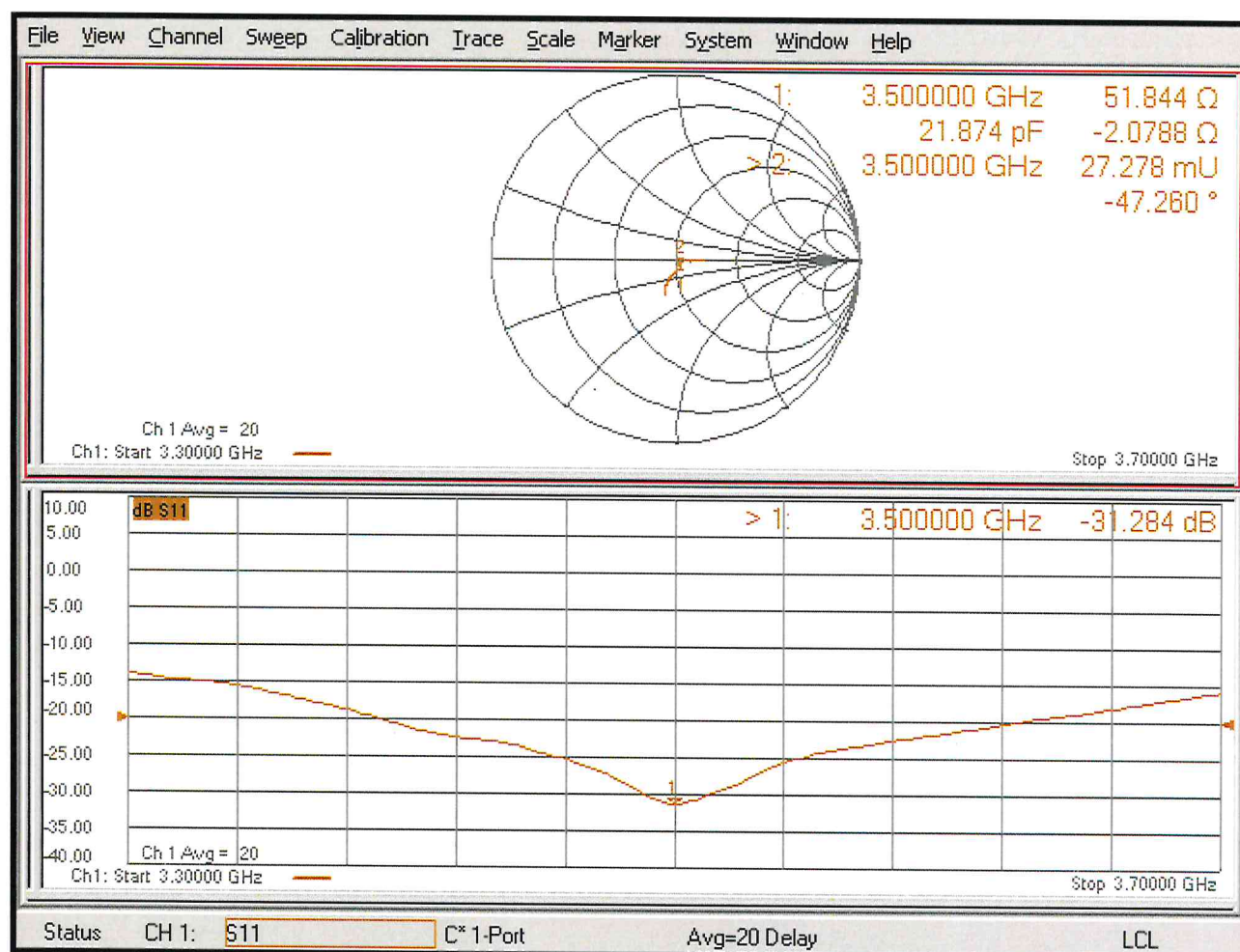


Impedance Measurement Plot for Head TSL





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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 Jeton Kastrati	Function Laboratory Technician	Signature 
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 25, 2019

