 | 21048       | QPSK       | 1       | 0         | 0       | 0         | 21.36                | 21.50               |
| 21100                                 | 20902       | QPSK       | 1       | 0         | 0       | 0         | 21.23                | 21.50               |
| 21350                                 | 21152       | QPSK       | 1       | 0         | 0       | 0         | 21.37                | 21.50               |

| Full Power                            |             |            |         |           |         |           |                          |                          |                            |                           |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|----------------------------|---------------------------|
| CA_2A-7A                              |             |            |         |           |         |           |                          |                          |                            |                           |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                            |                           |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | Total Measured Power (dBm) | Total Tune up Power (dBm) |
| 18700                                 | 20850       | QPSK       | 1       | 0         | 1       | 0         | 22.33                    | 17.00                    | 23.43                      | 24.00                     |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.23                    | 17.32                    | 23.34                      | 24.00                     |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.12                    | 17.13                    | 23.33                      | 24.00                     |
|                                       |             |            | 50      | 0         | 50      | 0         | 20.02                    | 20.45                    | 23.23                      | 24.00                     |
|                                       |             |            | 50      | 24        | 50      | 24        | 20.12                    | 20.32                    | 23.34                      | 24.00                     |
|                                       |             |            | 50      | 50        | 50      | 50        | 19.99                    | 20.31                    | 23.13                      | 24.00                     |
| 18900                                 | 21100       | QPSK       | 100     | 0         | 100     | 0         | 19.99                    | 20.33                    | 23.15                      | 24.00                     |
|                                       |             |            | 1       | 0         | 1       | 0         | 22.14                    | 17.11                    | 23.45                      | 24.00                     |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.21                    | 17.32                    | 23.32                      | 24.00                     |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.12                    | 16.97                    | 23.25                      | 24.00                     |
|                                       |             |            | 50      | 0         | 50      | 0         | 20.23                    | 20.12                    | 23.15                      | 24.00                     |
|                                       |             |            | 50      | 24        | 50      | 24        | 20.12                    | 20.02                    | 23.12                      | 24.00                     |
| 19100                                 | 21350       | QPSK       | 50      | 50        | 50      | 50        | 20.11                    | 20.12                    | 23.24                      | 24.00                     |
|                                       |             |            | 100     | 0         | 100     | 0         | 20.00                    | 20.12                    | 23.13                      | 24.00                     |
|                                       |             |            | 1       | 0         | 1       | 0         | 22.00                    | 17.32                    | 23.19                      | 24.00                     |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.13                    | 16.97                    | 23.21                      | 24.00                     |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.13                    | 17.43                    | 23.31                      | 24.00                     |
|                                       |             |            | 50      | 0         | 50      | 0         | 19.56                    | 20.12                    | 22.96                      | 24.00                     |

| Full Power                            |             |            |         |           |         |           |                          |                          |                            |                           |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|----------------------------|---------------------------|
| CA_7A-2A                              |             |            |         |           |         |           |                          |                          |                            |                           |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                            |                           |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | Total Measured Power (dBm) | Total Tune up Power (dBm) |
| 20850                                 | 18700       | QPSK       | 1       | 0         | 1       | 0         | 22.80                    | 16.99                    | 23.65                      | 24.00                     |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.67                    | 17.32                    | 23.67                      | 24.00                     |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.78                    | 16.66                    | 23.54                      | 24.00                     |
|                                       |             |            | 50      | 0         | 50      | 0         | 20.51                    | 19.96                    | 23.27                      | 24.00                     |
|                                       |             |            | 50      | 24        | 50      | 24        | 20.45                    | 19.95                    | 23.43                      | 24.00                     |
|                                       |             |            | 50      | 50        | 50      | 50        | 20.50                    | 19.67                    | 23.34                      | 24.00                     |
| 21100                                 | 18900       | QPSK       | 100     | 0         | 100     | 0         | 20.45                    | 20.01                    | 23.27                      | 24.00                     |
|                                       |             |            | 1       | 0         | 1       | 0         | 23.05                    | 16.35                    | 23.74                      | 24.00                     |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.87                    | 16.78                    | 23.65                      | 24.00                     |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.78                    | 17.12                    | 23.45                      | 24.00                     |
|                                       |             |            | 50      | 0         | 50      | 0         | 20.54                    | 19.76                    | 23.65                      | 24.00                     |
|                                       |             |            | 50      | 24        | 50      | 24        | 20.34                    | 19.56                    | 23.54                      | 24.00                     |
| 21350                                 | 19100       | QPSK       | 50      | 50        | 50      | 50        | 20.44                    | 20.02                    | 23.54                      | 24.00                     |
|                                       |             |            | 100     | 0         | 100     | 0         | 20.21                    | 20.12                    | 23.35                      | 24.00                     |
|                                       |             |            | 1       | 0         | 1       | 0         | 23.00                    | 16.07                    | 23.58                      | 24.00                     |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.89                    | 16.32                    | 23.34                      | 24.00                     |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.98                    | 16.54                    | 23.45                      | 24.00                     |
|                                       |             |            | 50      | 0         | 50      | 0         | 20.13                    | 19.56                    | 22.97                      | 24.00                     |

| For Head                              |             |            |         |           |         |           |                          |                          |                         |                         |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|-------------------------|-------------------------|
| CA_2A-7A                              |             |            |         |           |         |           |                          |                          |                         |                         |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                         |                         |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | PCC Tune up Power (dBm) | SCC Tune up Power (dBm) |
| 18700                                 | 20850       | QPSK       | 1       | 0         | 1       | 0         | 22.50                    | 12.15                    | 24.00                   | 13.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.64                    | 12.03                    | 24.00                   | 13.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.27                    | 12.00                    | 24.00                   | 13.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 19.90                    | 12.10                    | 23.00                   | 13.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 19.99                    | 12.03                    | 23.00                   | 13.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 19.87                    | 11.99                    | 23.00                   | 13.00                   |
| 18900                                 | 21100       | QPSK       | 100     | 0         | 100     | 0         | 19.88                    | 11.98                    | 23.00                   | 13.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 22.45                    | 12.21                    | 24.00                   | 13.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.44                    | 12.10                    | 24.00                   | 13.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.35                    | 12.07                    | 24.00                   | 13.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 19.78                    | 12.21                    | 23.00                   | 13.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 19.88                    | 12.06                    | 23.00                   | 13.00                   |
| 19100                                 | 21350       | QPSK       | 50      | 50        | 50      | 50        | 19.97                    | 11.98                    | 23.00                   | 13.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 19.88                    | 12.12                    | 23.00                   | 13.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 22.34                    | 12.03                    | 24.00                   | 13.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 22.56                    | 12.11                    | 24.00                   | 13.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 22.55                    | 12.07                    | 24.00                   | 13.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 19.67                    | 12.10                    | 23.00                   | 13.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 19.66                    | 12.06                    | 23.00                   | 13.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 19.78                    | 12.08                    | 23.00                   | 13.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 19.98                    | 12.02                    | 23.00                   | 13.00                   |
|                                       |             |            |         |           |         |           |                          |                          |                         |                         |

| For Head                              |             |            |         |           |         |           |                          |                          |                         |                         |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|-------------------------|-------------------------|
| CA_7A-2A                              |             |            |         |           |         |           |                          |                          |                         |                         |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                         |                         |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | PCC Tune up Power (dBm) | SCC Tune up Power (dBm) |
| 20850                                 | 18700       | QPSK       | 1       | 0         | 1       | 0         | 12.15                    | 22.72                    | 13.00                   | 24.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 12.04                    | 22.67                    | 13.00                   | 24.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 12.13                    | 22.56                    | 13.00                   | 24.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 12.21                    | 19.99                    | 13.00                   | 23.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 12.12                    | 20.01                    | 13.00                   | 23.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 12.03                    | 19.89                    | 13.00                   | 23.00                   |
| 21100                                 | 18900       | QPSK       | 100     | 0         | 100     | 0         | 12.12                    | 19.99                    | 13.00                   | 23.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 12.13                    | 22.76                    | 13.00                   | 24.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 12.04                    | 22.65                    | 13.00                   | 24.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 12.14                    | 22.78                    | 13.00                   | 24.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 12.04                    | 19.89                    | 13.00                   | 23.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 12.12                    | 20.12                    | 13.00                   | 23.00                   |
| 21350                                 | 19100       | QPSK       | 50      | 50        | 50      | 50        | 12.14                    | 19.99                    | 13.00                   | 23.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 12.18                    | 20.01                    | 13.00                   | 23.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 12.21                    | 22.72                    | 13.00                   | 24.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 12.01                    | 22.56                    | 13.00                   | 24.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 12.05                    | 22.76                    | 13.00                   | 24.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 12.12                    | 20.00                    | 13.00                   | 23.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 12.21                    | 19.98                    | 13.00                   | 23.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 12.14                    | 20.01                    | 13.00                   | 23.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 12.19                    | 20.03                    | 13.00                   | 23.00                   |

| For Body Worn & Hotspot               |             |            |         |           |         |           |                          |                          |                         |                         |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|-------------------------|-------------------------|
| CA 2A-7A                              |             |            |         |           |         |           |                          |                          |                         |                         |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                         |                         |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | PCC Tune up Power (dBm) | SCC Tune up Power (dBm) |
| 18700                                 | 20850       | QPSK       | 1       | 0         | 1       | 0         | 8.91                     | 15.32                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 8.98                     | 15.31                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 8.91                     | 13.15                    | 9.50                    | 16.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 8.96                     | 15.33                    | 9.50                    | 16.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 9.02                     | 15.21                    | 9.50                    | 16.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 9.00                     | 15.15                    | 9.50                    | 16.00                   |
| 18900                                 | 21100       | QPSK       | 100     | 0         | 100     | 0         | 8.99                     | 15.31                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 9.01                     | 15.46                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 9.00                     | 15.13                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 8.99                     | 15.21                    | 9.50                    | 16.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 9.01                     | 15.44                    | 9.50                    | 16.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 8.90                     | 15.19                    | 9.50                    | 16.00                   |
| 19100                                 | 21350       | QPSK       | 50      | 50        | 50      | 50        | 8.99                     | 15.21                    | 9.50                    | 16.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 8.90                     | 15.31                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 9.01                     | 15.40                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 8.98                     | 15.12                    | 9.50                    | 16.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 9.00                     | 15.14                    | 9.50                    | 16.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 9.01                     | 15.13                    | 9.50                    | 16.00                   |