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



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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 5600 MHz $\pm$ 1 MHz 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 ³ (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 ³ (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 ³ (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 ³ (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

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.0 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.8 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	51.7 Ω - 6.2 j Ω
Return Loss	- 24.0 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	56.0 Ω - 2.7 j Ω
Return Loss	- 24.1 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	56.7 Ω - 1.0 j Ω
Return Loss	- 23.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.195 ns
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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
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Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1113Communication 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/m³,Medium parameters used: $f = 5600$ MHz; $\sigma = 4.88$ S/m; $\epsilon_r = 34.6$; $\rho = 1000$ kg/m³,Medium parameters used: $f = 5750$ MHz; $\sigma = 5.03$ S/m; $\epsilon_r = 34.4$; $\rho = 1000$ kg/m³

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

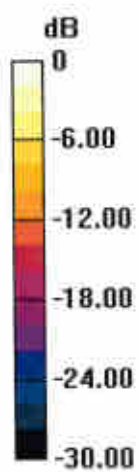
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan,**dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

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

Peak SAR (extrapolated) = 31.8 W/kg

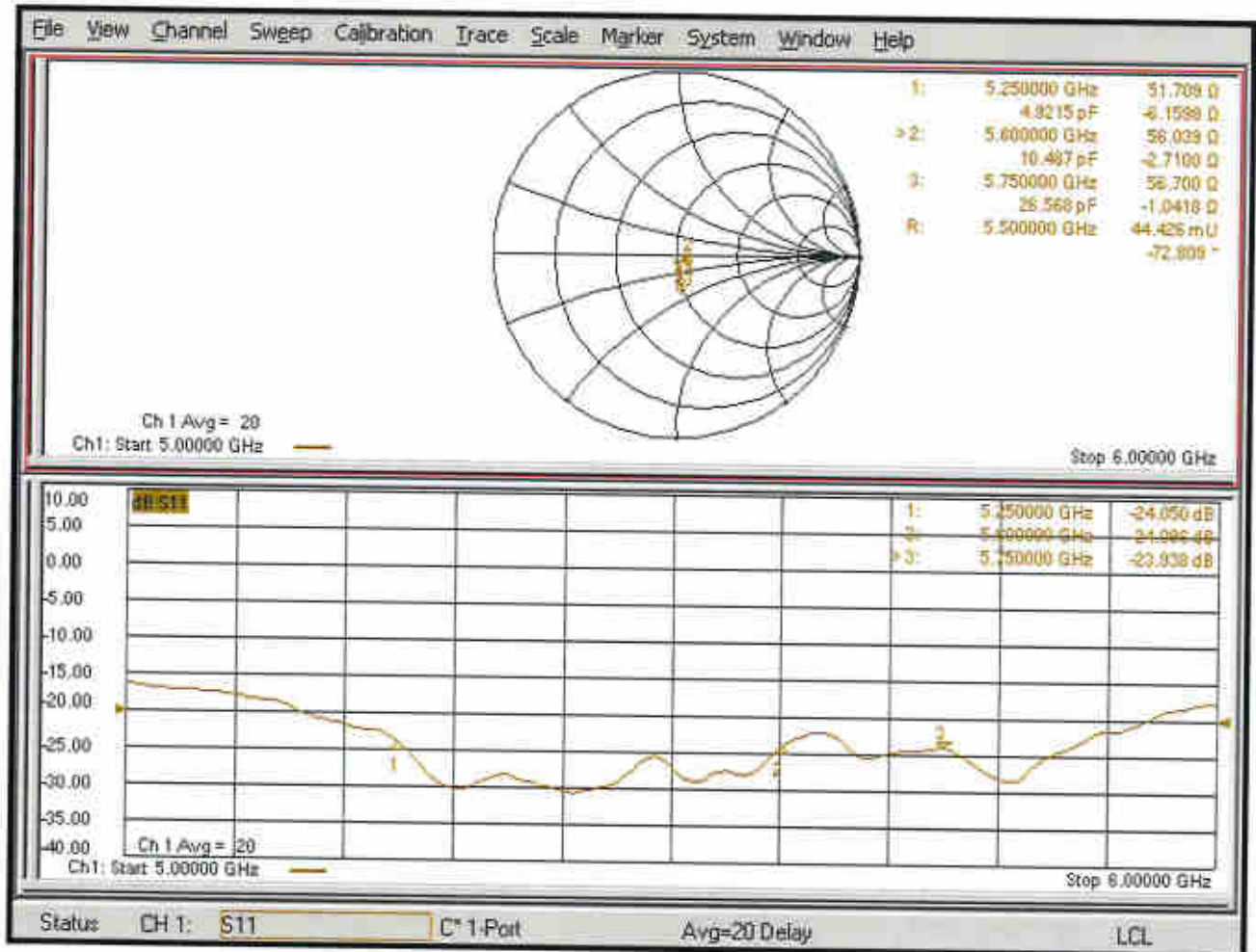
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.30 W/kg

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



D5GHzV2, Serial No. 1113 Extended Dipole Calibrations

Referring to KDB 865664 D01, 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.

D5GHzV2 – serial no. 1113						
5250 Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2019.9.24	-24.05		51.71		-6.16	
2020.9.23	-24.80	-0.03	50.56	1.15	-5.94	-0.22

D5GHzV2 – serial no. 1113						
5600 Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2019.9.24	-24.09		56.04		-2.71	
2020.9.23	-23.95	0.01	57.70	-1.66	-2.85	0.14

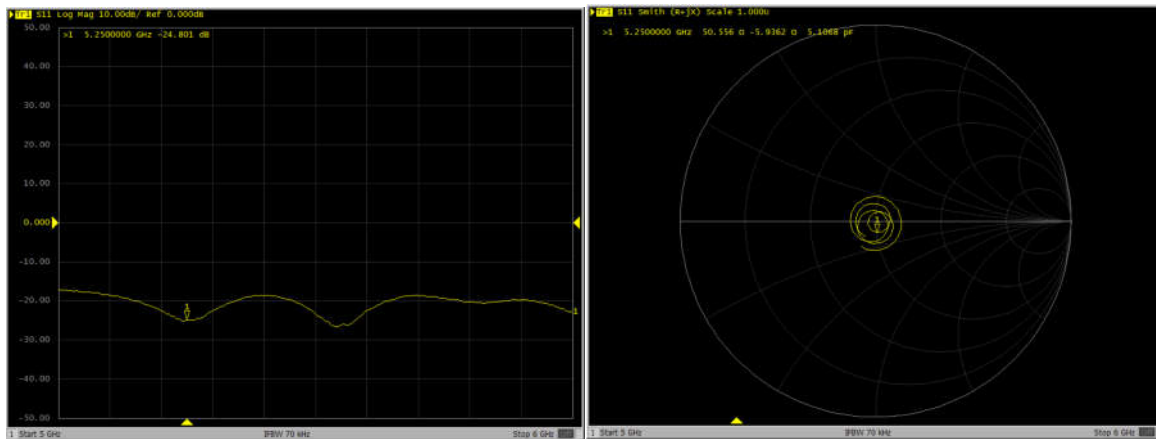
D5GHzV2 – serial no. 1113						
5750 Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2019.9.24	-23.94		56.70		-1.04	
2020.9.23	-21.92	0.08	58.56	-1.86	-1.58	0.54