| For Handheld                          |             |            |         |           |         |           |                          |                          |                         |                         |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|-------------------------|-------------------------|
| CA 2A-7A                              |             |            |         |           |         |           |                          |                          |                         |                         |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                         |                         |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | PCC Tune up Power (dBm) | SCC Tune up Power (dBm) |
| 18700                                 | 20850       | QPSK       | 1       | 0         | 1       | 0         | 10.35                    | 18.62                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 10.42                    | 18.61                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 10.36                    | 18.66                    | 12.00                   | 20.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 10.52                    | 18.65                    | 12.00                   | 20.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 10.35                    | 18.59                    | 12.00                   | 20.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 10.41                    | 18.65                    | 12.00                   | 20.00                   |
| 18900                                 | 21100       | QPSK       | 100     | 0         | 100     | 0         | 10.35                    | 18.55                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 10.65                    | 18.73                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 10.56                    | 18.64                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 10.45                    | 18.54                    | 12.00                   | 20.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 10.52                    | 18.62                    | 12.00                   | 20.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 10.35                    | 18.52                    | 12.00                   | 20.00                   |
| 19100                                 | 21350       | QPSK       | 50      | 50        | 50      | 50        | 10.42                    | 18.54                    | 12.00                   | 20.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 10.29                    | 18.53                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 10.35                    | 18.65                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 10.35                    | 18.45                    | 12.00                   | 20.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 10.35                    | 18.52                    | 12.00                   | 20.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 10.35                    | 18.41                    | 12.00                   | 20.00                   |

| For Body Worn                         |             |            |         |           |         |           |                          |                          |                         |                         |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|-------------------------|-------------------------|
| CA 7A-2A                              |             |            |         |           |         |           |                          |                          |                         |                         |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                         |                         |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | PCC Tune up Power (dBm) | SCC Tune up Power (dBm) |
| 20850                                 | 18700       | QPSK       | 1       | 0         | 1       | 0         | 15.28                    | 8.96                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 49        | 1       | 49        | 15.22                    | 9.02                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 99        | 1       | 99        | 15.18                    | 8.78                     | 16.00                   | 9.50                    |
|                                       |             |            | 50      | 0         | 50      | 0         | 15.21                    | 9.12                     | 16.00                   | 9.50                    |
|                                       |             |            | 50      | 24        | 50      | 24        | 15.23                    | 9.03                     | 16.00                   | 9.50                    |
|                                       |             |            | 50      | 50        | 50      | 50        | 15.16                    | 9.02                     | 16.00                   | 9.50                    |
| 21100                                 | 18900       | QPSK       | 100     | 0         | 100     | 0         | 15.23                    | 8.89                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 0         | 1       | 0         | 15.23                    | 9.17                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 49        | 1       | 49        | 15.18                    | 9.02                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 99        | 1       | 99        | 15.21                    | 9.10                     | 16.00                   | 9.50                    |
|                                       |             |            | 50      | 0         | 50      | 0         | 15.12                    | 9.09                     | 16.00                   | 9.50                    |
|                                       |             |            | 50      | 24        | 50      | 24        | 15.24                    | 9.02                     | 16.00                   | 9.50                    |
| 21350                                 | 19100       | QPSK       | 50      | 50        | 50      | 50        | 15.21                    | 9.04                     | 16.00                   | 9.50                    |
|                                       |             |            | 100     | 0         | 100     | 0         | 15.20                    | 9.10                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 0         | 1       | 0         | 15.21                    | 8.99                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 49        | 1       | 49        | 15.12                    | 9.12                     | 16.00                   | 9.50                    |
|                                       |             |            | 1       | 99        | 1       | 99        | 15.13                    | 9.14                     | 16.00                   | 9.50                    |
|                                       |             |            | 50      | 0         | 50      | 0         | 15.21                    | 9.07                     | 16.00                   | 9.50                    |

| For Handheld                          |             |            |         |           |         |           |                          |                          |                         |                         |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|--------------------------|--------------------------|-------------------------|-------------------------|
| CA 7A-2A                              |             |            |         |           |         |           |                          |                          |                         |                         |
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |                          |                          |                         |                         |
| PCC Channel                           | SCC Channel | Modulation | RB Size | RB Offset | RB Size | RB Offset | PCC Measured Power (dBm) | SCC Measured Power (dBm) | PCC Tune up Power (dBm) | SCC Tune up Power (dBm) |
| 20850                                 | 18700       | QPSK       | 1       | 0         | 1       | 0         | 18.20                    | 10.42                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 18.45                    | 10.52                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 18.35                    | 10.51                    | 20.00                   | 12.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 18.42                    | 10.50                    | 20.00                   | 12.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 18.24                    | 10.35                    | 20.00                   | 12.00                   |
|                                       |             |            | 50      | 50        | 50      | 50        | 18.24                    | 10.42                    | 20.00                   | 12.00                   |
| 21100                                 | 18900       | QPSK       | 100     | 0         | 100     | 0         | 18.15                    | 10.53                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 18.24                    | 10.34                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 18.26                    | 10.42                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 18.35                    | 10.32                    | 20.00                   | 12.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 18.21                    | 10.34                    | 20.00                   | 12.00                   |
|                                       |             |            | 50      | 24        | 50      | 24        | 18.25                    | 10.24                    | 20.00                   | 12.00                   |
| 21350                                 | 19100       | QPSK       | 50      | 50        | 50      | 50        | 18.31                    | 10.34                    | 20.00                   | 12.00                   |
|                                       |             |            | 100     | 0         | 100     | 0         | 18.24                    | 10.35                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 0         | 1       | 0         | 18.25                    | 10.37                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 49        | 1       | 49        | 18.23                    | 10.51                    | 20.00                   | 12.00                   |
|                                       |             |            | 1       | 99        | 1       | 99        | 18.23                    | 10.36                    | 20.00                   | 12.00                   |
|                                       |             |            | 50      | 0         | 50      | 0         | 18.42                    | 10.42                    | 20.00                   | 12.00                   |