<Justification of the extended calibration>

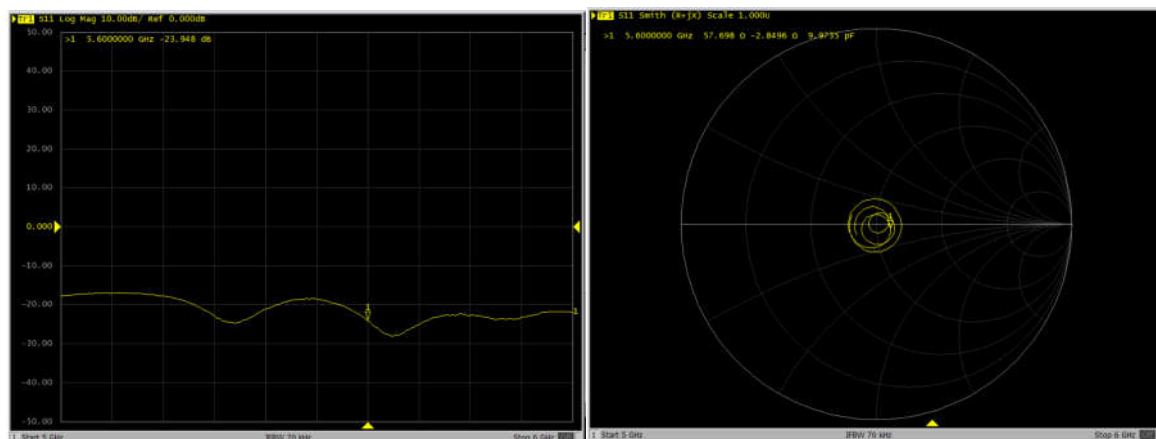
The return loss is $<-20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D5GHzV2 – serial no. 1113

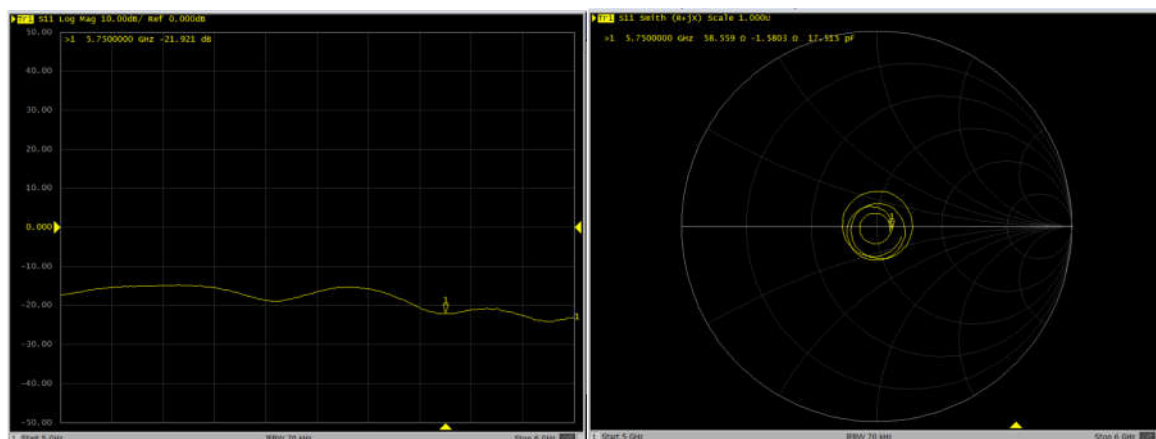
5250MHz – Head



5600MHz – Head



5750MHz – Head





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Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **DAE4-1338_Nov20**

CALIBRATION CERTIFICATE

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

Calibration procedure(s) **QA CAL-06.v30**
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: **November 27, 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 $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Kelthley Multimeter Type 2001	SN: 0810278	07-Sep-20 (No:28647)	Sep-21
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE UWS 053 AA 1001	09-Jan-20 (in house check)	In house check: Jan-21
Calibrator Box V2.1	SE UMS 006 AA 1002	09-Jan-20 (in house check)	In house check: Jan-21

Calibrated by: **Name**
Adrian Gehring **Function**
Laboratory Technician

Approved by: **Sven Kühn** **Deputy Manager**

Signature

Issued: November 27, 2020

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



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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.