## Full Power Mode

## 2CA DL

| Configure  | CA List        | PCC         |         |             |         |        |      |           |                          | SCC     |         |             |         |                          | Power           |                 |         |       |       |
|------------|----------------|-------------|---------|-------------|---------|--------|------|-----------|--------------------------|---------|---------|-------------|---------|--------------------------|-----------------|-----------------|---------|-------|-------|
|            |                | LTE         | BW      | UL          | UL      | Mod.   | UL#  | UL        | DL Antenna Configuration | LTE     | BW      | DL          | DL      | DL Antenna Configuration | With CA         | Without CA      |         |       |       |
|            |                | Band        | (MHz)   | Freq. (MHz) | Channel |        | RB   | RB Offset |                          | Band    | (MHz)   | Freq. (MHz) | Channel |                          | Tx. Power (dBm) | Tx. Power (dBm) |         |       |       |
| Inter-Band | CA_2A-5A       | Band 2      | 20M     | 1880        | 18900   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 23.61           | 23.38           |         |       |       |
|            |                | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 2  | 20M     | 1960        | 900     |                          | 23.55           | 23.31           |         |       |       |
|            | CA_4A-5A       | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 23.08           | 23.18           |         |       |       |
|            |                | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    |                          | 23.56           | 23.31           |         |       |       |
|            | CA_4A-5A       | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 5  | 10M     | 881.5       | 2525    |                          | 23.19           | 23.18           |         |       |       |
|            |                | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    |                          | 4x4MIMO         | 23.13           | 23.31   |       |       |
|            | CA_4A-12A      | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 12 | 10M     | 737.5       | 5095    |                          | 23.09           | 23.18           |         |       |       |
|            |                | Band 12     | 10M     | 707.5       | 23095   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    |                          | 23              | 23.08           |         |       |       |
|            | CA_4A-12A      | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 12 | 10M     | 737.5       | 5095    |                          | 23.21           | 23.18           |         |       |       |
|            |                | Band 12     | 10M     | 707.5       | 23095   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    |                          | 4x4MIMO         | 22.79           | 23.08   |       |       |
|            | CA_4A-17A      | Band 4      | 10M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 17 | 10M     | 740         | 5790    |                          | 23.04           | 23.18           |         |       |       |
|            |                | Band 17     | 10M     | 710         | 23790   | QPSK   | 1    | 0         |                          | Band 4  | 10M     | 2132.5      | 2175    |                          | 22.94           | 23              |         |       |       |
|            | CA_4A-17A      | Band 4      | 10M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 17 | 10M     | 740         | 5790    |                          | 23.1            | 23.18           |         |       |       |
|            |                | Band 17     | 10M     | 710         | 23790   | QPSK   | 1    | 0         |                          | Band 4  | 10M     | 2132.5      | 2175    |                          | 4x4MIMO         | 22.22           | 23      |       |       |
|            | CA_5A-38A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 38 | 20M     | 2595        | 38000   |                          | 23.52           | 23.31           |         |       |       |
|            |                | Band 38     | 20M     | 2595        | 38000   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 23.58           | 23.33           |         |       |       |
|            | CA_5A-38A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 38 | 20M     | 2595        | 38000   | 4x4MIMO                  | 22.94           | 23.31           |         |       |       |
|            |                | Band 38     | 20M     | 2595        | 38000   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 23.4            | 23.33           |         |       |       |
|            | CA_5A-41A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 41 | 20M     | 2593        | 40620   |                          | 23.53           | 23.31           |         |       |       |
|            |                | Band 41     | 20M     | 2593        | 40620   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 23.44           | 23.43           |         |       |       |
|            | CA_5A-41A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 41 | 20M     | 2593        | 40620   | 4x4MIMO                  | 23.05           | 23.31           |         |       |       |
|            |                | Band 41     | 20M     | 2593        | 40620   | QPSK   | 1    | 0         |                          | 4x4MIMO | Band 5  | 10M         | 881.5   |                          | 2525            | 23.01           | 23.43   |       |       |
| Intra-Band | Contiguous     | CA_7B       | Band 7  | 15M         | 2507.5  | 20825  | QPSK | 1         | 74                       | 4x4MIMO | Band 7  | 5M          | 2834.3  | 2918                     | 4x4MIMO         | 23              | 23.08   |       |       |
|            |                | CA_7B4      | Band 7  | 15M         | 2507.5  | 20825  | QPSK | 1         | 74                       |         | Band 7  | 5M          | 2834.3  | 2918                     |                 | 23.01           | 23.08   |       |       |
|            |                | CA_38C      | Band 38 | 20M         | 2585.1  | 37901  | QPSK | 1         | 0                        |         | Band 38 | 20M         | 2604.9  | 2783.1                   |                 | 23.45           | 23.33   |       |       |
|            |                | CA_38C4     | Band 38 | 20M         | 2585.1  | 37901  | QPSK | 1         | 0                        |         | 4x4MIMO | Band 38     | 20M     | 2604.9                   |                 | 2783.1          | 4x4MIMO | 23.35 | 23.33 |
|            |                | CA_41C      | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | Band 41 | 20M         | 2612.8  | 2791                     |                 |                 | 23.48   | 23.43 |       |
|            |                | CA_41C4     | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | 4x4MIMO | Band 41     | 20M     | 2612.8                   |                 | 2791            | 4x4MIMO | 23.05 | 23.43 |
|            |                | CA_66B      | Band 66 | 15M         | 1717.5  | 132047 | QPSK | 1         | 37                       |         | Band 66 | 5M          | 2126.8  | 66604                    |                 |                 | 23.04   | 23.08 |       |
|            |                | CA_66B4     | Band 66 | 15M         | 1717.5  | 132047 | QPSK | 1         | 37                       |         | 4x4MIMO | Band 66     | 5M      | 2126.8                   |                 | 66604           | 4x4MIMO | 23.03 | 23.08 |
|            | Non-Contiguous | CA_66C      | Band 66 | 20M         | 1745    | 132322 | QPSK | 1         | 0                        | 4x4MIMO | Band 66 | 20M         | 2174.8  | 67084                    | 4x4MIMO         | 23.13           | 23.27   |       |       |
|            |                | CA_66C4     | Band 66 | 20M         | 1745    | 132322 | QPSK | 1         | 0                        |         | Band 66 | 20M         | 2174.8  | 67084                    |                 | 4x4MIMO         | 22.97   | 23.27 |       |
|            |                | CA_4A-4A    | Band 4  | 20M         | 1732.5  | 20175  | QPSK | 1         | 0                        |         | Band 4  | 5M          | 2152.5  | 2375                     |                 |                 | 22.7    | 23.18 |       |
|            |                | CA_4A-4A4   | Band 4  | 20M         | 1732.5  | 20175  | QPSK | 1         | 0                        |         | 4x4MIMO | Band 4      | 5M      | 2152.5                   |                 | 2375            | 4x4MIMO | 23.39 | 23.18 |
|            |                | CA_41A-41A  | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | Band 41 | 5M          | 2687.5  | 41595                    |                 |                 | 23.3    | 23.43 |       |
|            |                | CA_41A-41A4 | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | 4x4MIMO | Band 41     | 5M      | 2687.5                   |                 | 41595           | 4x4MIMO | 23.04 | 23.43 |

## 3CA DL

## &lt;Inter-Band for Three Carrier Combination&gt; (two bands)

| Configure  |                  | PCC     |       |        |         |      |     |       | SCC1                     |         |         |        |         | SCC2                     |         |         |        |         | Power                    |                |                |
|------------|------------------|---------|-------|--------|---------|------|-----|-------|--------------------------|---------|---------|--------|---------|--------------------------|---------|---------|--------|---------|--------------------------|----------------|----------------|
|            |                  | LTE     | BW    | UL     | UL      | Mod. | UL# | UL    | DL Antenna Configuration | LTE     | BW      | DL     | DL      | DL Antenna Configuration | LTE     | BW      | DL     | DL      | DL Antenna Configuration | With CA        | Without CA     |
|            |                  | Band    | (MHz) | Freq.  | Channel |      | RB  | RB    |                          | Band    | (MHz)   | Freq.  | Channel |                          | Band    | (MHz)   | Freq.  | Channel |                          | Tx Power (dBm) | Tx Power (dBm) |
|            |                  |         |       | (MHz)  | Offset  |      |     | (MHz) |                          |         |         | (MHz)  |         |                          |         |         |        |         |                          |                |                |
| Inter-Band | CA_2A-7C         | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | 23.58          | 23.38          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | Band 2  | 20M     | 1960   | 900     |                          | 23.55          | 23.54          |
|            | CA_2A-7C4        | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0     | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | 20.57          | 23.38          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | Band 2  | 20M     | 1960   | 900     | 23.57                    | 23.54          |                |
|            | CA_2A-7A-7A      | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 5M      | 2687.5 | 3425    |                          | 23.62          | 23.38          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | Band 7  | 5M      | 2687.5 | 3425    |                          | Band 2  | 20M     | 1960   | 900     |                          | 23.57          | 23.54          |
|            | CA_2A-7A4-7A4    | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0     | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 5M      | 2687.5 | 3425    | 4x4MIMO                  | 20.66          | 23.38          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | Band 7  | 5M      | 2687.5 | 3425    | 4x4MIMO                  | Band 2  | 20M     | 1960   | 900     | 23.62                    | 23.54          |                |
|            | CA_4A-7C         | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | 23.05          | 23.18          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | Band 4  | 20M     | 2132.5 | 2175    |                          | 23.59          | 23.54          |
|            | CA_4A-7C4        | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0     | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | 21.81          | 23.18          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | 4x4MIMO | Band 7  | 20M    | 2674.8  | 3298                     | 4x4MIMO | Band 4  | 20M    | 2132.5  | 2175                     | 23.63          | 23.54          |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | 23.55          | 23.31          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | Band 5  | 10M     | 881.5  | 2525    |                          | 23.56          | 23.54          |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0     | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | 23.27          | 23.31          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0     |                          | 4x4MIMO | Band 7  | 20M    | 2674.8  | 3298                     | 4x4MIMO | Band 5  | 10M    | 881.5   | 2525                     | 22.39          | 23.54          |
|            | CA_5A-66A-66A    | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0     |                          | Band 66 | 20M     | 2155   | 66886   |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | 23.56          | 23.31          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0     |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | Band 5  | 10M     | 881.5  | 2525    |                          | 22.41          | 23.27          |
|            | CA_5A-66A4-66A4  | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0     |                          | Band 66 | 20M     | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M      | 2197.5 | 67311   | 4x4MIMO                  | 23.25          | 23.31          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0     |                          | 4x4MIMO | Band 66 | 5M     | 2197.5  | 67311                    | 4x4MIMO | Band 5  | 10M    | 881.5   | 2525                     | 22.41          | 23.27          |
|            | CA_12A-66A-66A   | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0     |                          | Band 66 | 20M     | 2155   | 66886   |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | 23.05          | 23.08          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0     |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | Band 12 | 10M     | 737.5  | 5095    |                          | 22.21          | 23.27          |
|            | CA_12A-66A4-66A4 | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0     |                          | Band 66 | 20M     | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M      | 2197.5 | 67311   | 4x4MIMO                  | 22.08          | 23.08          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0     |                          | 4x4MIMO | Band 66 | 5M     | 2197.5  | 67311                    | 4x4MIMO | Band 12 | 10M    | 737.5   | 5095                     | 22.5           | 23.27          |
|            | CA_26A-41C       | Band 26 | 15M   | 831.5  | 26865   | QPSK | 1   | 0     |                          | Band 41 | 20M     | 2593   | 40620   |                          | Band 41 | 20M     | 19.8   | 40818   |                          | 23.35          | 23.37          |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0     |                          | Band 41 | 20M     | 2612.8 | 40818   |                          | Band 26 | 15M     | 876.5  | 8865    |                          | 23.28          | 23.43          |
|            | CA_26A-41C4      | Band 26 | 15M   | 831.5  | 26865   | QPSK | 1   | 0     |                          | Band 41 | 20M     | 2593   | 40620   | 4x4MIMO                  | Band 41 | 20M     | 19.8   | 40818   | 4x4MIMO                  | 23.31          | 23.37          |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0     |                          | 4x4MIMO | Band 41 | 20M    | 2612.8  | 40818                    | 4x4MIMO | Band 26 | 15M    | 876.5   | 8865                     | 23.35          | 23.43          |

Reduced Power Mode for Sensor On  
2CA DL

| Configure  | CA List        | PCC          |         |             |         |        |      |           |                          | SCC     |         |             |         | Power                    |                 |                 |       |
|------------|----------------|--------------|---------|-------------|---------|--------|------|-----------|--------------------------|---------|---------|-------------|---------|--------------------------|-----------------|-----------------|-------|
|            |                | LTE          | BW      | UL          | UL      | Mod.   | UL#  | UL        | DL Antenna Configuration | LTE     | BW      | DL          | DL      | DL Antenna Configuration | With CA         | Without CA      |       |
|            |                | Band         | (MHz)   | Freq. (MHz) | Channel |        | RB   | RB Offset |                          | Band    | (MHz)   | Freq. (MHz) | Channel |                          | Tx. Power (dBm) | Tx. Power (dBm) |       |
| Inter-Band | CA_2A-5A       | Band 2       | 20M     | 1880        | 18900   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 16.42           | 16.56           |       |
|            | Band 5         | 10M          | 836.5   | 20525       | QPSK    | 1      | 0    |           | Band 2                   | 20M     | 1960    | 900         |         | 22.36                    | 22.26           |                 |       |
|            | CA_4A-5A       | Band 4       | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 16.61           | 16.69           |       |
|            | Band 5         | 10M          | 836.5   | 20525       | QPSK    | 1      | 0    |           | Band 4                   | 20M     | 2132.5  | 2175        |         | 22.45                    | 22.26           |                 |       |
|            | CA_4A-5A       | Band 4       | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 5  | 10M     | 881.5       | 2525    |                          | 16.49           | 16.69           |       |
|            | Band 5         | 10M          | 836.5   | 20525       | QPSK    | 1      | 0    |           | Band 4                   | 20M     | 2132.5  | 2175        | 4x4MIMO | 22.35                    | 22.26           |                 |       |
|            | CA_4A-12A      | Band 4       | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 12 | 10M     | 737.5       | 5095    |                          | 16.66           | 16.69           |       |
|            | Band 12        | 10M          | 707.5   | 23095       | QPSK    | 1      | 0    |           | Band 4                   | 20M     | 2132.5  | 2175        |         | 22.57                    | 23.08           |                 |       |
|            | CA_4A-12A      | Band 4       | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 12 | 10M     | 737.5       | 5095    |                          | 16.56           | 16.69           |       |
|            | Band 12        | 10M          | 707.5   | 23095       | QPSK    | 1      | 0    |           | Band 4                   | 20M     | 2132.5  | 2175        | 4x4MIMO | 22.45                    | 23.08           |                 |       |
|            | CA_4A-17A      | Band 4       | 10M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 17 | 10M     | 740         | 5790    |                          | 15.63           | 15.72           |       |
|            | Band 17        | 10M          | 710     | 23790       | QPSK    | 1      | 0    |           | Band 4                   | 10M     | 2132.5  | 2175        |         | 22.24                    | 23              |                 |       |
|            | CA_4A-17A      | Band 4       | 10M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 17 | 10M     | 740         | 5790    |                          | 15.7            | 15.72           |       |
|            | Band 17        | 10M          | 710     | 23790       | QPSK    | 1      | 0    |           | Band 4                   | 10M     | 2132.5  | 2175        | 4x4MIMO | 22.47                    | 23              |                 |       |
|            | CA_5A-38A      | Band 5       | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 38 | 20M     | 2595        | 38000   |                          | 22.46           | 22.26           |       |
|            | Band 38        | 20M          | 2595    | 38000       | QPSK    | 1      | 0    |           | Band 5                   | 10M     | 881.5   | 2525        |         | 18.05                    | 18.55           |                 |       |
|            | CA_5A-38A      | Band 5       | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 38 | 20M     | 2595        | 38000   | 4x4MIMO                  | 22.41           | 22.26           |       |
|            | Band 38        | 20M          | 2595    | 38000       | QPSK    | 1      | 0    | 4x4MIMO   | Band 5                   | 10M     | 881.5   | 2525        |         | 18.1                     | 18.55           |                 |       |
|            | CA_5A-41A      | Band 5       | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 41 | 20M     | 2593        | 40620   |                          | 22.42           | 22.26           |       |
|            | Band 41        | 20M          | 2593    | 40620       | QPSK    | 1      | 0    |           | Band 5                   | 10M     | 881.5   | 2525        |         | 18.85                    | 18.91           |                 |       |
|            | CA_5A-41A      | Band 5       | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 41 | 20M     | 2593        | 40620   | 4x4MIMO                  | 22.41           | 22.26           |       |
|            | Band 41        | 20M          | 2593    | 40620       | QPSK    | 1      | 0    | 4x4MIMO   | Band 5                   | 10M     | 881.5   | 2525        |         | 18.32                    | 18.91           |                 |       |
| Intra-Band | Contiguous     | CA_7B        | Band 7  | 15M         | 2507.5  | 20825  | QPSK | 1         | 74                       |         | Band 7  | 5M          | 2834.3  | 2918                     |                 | 16.11           | 16.36 |
|            |                | CA_7B4       | Band 7  | 15M         | 2507.5  | 20825  | QPSK | 1         | 74                       | 4x4MIMO | Band 7  | 5M          | 2834.3  | 2918                     | 4x4MIMO         | 16.23           | 16.36 |
|            |                | CA_38C       | Band 38 | 20M         | 2585.1  | 37901  | QPSK | 1         | 0                        |         | Band 38 | 20M         | 2604.9  | 38099                    |                 | 18.6            | 18.55 |
|            |                | CA_38C4      | Band 38 | 20M         | 2585.1  | 37901  | QPSK | 1         | 0                        | 4x4MIMO | Band 38 | 20M         | 2604.9  | 38099                    | 4x4MIMO         | 18.47           | 18.55 |
|            |                | CA_41C       | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | Band 41 | 20M         | 2612.8  | 40818                    |                 | 18.9            | 18.91 |
|            |                | CA_41C4      | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        | 4x4MIMO | Band 41 | 20M         | 2612.8  | 40818                    | 4x4MIMO         | 18.2            | 18.91 |
|            |                | CA_66B       | Band 66 | 15M         | 1717.5  | 132047 | QPSK | 1         | 37                       |         | Band 66 | 5M          | 2126.8  | 66604                    |                 | 16.02           | 16.43 |
|            |                | CA_66B4      | Band 66 | 15M         | 1717.5  | 132047 | QPSK | 1         | 37                       | 4x4MIMO | Band 66 | 5M          | 2126.8  | 66604                    | 4x4MIMO         | 16.38           | 16.43 |
|            | Non-Contiguous | CA_66C       | Band 66 | 20M         | 1745    | 132322 | QPSK | 1         | 0                        |         | Band 66 | 20M         | 2174.8  | 67084                    |                 | 14.67           | 16.85 |
|            |                | CA_66C4      | Band 66 | 20M         | 1745    | 132322 | QPSK | 1         | 0                        | 4x4MIMO | Band 66 | 20M         | 2174.8  | 67084                    | 4x4MIMO         | 14.46           | 16.85 |
|            |                | CA_4A-4A     | Band 4  | 20M         | 1732.5  | 20175  | QPSK | 1         | 0                        |         | Band 4  | 5M          | 2152.5  | 2375                     |                 | 16.66           | 16.69 |
|            |                | CA_4A4-4A4   | Band 4  | 20M         | 1732.5  | 20175  | QPSK | 1         | 0                        | 4x4MIMO | Band 4  | 5M          | 2152.5  | 2375                     | 4x4MIMO         | 16.67           | 16.69 |
|            |                | CA_41A-41A   | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | Band 41 | 5M          | 2687.5  | 41565                    |                 | 18.87           | 18.91 |
|            |                | CA_41A4-41A4 | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        | 4x4MIMO | Band 41 | 5M          | 2687.5  | 41565                    | 4x4MIMO         | 18.16           | 18.91 |

## 3CA DL

## &lt;Inter-Band for Three Carrier Combination&gt; (two bands)

| Configure  |                  | PCC     |       |        |         |      |     |        | SCC1                     |         |         |        |         | SCC2                     |         |         |        |         | Power                    |                |                |
|------------|------------------|---------|-------|--------|---------|------|-----|--------|--------------------------|---------|---------|--------|---------|--------------------------|---------|---------|--------|---------|--------------------------|----------------|----------------|
|            |                  | LTE     | BW    | UL     | UL      | Mod. | UL# | UL     | DL Antenna Configuration | LTE     | BW      | DL     | DL      | DL Antenna Configuration | LTE     | BW      | DL     | DL      | DL Antenna Configuration | With CA        | Without CA     |
|            |                  | Band    | (MHz) | Freq.  | Channel |      | RB  | RB     |                          | Band    | (MHz)   | Freq.  | Channel |                          | Band    | (MHz)   | Freq.  | Channel |                          | Tx Power (dBm) | Tx Power (dBm) |
|            |                  |         |       | Offset | Offset  |      |     | Offset |                          |         |         | Offset | Offset  |                          |         |         | Offset |         |                          |                |                |
| Inter-Band | CA_2A-7C         | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      | Band 7                   | 20M     | 2655    | 3100   |         | Band 7                   | 20M     | 2674.8  | 3298   |         | 16.2                     | 16.56          |                |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2674.8 |         | 3298                     | Band 2  | 20M     | 1960   |         | 900                      | 16.91          | 16.83          |
|            | CA_2A-7C4        | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | 15.21          | 16.56          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 2  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | Band 2  | 20M     | 1960   | 900     | 15.87                    | 16.83          |                |
|            | CA_2A-7A-7A      | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 5M      | 2687.5 | 3425    |                          | 16.21          | 16.56          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 2  | 20M     | 2687.5 | 3425    |                          | Band 2  | 20M     | 1960   | 900     |                          | 16.87          | 16.83          |
|            | CA_2A-7A4-7A4    | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 5M      | 2687.5 | 3425    | 4x4MIMO                  | 15.68          | 16.56          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 5M      | 2687.5 | 3425    | 4x4MIMO                  | Band 2  | 20M     | 1960   | 900     | 16.02                    | 16.83          |                |
|            | CA_4A-7C         | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | 16.57          | 16.69          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | Band 4  | 20M     | 2132.5 | 2175    |                          | 17.05          | 16.83          |
|            | CA_4A-7C4        | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | 15.96          | 16.69          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | Band 4  | 20M     | 2132.5 | 2175    | 4x4MIMO                  | 15.74          | 16.83          |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2655   | 3100    |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | 23.56          | 23.31          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2674.8 | 3298    |                          | Band 5  | 10M     | 881.5  | 2525    |                          | 16.99          | 16.83          |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 7  | 20M     | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M     | 2674.8 | 3298    | 4x4MIMO                  | 22.28          | 23.31          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | 4x4MIMO | Band 7  | 20M    | 2674.8  | 3298                     | 4x4MIMO | Band 5  | 10M    | 881.5   | 2525                     | 15.84          | 16.83          |
|            | CA_5A-66A-66A    | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 66 | 20M     | 2155   | 66886   |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | 23.55          | 23.31          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | Band 5  | 10M     | 881.5  | 2525    |                          | 16.55          | 16.85          |
|            | CA_5A-66A4-66A4  | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 66 | 20M     | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M      | 2197.5 | 67311   | 4x4MIMO                  | 22.55          | 23.31          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | 4x4MIMO | Band 66 | 5M     | 2197.5  | 67311                    | 4x4MIMO | Band 5  | 10M    | 881.5   | 2525                     | 16.7           | 16.85          |
|            | CA_12A-66A-66A   | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0      |                          | Band 66 | 20M     | 2155   | 66886   |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | 22.74          | 23.08          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M      | 2197.5 | 67311   |                          | Band 12 | 10M     | 737.5  | 5095    |                          | 16.47          | 16.85          |
|            | CA_12A-66A4-66A4 | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0      |                          | Band 66 | 20M     | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M      | 2197.5 | 67311   | 4x4MIMO                  | 21.68          | 23.08          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | 4x4MIMO | Band 66 | 5M     | 2197.5  | 67311                    | 4x4MIMO | Band 12 | 10M    | 737.5   | 5095                     | 16.77          | 16.85          |
|            | CA_26A_41C       | Band 26 | 15M   | 831.5  | 26865   | QPSK | 1   | 0      |                          | Band 41 | 20M     | 2593   | 40620   |                          | Band 41 | 20M     | 19.8   | 40818   |                          | 22.12          | 22.29          |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0      |                          | Band 41 | 20M     | 2612.8 | 40818   |                          | 4x4MIMO | Band 26 | 15M    | 876.5   |                          | 8865           | 18.74          |
|            | CA_26A_41C4      | Band 26 | 15M   | 831.5  | 26865   | QPSK | 1   | 0      |                          | Band 41 | 20M     | 2593   | 40620   | 4x4MIMO                  | Band 41 | 20M     | 19.8   | 40818   | 4x4MIMO                  | 22.15          | 22.29          |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0      |                          | 4x4MIMO | Band 41 | 20M    | 2612.8  | 40818                    | 4x4MIMO | Band 26 | 15M    | 876.5   | 8865                     | 18.68          | 18.91          |

Reduced Power Mode for Hotspot on  
2CA DL

| Configure  | CA List        | PCC         |         |             |         |        |      |           |                          | SCC     |         |             |         | Power                    |                 |                 |       |
|------------|----------------|-------------|---------|-------------|---------|--------|------|-----------|--------------------------|---------|---------|-------------|---------|--------------------------|-----------------|-----------------|-------|
|            |                | LTE         | BW      | UL          | UL      | Mod.   | UL#  | UL        | DL Antenna Configuration | LTE     | BW      | DL          | DL      | DL Antenna Configuration | With CA         | Without CA      |       |
|            |                | Band        | (MHz)   | Freq. (MHz) | Channel |        | RB   | RB Offset |                          | Band    | (MHz)   | Freq. (MHz) | Channel |                          | Tx. Power (dBm) | Tx. Power (dBm) |       |
| Inter-Band | CA_2A-5A       | Band 2      | 20M     | 1880        | 18900   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 15.04           | 15.13           |       |
|            |                | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 2  | 20M     | 1960        | 900     |                          | 22.36           | 22.26           |       |
|            | CA_4A-5A       | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 14.67           | 15.46           |       |
|            |                | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    |                          | 22.45           | 22.26           |       |
|            | CA_4A-5A       | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 5  | 10M     | 881.5       | 2525    |                          | 13.24           | 15.46           |       |
|            |                | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    | 4x4MIMO                  | 22.49           | 22.26           |       |
|            | CA_4A-12A      | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 12 | 10M     | 737.5       | 5095    |                          | 14.71           | 15.46           |       |
|            |                | Band 12     | 10M     | 707.5       | 23095   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    |                          | 21.65           | 23.08           |       |
|            | CA_4A-12A      | Band 4      | 20M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 12 | 10M     | 737.5       | 5095    |                          | 13.36           | 15.46           |       |
|            |                | Band 12     | 10M     | 707.5       | 23095   | QPSK   | 1    | 0         |                          | Band 4  | 20M     | 2132.5      | 2175    | 4x4MIMO                  | 21.43           | 23.08           |       |
|            | CA_4A-17A      | Band 4      | 10M     | 1732.5      | 20175   | QPSK   | 1    | 0         |                          | Band 17 | 10M     | 740         | 5790    |                          | 14.68           | 15.29           |       |
|            |                | Band 17     | 10M     | 710         | 23790   | QPSK   | 1    | 0         |                          | Band 4  | 10M     | 2132.5      | 2175    |                          | 21.23           | 23              |       |
|            | CA_4A-17A      | Band 4      | 10M     | 1732.5      | 20175   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 17 | 10M     | 740         | 5790    |                          | 14              | 15.29           |       |
|            |                | Band 17     | 10M     | 710         | 23790   | QPSK   | 1    | 0         |                          | Band 4  | 10M     | 2132.5      | 2175    | 4x4MIMO                  | 21.43           | 23              |       |
|            | CA_5A-38A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 38 | 20M     | 2595        | 38000   |                          | 22.46           | 22.26           |       |
|            |                | Band 38     | 20M     | 2595        | 38000   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 15.27           | 15.78           |       |
|            | CA_5A-38A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 38 | 20M     | 2595        | 38000   | 4x4MIMO                  | 22.39           | 22.26           |       |
|            |                | Band 38     | 20M     | 2595        | 38000   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 5  | 10M     | 881.5       | 2525    |                          | 14.25           | 15.78           |       |
|            | CA_5A-41A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 41 | 20M     | 2593        | 40620   |                          | 22.33           | 22.26           |       |
|            |                | Band 41     | 20M     | 2593        | 40620   | QPSK   | 1    | 0         |                          | Band 5  | 10M     | 881.5       | 2525    |                          | 16              | 16.12           |       |
|            | CA_5A-41A      | Band 5      | 10M     | 836.5       | 20525   | QPSK   | 1    | 0         |                          | Band 41 | 20M     | 2593        | 40620   | 4x4MIMO                  | 22.51           | 22.26           |       |
|            |                | Band 41     | 20M     | 2593        | 40620   | QPSK   | 1    | 0         | 4x4MIMO                  | Band 5  | 10M     | 881.5       | 2525    |                          | 15.56           | 16.12           |       |
| Intra-Band | Contiguous     | CA_7B       | Band 7  | 15M         | 2507.5  | 26825  | QPSK | 1         | 74                       |         | Band 7  | 5M          | 2834.3  | 2918                     |                 | 12.97           | 13.11 |
|            |                | CA_7B4      | Band 7  | 15M         | 2507.5  | 26825  | QPSK | 1         | 74                       | 4x4MIMO | Band 7  | 5M          | 2834.3  | 2918                     | 4x4MIMO         | 13.03           | 13.11 |
|            |                | CA_38C      | Band 38 | 20M         | 2585.1  | 37901  | QPSK | 1         | 0                        |         | Band 38 | 20M         | 2604.9  | 38099                    |                 | 15.75           | 15.78 |
|            |                | CA_38C4     | Band 38 | 20M         | 2585.1  | 37901  | QPSK | 1         | 0                        | 4x4MIMO | Band 38 | 20M         | 2604.9  | 38099                    | 4x4MIMO         | 15.87           | 15.78 |
|            |                | CA_41C      | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | Band 41 | 20M         | 2612.8  | 40818                    |                 | 16.03           | 16.12 |
|            |                | CA_41C4     | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        | 4x4MIMO | Band 41 | 20M         | 2612.8  | 40818                    | 4x4MIMO         | 15.61           | 16.12 |
|            |                | CA_66B      | Band 66 | 15M         | 1717.5  | 132047 | QPSK | 1         | 37                       |         | Band 66 | 5M          | 2126.8  | 66604                    |                 | 16.37           | 16.44 |
|            |                | CA_66B4     | Band 66 | 15M         | 1717.5  | 132047 | QPSK | 1         | 37                       | 4x4MIMO | Band 66 | 5M          | 2126.8  | 66604                    | 4x4MIMO         | 16.28           | 16.44 |
|            | Non-Contiguous | CA_66C      | Band 66 | 20M         | 1745    | 132322 | QPSK | 1         | 0                        |         | Band 66 | 20M         | 2174.8  | 67084                    |                 | 14.63           | 16.43 |
|            |                | CA_66C4     | Band 66 | 20M         | 1745    | 132322 | QPSK | 1         | 0                        | 4x4MIMO | Band 66 | 20M         | 2174.8  | 67084                    | 4x4MIMO         | 14.23           | 16.43 |
|            |                | CA_4A-4A    | Band 4  | 20M         | 1732.5  | 20175  | QPSK | 1         | 0                        |         | Band 4  | 5M          | 2152.5  | 2375                     |                 | 14.66           | 15.46 |
|            |                | CA_4A-4A4   | Band 4  | 20M         | 1732.5  | 20175  | QPSK | 1         | 0                        | 4x4MIMO | Band 4  | 5M          | 2152.5  | 2375                     | 4x4MIMO         | 14.55           | 15.46 |
|            |                | CA_41A-41A  | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        |         | Band 41 | 5M          | 2687.5  | 41565                    |                 | 16.01           | 16.12 |
|            |                | CA_41A-41A4 | Band 41 | 20M         | 2593    | 40620  | QPSK | 1         | 0                        | 4x4MIMO | Band 41 | 5M          | 2687.5  | 41565                    | 4x4MIMO         | 15.67           | 16.12 |

## 3CA DL

&lt;Inter-Band for Three Carrier Combination&gt; (two bands)

| Configure  |                  | PCC     |       |        |         |      |     |        | SCC1                     |         |       |        |         | SCC2                     |         |       |        |         | Power                    |                |                |
|------------|------------------|---------|-------|--------|---------|------|-----|--------|--------------------------|---------|-------|--------|---------|--------------------------|---------|-------|--------|---------|--------------------------|----------------|----------------|
|            |                  | LTE     | BW    | UL     | UL      | Mod. | UL# | UL     | DL Antenna Configuration | LTE     | BW    | DL     | DL      | DL Antenna Configuration | LTE     | BW    | DL     | DL      | DL Antenna Configuration | With CA        | Without CA     |
|            |                  | Band    | (MHz) | Freq.  | Channel |      | RB  | RB     |                          | Band    | (MHz) | Freq.  | Channel |                          | Band    | (MHz) | Freq.  | Channel |                          | Tx Power (dBm) | Tx Power (dBm) |
|            |                  |         |       | Offset | Offset  |      |     | Offset |                          |         |       | Offset | Offset  |                          |         |       | Offset |         |                          |                |                |
| Inter-Band | CA_2A-7C         | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | 15.22          | 15.13          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 2  | 20M   | 1960   | 900     |                          | 13.08          | 13.17          |
|            | CA_2A-7C4        | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | 14.2           | 15.13          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 2  | 20M   | 1960   | 900     |                          | 11.73          | 13.17          |
|            | CA_2A-7A-7A      | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 5M    | 2687.5 | 3425    |                          | 15.19          | 15.13          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 5M    | 2687.5 | 3425    |                          | Band 2  | 20M   | 1960   | 900     |                          | 12.97          | 13.17          |
|            | CA_2A-7A4-7A4    | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 5M    | 2687.5 | 3425    | 4x4MIMO                  | 14.17          | 15.13          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 5M    | 2687.5 | 3425    |                          | Band 2  | 20M   | 1960   | 900     |                          | 11.7           | 13.17          |
|            | CA_4A-7C         | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | 14.83          | 15.46          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 4  | 20M   | 2132.5 | 2175    |                          | 13.21          | 13.17          |
|            | CA_4A-7C4        | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | 15.35          | 15.46          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 4  | 20M   | 2132.5 | 2175    |                          | 11.67          | 13.17          |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | 23.56          | 23.31          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 5  | 10M   | 881.5  | 2525    |                          | 13.15          | 13.17          |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | 22.42          | 23.31          |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 5  | 10M   | 881.5  | 2525    |                          | 12.55          | 13.17          |
|            | CA_5A-66A-66A    | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 66 | 20M   | 2155   | 66886   |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | 23.55          | 23.31          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | Band 5  | 10M   | 881.5  | 2525    |                          | 16.4           | 16.43          |
|            | CA_5A-66A4-66A4  | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      | 4x4MIMO                  | Band 66 | 20M   | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M    | 2197.5 | 67311   | 4x4MIMO                  | 22.32          | 23.31          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | Band 5  | 10M   | 881.5  | 2525    |                          | 14.1           | 16.43          |
|            | CA_12A-66A-66A   | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0      |                          | Band 66 | 20M   | 2155   | 66886   |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | 21.8           | 23.08          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | Band 12 | 10M   | 737.5  | 5095    |                          | 15.41          | 16.43          |
|            | CA_12A-66A4-66A4 | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0      | 4x4MIMO                  | Band 66 | 20M   | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M    | 2197.5 | 67311   | 4x4MIMO                  | 22.03          | 23.08          |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | Band 12 | 10M   | 737.5  | 5095    |                          | 16.32          | 16.43          |
|            | CA_26A_41C       | Band 26 | 15M   | 831.5  | 26865   | QPSK | 1   | 0      |                          | Band 41 | 20M   | 2593   | 40620   |                          | Band 41 | 20M   | 19.8   | 40818   |                          | 21.85          | 22.29          |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0      |                          | Band 41 | 20M   | 2612.8 | 40818   |                          | Band 26 | 15M   | 876.5  | 8865    |                          | 16.05          | 16.12          |
|            | CA_26A_41C4      | Band 26 | 15M   | 831.5  | 26865   | QPSK | 1   | 0      | 4x4MIMO                  | Band 41 | 20M   | 2593   | 40620   | 4x4MIMO                  | Band 41 | 20M   | 19.8   | 40818   | 4x4MIMO                  | 22.12          | 22.29          |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0      |                          | Band 41 | 20M   | 2612.8 | 40818   |                          | Band 26 | 15M   | 876.5  | 8865    |                          | 16.11          | 16.12          |

Reduced Power Mode for Handheld on  
2CA DL

| Configure  |            | CA List | PCC     |        |        |         |      |        |         |                          | SCC     |        |        |         |                          | Power     |            |
|------------|------------|---------|---------|--------|--------|---------|------|--------|---------|--------------------------|---------|--------|--------|---------|--------------------------|-----------|------------|
|            |            |         | LTE     | BW     | UL     | UL      | Mod. | UL#    | UL      | DL Antenna Configuration | LTE     | BW     | DL     | DL      | DL Antenna Configuration | With CA   | Without CA |
|            |            |         | Band    | (MHz)  | Freq.  | Channel |      | RB     | RB      |                          | Band    | (MHz)  | Freq.  | Channel |                          | Tx. Power | Tx. Power  |
|            |            |         |         |        | (MHz)  |         |      | Offset | (MHz)   |                          |         |        | (dBm)  | (dBm)   |                          |           |            |
| Inter-Band | CA_2A-5A   | Band 2  | 20M     | 1880   | 18900  | QPSK    | 1    | 0      |         | Band 5                   | 10M     | 881.5  | 2525   |         | 20.06                    | 20.38     |            |
|            |            | Band 5  | 10M     | 836.5  | 20525  | QPSK    | 1    | 0      |         | Band 2                   | 20M     | 1960   | 900    |         | 23.51                    | 23.31     |            |
|            | CA_4A-5A   | Band 4  | 20M     | 1732.5 | 20175  | QPSK    | 1    | 0      |         | Band 5                   | 10M     | 881.5  | 2525   |         | 19.82                    | 20.23     |            |
|            |            | Band 5  | 10M     | 836.5  | 20525  | QPSK    | 1    | 0      |         | Band 4                   | 20M     | 2132.5 | 2175   |         | 23.27                    | 23.31     |            |
|            | CA_4A-5A   | Band 4  | 20M     | 1732.5 | 20175  | QPSK    | 1    | 0      | 4x4MIMO | Band 5                   | 10M     | 881.5  | 2525   |         | 19.76                    | 20.23     |            |
|            |            | Band 5  | 10M     | 836.5  | 20525  | QPSK    | 1    | 0      |         | Band 4                   | 20M     | 2132.5 | 2175   | 4x4MIMO | 22.63                    | 23.31     |            |
|            | CA_4A-12A  | Band 4  | 20M     | 1732.5 | 20175  | QPSK    | 1    | 0      |         | Band 12                  | 10M     | 737.5  | 5095   |         | 19.79                    | 20.23     |            |
|            |            | Band 12 | 10M     | 707.5  | 23095  | QPSK    | 1    | 0      |         | Band 4                   | 20M     | 2132.5 | 2175   |         | 21.78                    | 23.08     |            |
|            | CA_4A-12A  | Band 4  | 20M     | 1732.5 | 20175  | QPSK    | 1    | 0      | 4x4MIMO | Band 12                  | 10M     | 737.5  | 5095   |         | 19.79                    | 20.23     |            |
|            |            | Band 12 | 10M     | 707.5  | 23095  | QPSK    | 1    | 0      |         | Band 4                   | 20M     | 2132.5 | 2175   | 4x4MIMO | 21.87                    | 23.08     |            |
|            | CA_4A-17A  | Band 4  | 10M     | 1732.5 | 20175  | QPSK    | 1    | 0      |         | Band 17                  | 10M     | 740    | 5790   |         | 19.83                    | 19.85     |            |
|            |            | Band 17 | 10M     | 710    | 23790  | QPSK    | 1    | 0      |         | Band 4                   | 10M     | 2132.5 | 2175   |         | 21.47                    | 23        |            |
|            | CA_4A-17A  | Band 4  | 10M     | 1732.5 | 20175  | QPSK    | 1    | 0      | 4x4MIMO | Band 17                  | 10M     | 740    | 5790   |         | 19.66                    | 19.85     |            |
|            |            | Band 17 | 10M     | 710    | 23790  | QPSK    | 1    | 0      |         | Band 4                   | 10M     | 2132.5 | 2175   | 4x4MIMO | 21.78                    | 23        |            |
| Intra-Band | Contiguous | CA_7B   | Band 7  | 15M    | 2507.5 | 20825   | QPSK | 1      | 74      |                          | Band 7  | 5M     | 2834.3 | 2918    |                          | 20.73     | 20.98      |
|            |            | CA_7B4  | Band 7  | 15M    | 2507.5 | 20825   | QPSK | 1      | 74      | 4x4MIMO                  | Band 7  | 5M     | 2834.3 | 2918    | 4x4MIMO                  | 20.78     | 20.98      |
|            |            | CA_66B  | Band 66 | 15M    | 1717.5 | 132047  | QPSK | 1      | 37      |                          | Band 66 | 5M     | 2126.8 | 66604   |                          | 20.12     | 20.39      |
|            |            | CA_66B4 | Band 66 | 15M    | 1717.5 | 132047  | QPSK | 1      | 37      | 4x4MIMO                  | Band 66 | 5M     | 2126.8 | 66604   | 4x4MIMO                  | 20.21     | 20.39      |
|            |            | CA_66C  | Band 66 | 20M    | 1745   | 132322  | QPSK | 1      | 0       |                          | Band 66 | 20M    | 2174.8 | 67084   |                          | 20.3      | 20.35      |
|            |            | CA_66C4 | Band 66 | 20M    | 1745   | 132322  | QPSK | 1      | 0       | 4x4MIMO                  | Band 66 | 20M    | 2174.8 | 67084   | 4x4MIMO                  | 19.12     | 20.35      |

## 3CA DL

## &lt;Inter-Band for Three Carrier Combination&gt; (two bands)

| Configure  |                  | POC     |       |        |         |      |     |        | SCC1                     |         |       |        |         | SCC2                     |         |       |        |         | Power                    |                 |                 |
|------------|------------------|---------|-------|--------|---------|------|-----|--------|--------------------------|---------|-------|--------|---------|--------------------------|---------|-------|--------|---------|--------------------------|-----------------|-----------------|
|            |                  | LTE     | BW    | UL     | UL      | Mod. | UL# | UL     | DL Antenna Configuration | LTE     | BW    | DL     | DL      | DL Antenna Configuration | LTE     | BW    | DL     | DL      | DL Antenna Configuration | With CA         | Without CA      |
|            |                  | Band    | (MHz) | Freq.  | Channel |      | RB  | Offset |                          | Band    | (MHz) | Freq.  | Channel |                          | Band    | (MHz) | Freq.  | Channel |                          | Tx. Power (dBm) | Tx. Power (dBm) |
|            |                  |         |       | (MHz)  |         |      |     |        |                          |         |       | (MHz)  |         |                          |         |       | (MHz)  |         |                          |                 |                 |
| Inter-Band | CA_2A-7C         | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | 20.17           | 20.38           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 2  | 20M   | 1960   | 900     |                          | 21.34           | 21.46           |
|            | CA_2A-7C4        | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | 20.03           | 20.38           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | Band 2  | 20M   | 1960   | 900     |                          | 20.79           | 21.46           |
|            | CA_2A-7A-7A      | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 5M    | 2687.5 | 3425    |                          | 20.19           | 20.38           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 5M    | 2687.5 | 3425    |                          | Band 2  | 20M   | 1960   | 900     |                          | 21.23           | 21.46           |
|            | CA_2A-7A4-7A4    | Band 2  | 20M   | 1880   | 18900   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 5M    | 2687.5 | 3425    | 4x4MIMO                  | 20.02           | 20.38           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 5M    | 2687.5 | 3425    | 4x4MIMO                  | Band 2  | 20M   | 1960   | 900     |                          | 19.71           | 21.46           |
|            | CA_4A-7C         | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | 19.82           | 20.23           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 4  | 20M   | 2132.5 | 2175    |                          | 21.31           | 21.46           |
|            | CA_4A4-7C4       | Band 4  | 20M   | 1732.5 | 20175   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | 18.23           | 20.23           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | Band 4  | 20M   | 2132.5 | 2175    | 4x4MIMO                  | 19.7            | 21.46           |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | 23.37           | 23.31           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2674.8 | 3298    |                          | Band 5  | 10M   | 881.5  | 2525    |                          | 21.34           | 21.46           |
|            | CA_5A-7C4        | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 7  | 20M   | 2655   | 3100    | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | 22.73           | 23.31           |
|            |                  | Band 7  | 20M   | 2535   | 21100   | QPSK | 1   | 0      | 4x4MIMO                  | Band 7  | 20M   | 2674.8 | 3298    | 4x4MIMO                  | Band 5  | 10M   | 881.5  | 2525    |                          | 19.63           | 21.46           |
|            | CA_5A-66A-66A    | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 66 | 20M   | 2155   | 66886   |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | 23.35           | 23.31           |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | Band 5  | 10M   | 881.5  | 2525    |                          | 19.48           | 20.35           |
|            | CA_5A-66A4-66A4  | Band 5  | 10M   | 836.5  | 20525   | QPSK | 1   | 0      |                          | Band 66 | 20M   | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M    | 2197.5 | 67311   | 4x4MIMO                  | 22.75           | 23.31           |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      | 4x4MIMO                  | Band 66 | 5M    | 2197.5 | 67311   | 4x4MIMO                  | Band 5  | 10M   | 881.5  | 2525    |                          | 19.23           | 20.35           |
|            | CA_12A-66A-66A   | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0      |                          | Band 66 | 20M   | 2155   | 66886   |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | 21.8            | 23.08           |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      |                          | Band 66 | 5M    | 2197.5 | 67311   |                          | Band 12 | 10M   | 737.5  | 5095    |                          | 20.3            | 20.35           |
|            | CA_12A-66A4-66A4 | Band 12 | 10M   | 707.5  | 23095   | QPSK | 1   | 0      |                          | Band 66 | 20M   | 2155   | 66886   | 4x4MIMO                  | Band 66 | 5M    | 2197.5 | 67311   | 4x4MIMO                  | 22.01           | 23.08           |
|            |                  | Band 66 | 20M   | 1745   | 132322  | QPSK | 1   | 0      | 4x4MIMO                  | Band 66 | 5M    | 2197.5 | 67311   | 4x4MIMO                  | Band 12 | 10M   | 737.5  | 5095    |                          | 19.16           | 20.35           |
|            | CA_26A-41C       | Band 26 | 15M   | 831.5  | 26965   | QPSK | 1   | 0      |                          | Band 41 | 20M   | 2593   | 40620   |                          | Band 41 | 20M   | 19.8   | 40818   |                          | 23.28           | 23.37           |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0      |                          | Band 41 | 20M   | 2612.8 | 40818   |                          | Band 26 | 15M   | 876.5  | 8865    |                          | 23.19           | 23.43           |
|            | CA_26A-41C4      | Band 26 | 15M   | 831.5  | 26965   | QPSK | 1   | 0      |                          | Band 41 | 20M   | 2593   | 40620   | 4x4MIMO                  | Band 41 | 20M   | 19.8   | 40818   | 4x4MIMO                  | 23.31           | 23.37           |
|            |                  | Band 41 | 20M   | 2593   | 40620   | QPSK | 1   | 0      | 4x4MIMO                  | Band 41 | 20M   | 2612.8 | 40818   | 4x4MIMO                  | Band 26 | 15M   | 876.5  | 8865    |                          | 23.28           | 23.43           |



## Full Power Mode

| n41 for FCC     |            |         |           |                          |                             |                           |                        |             |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|-------------|
| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Channel         |            |         |           | 509202                   | 518598                      | 528000                    |                        |             |
| Frequency (MHz) |            |         |           | 2546.01                  | 2592.99                     | 2640                      |                        |             |
| 100             | PI/2 BPSK  | 1       | 1         | 21.95                    | 21.64                       | 21.84                     | 23.0                   | 0.0         |
| 100             | PI/2 BPSK  | 1       | 137       | 22.94                    | 22.82                       | 22.79                     |                        |             |
| 100             | PI/2 BPSK  | 1       | 271       | 22.90                    | 22.42                       | 22.81                     |                        |             |
| 100             | PI/2 BPSK  | 135     | 0         | 22.07                    | 22.45                       | 22.01                     | 23.0                   | 0.0         |
| 100             | PI/2 BPSK  | 135     | 69        | 22.51                    | 22.84                       | 22.54                     |                        |             |
| 100             | PI/2 BPSK  | 135     | 138       | 22.52                    | 22.58                       | 22.13                     |                        |             |
| 100             | PI/2 BPSK  | 270     | 0         | 22.46                    | 22.43                       | 22.12                     | 22.5                   | 0.5         |
| 100             | QPSK       | 1       | 1         | 21.86                    | 21.72                       | 21.85                     | 23.0                   | 0.0         |
| 100             | QPSK       | 1       | 137       | 22.98                    | 22.92                       | 22.90                     |                        |             |
| 100             | QPSK       | 1       | 271       | 22.89                    | 22.78                       | 22.67                     |                        |             |
| 100             | QPSK       | 135     | 0         | 21.97                    | 22.03                       | 21.88                     | 23.0                   | 0.0         |
| 100             | QPSK       | 135     | 69        | 22.97                    | 22.85                       | 22.94                     |                        |             |
| 100             | QPSK       | 135     | 138       | 22.32                    | 22.23                       | 22.64                     |                        |             |
| 100             | QPSK       | 270     | 0         | 21.96                    | 21.94                       | 21.79                     | 22.0                   | 1.0         |
| 100             | 16QAM      | 1       | 1         | 21.82                    | 21.77                       | 21.91                     | 22.0                   | 1.0         |
| 100             | 64QAM      | 1       | 1         | 20.37                    | 20.46                       | 20.11                     | 20.5                   | 2.5         |
| 100             | 256QAM     | 1       | 1         | 18.29                    | 18.34                       | 18.44                     | 18.5                   | 4.5         |
| Channel         |            |         |           | 508200                   | 518598                      | 528996                    | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |            |         |           | 2541                     | 2592.99                     | 2644.98                   |                        |             |
| 90              | QPSK       | 1       | 120       | 22.92                    | 22.90                       | 22.95                     | 23.0                   | 0.0         |
| Channel         |            |         |           | 507204                   | 518598                      | 529998                    | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |            |         |           | 2536.02                  | 2592.99                     | 2649.99                   |                        |             |
| 80              | QPSK       | 1       | 109       | 22.96                    | 22.95                       | 22.92                     | 23.0                   | 0.0         |
| Channel         |            |         |           | 505200                   | 518598                      | 531996                    | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |            |         |           | 2526                     | 2592.99                     | 2659.98                   |                        |             |
| 60              | QPSK       | 1       | 81        | 22.78                    | 22.84                       | 22.92                     | 23.0                   | 0.0         |
| Channel         |            |         |           | 504204                   | 518598                      | 532998                    | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |            |         |           | 2521.02                  | 2592.99                     | 2664.99                   |                        |             |
| 50              | QPSK       | 1       | 67        | 22.86                    | 22.92                       | 22.91                     | 23.0                   | 0.0         |
| Channel         |            |         |           | 503202                   | 518598                      | 534000                    | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |            |         |           | 2516.01                  | 2592.99                     | 2670                      |                        |             |
| 40              | QPSK       | 1       | 53        | 22.86                    | 22.87                       | 22.85                     | 23.0                   | 0.0         |
| Channel         |            |         |           | 501204                   | 518598                      | 535998                    | Tune-up limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |            |         |           | 2506.02                  | 2592.99                     | 2679.99                   |                        |             |
| 20              | QPSK       | 1       | 26        | 22.81                    | 22.86                       | 22.84                     | 23.0                   | 0.0         |



n41 for FCC For Head&amp;Body Worn

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 509202                | 518598                   | 528000                 | 16.5                | 0.0      |
| Frequency (MHz) |            |         |           | 2546.01               | 2592.99                  | 2640                   |                     |          |
| 100             | PI/2 BPSK  | 1       | 1         | 15.04                 | 15.44                    | 15.46                  | 16.5                | 0.0      |
| 100             | PI/2 BPSK  | 1       | 137       | 15.00                 | 15.03                    | 15.01                  |                     |          |
| 100             | PI/2 BPSK  | 1       | 271       | 15.07                 | 15.46                    | 14.99                  |                     |          |
| 100             | PI/2 BPSK  | 135     | 0         | 15.10                 | 15.19                    | 15.02                  | 16.5                | 0.0      |
| 100             | PI/2 BPSK  | 135     | 69        | 15.03                 | 15.05                    | 15.05                  |                     |          |
| 100             | PI/2 BPSK  | 135     | 138       | 15.06                 | 15.16                    | 14.87                  |                     |          |
| 100             | PI/2 BPSK  | 270     | 0         | 15.01                 | 15.06                    | 15.03                  | 16.5                | 0.0      |
| 100             | QPSK       | 1       | 1         | 15.06                 | 15.01                    | 15.06                  |                     |          |
| 100             | QPSK       | 1       | 137       | 15.58                 | 15.77                    | 15.64                  |                     |          |
| 100             | QPSK       | 1       | 271       | 15.66                 | 15.66                    | 15.53                  | 16.5                | 0.0      |
| 100             | QPSK       | 135     | 0         | 15.68                 | 15.67                    | 15.48                  |                     |          |
| 100             | QPSK       | 135     | 69        | 15.66                 | 15.76                    | 15.63                  |                     |          |
| 100             | QPSK       | 135     | 138       | 15.63                 | 15.58                    | 15.72                  | 16.5                | 0.0      |
| 100             | QPSK       | 270     | 0         | 15.61                 | 15.73                    | 15.44                  |                     |          |
| 100             | 16QAM      | 1       | 1         | 15.68                 | 15.73                    | 15.66                  | 16.5                | 0.0      |
| 100             | 64QAM      | 1       | 1         | 15.71                 | 15.62                    | 15.71                  | 16.5                | 0.0      |
| 100             | 256QAM     | 1       | 1         | 15.66                 | 15.66                    | 15.69                  | 16.5                | 0.0      |
| Channel         |            |         |           | 508200                | 518598                   | 528996                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2541                  | 2592.99                  | 2644.98                |                     |          |
| 90              | QPSK       | 1       | 120       | 15.72                 | 15.69                    | 15.71                  | 16.5                | 0.0      |
| Channel         |            |         |           | 507204                | 518598                   | 529998                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2536.02               | 2592.99                  | 2649.99                |                     |          |
| 80              | QPSK       | 1       | 109       | 15.63                 | 15.55                    | 15.73                  | 16.5                | 0.0      |
| Channel         |            |         |           | 505200                | 518598                   | 531996                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2526                  | 2592.99                  | 2659.98                |                     |          |
| 60              | QPSK       | 1       | 81        | 15.66                 | 15.69                    | 15.75                  | 16.5                | 0.0      |
| Channel         |            |         |           | 504204                | 518598                   | 532998                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2521.02               | 2592.99                  | 2664.99                |                     |          |
| 50              | QPSK       | 1       | 67        | 15.54                 | 15.58                    | 15.62                  | 16.5                | 0.0      |
| Channel         |            |         |           | 503202                | 518598                   | 534000                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2516.01               | 2592.99                  | 2670                   |                     |          |
| 40              | QPSK       | 1       | 53        | 15.58                 | 15.71                    | 15.64                  | 16.5                | 0.0      |
| Channel         |            |         |           | 501204                | 518598                   | 535998                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2506.02               | 2592.99                  | 2679.99                |                     |          |
| 20              | QPSK       | 1       | 26        | 15.61                 | 15.62                    | 15.69                  | 16.5                | 0.0      |

n41 for FCC For Hotspot

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 509202                | 518598                   | 528000                 | 15.0                | 0.0      |
| Frequency (MHz) |            |         |           | 2546.01               | 2592.99                  | 2640                   |                     |          |
| 100             | PI/2 BPSK  | 1       | 1         | 13.66                 | 13.56                    | 13.72                  | 15.0                | 0.0      |
| 100             | PI/2 BPSK  | 1       | 137       | 13.69                 | 13.63                    | 13.81                  |                     |          |
| 100             | PI/2 BPSK  | 1       | 271       | 14.02                 | 14.01                    | 13.99                  |                     |          |
| 100             | PI/2 BPSK  | 135     | 0         | 13.78                 | 13.89                    | 13.85                  | 15.0                | 0.0      |
| 100             | PI/2 BPSK  | 135     | 69        | 13.59                 | 13.64                    | 13.73                  |                     |          |
| 100             | PI/2 BPSK  | 135     | 138       | 13.72                 | 13.76                    | 13.78                  |                     |          |
| 100             | PI/2 BPSK  | 270     | 0         | 13.78                 | 13.71                    | 13.76                  | 15.0                | 0.0      |
| 100             | QPSK       | 1       | 1         | 13.85                 | 13.84                    | 13.95                  |                     |          |
| 100             | QPSK       | 1       | 137       | 13.92                 | 14.11                    | 13.95                  |                     |          |
| 100             | QPSK       | 1       | 271       | 13.89                 | 13.99                    | 14.03                  | 15.0                | 0.0      |
| 100             | QPSK       | 135     | 0         | 13.75                 | 13.72                    | 13.69                  |                     |          |
| 100             | QPSK       | 135     | 69        | 13.85                 | 14.00                    | 13.88                  |                     |          |
| 100             | QPSK       | 135     | 138       | 13.79                 | 13.75                    | 13.90                  | 15.0                | 0.0      |
| 100             | QPSK       | 270     | 0         | 13.72                 | 13.76                    | 13.67                  |                     |          |
| 100             | 16QAM      | 1       | 1         | 13.82                 | 13.81                    | 13.88                  | 15.0                | 0.0      |
| 100             | 64QAM      | 1       | 1         | 13.85                 | 13.77                    | 13.93                  | 15.0                | 0.0      |
| 100             | 256QAM     | 1       | 1         | 13.63                 | 13.68                    | 13.82                  | 15.0                | 0.0      |
| Channel         |            |         |           | 508200                | 518598                   | 528996                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2541                  | 2592.99                  | 2644.98                |                     |          |
| 90              | QPSK       | 1       | 120       | 13.66                 | 13.58                    | 13.75                  | 15.0                | 0.0      |
| Channel         |            |         |           | 507204                | 518598                   | 529998                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2536.02               | 2592.99                  | 2649.99                |                     |          |
| 80              | QPSK       | 1       | 109       | 13.58                 | 13.55                    | 13.89                  | 15.0                | 0.0      |
| Channel         |            |         |           | 505200                | 518598                   | 531996                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2526                  | 2592.99                  | 2659.98                |                     |          |
| 60              | QPSK       | 1       | 81        | 13.68                 | 13.64                    | 13.91                  | 15.0                | 0.0      |
| Channel         |            |         |           | 504204                | 518598                   | 532998                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2521.02               | 2592.99                  | 2664.99                |                     |          |
| 50              | QPSK       | 1       | 67        | 13.72                 | 13.72                    | 13.94                  | 15.0                | 0.0      |
| Channel         |            |         |           | 503202                | 518598                   | 534000                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2516.01               | 2592.99                  | 2670                   |                     |          |
| 40              | QPSK       | 1       | 53        | 13.61                 | 13.78                    | 13.87                  | 15.0                | 0.0      |
| Channel         |            |         |           | 501204                | 518598                   | 535998                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2506.02               | 2592.99                  | 2679.99                |                     |          |
| 20              | QPSK       | 1       | 26        | 13.65                 | 13.82                    | 13.93                  | 15.0                | 0.0      |