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ 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	403.683 $\pm$ 0.02% (k=2)	404.259 $\pm$ 0.02% (k=2)	404.216 $\pm$ 0.02% (k=2)
Low Range	3.97329 $\pm$ 1.50% (k=2)	3.97760 $\pm$ 1.50% (k=2)	3.97480 $\pm$ 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	240.0 $^{\circ}$ $\pm$ 1 $^{\circ}$
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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199991.64	-0.32	-0.00
Channel X	+ Input	20002.84	1.10	0.01
Channel X	- Input	-20001.18	0.25	-0.00
Channel Y	+ Input	199992.25	0.36	0.00
Channel Y	+ Input	19999.51	-1.97	-0.01
Channel Y	- Input	-20003.41	-1.82	0.01
Channel Z	+ Input	199993.13	0.96	0.00
Channel Z	+ Input	20000.60	-0.92	-0.00
Channel Z	- Input	-20003.21	-1.57	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.46	0.54	0.03
Channel X	+ Input	201.63	0.29	0.14
Channel X	- Input	-198.25	0.29	-0.15
Channel Y	+ Input	2001.07	0.18	0.01
Channel Y	+ Input	200.68	-0.49	-0.24
Channel Y	- Input	-199.20	-0.52	0.26
Channel Z	+ Input	2000.41	-0.51	-0.03
Channel Z	+ Input	199.93	-1.28	-0.64
Channel Z	- Input	-199.77	-1.08	0.54

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 (μV)	Low Range Average Reading (μV)
Channel X	200	7.08	5.84
	- 200	-6.14	-7.41
Channel Y	200	-21.12	-21.17
	- 200	20.10	20.00
Channel Z	200	-3.05	-2.98
	- 200	0.35	0.59

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	3.84	-3.07
Channel Y	200	8.29	-	4.87
Channel Z	200	8.97	6.36	-

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	16191	14008
Channel Y	16286	16249
Channel Z	16106	15261

5. Input Offset Measurement

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

Input 10M Ω

	Average (μ V)	min. Offset (μ V)	max. Offset (μ V)	Std. Deviation (μ V)
Channel X	0.57	-0.12	1.34	0.31
Channel Y	-0.39	-0.99	0.23	0.27
Channel Z	-0.35	-1.05	0.40	0.28

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



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Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **EX3-3857_Sep20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3857**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-14.v6, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes**

Calibration date: **September 25, 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 $(22 \pm 3)^{\circ}\text{C}$ 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	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	31-Mar-20 (No. 217-03106)	Apr-21
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

Calibrated by:	Name Leif Klysner	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			
Issued: September 30, 2020			



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Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization ϕ	ϕ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), 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_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * 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_{x,y,z}**: 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_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,y,z}**: 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_{x,y,z} * 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 ± 50 MHz to ± 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_x (no uncertainty required).

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

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.18	0.43	0.46	± 10.1 %
DCP (mV) ^B	99.3	100.5	102.2	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	182.0	± 3.0 %	± 4.7 %
		Y	0.0	0.0	1.0		178.6		
		Z	0.0	0.0	1.0		188.1		

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%.

^A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 5).

^B Numerical linearization parameter; uncertainty not required.

^E 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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-118.9
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

Note: Measurement distance from surface can be increased to 3-4 mm for an *Area Scan* job.

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

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	41.9	0.89	9.50	9.50	9.50	0.32	0.99	± 12.0 %
835	41.5	0.90	9.18	9.18	9.18	0.45	0.80	± 12.0 %
900	41.5	0.97	9.10	9.10	9.10	0.47	0.80	± 12.0 %
1750	40.1	1.37	8.06	8.06	8.06	0.27	0.86	± 12.0 %
1900	40.0	1.40	7.81	7.81	7.81	0.37	0.86	± 12.0 %
2000	40.0	1.40	7.78	7.78	7.78	0.40	0.86	± 12.0 %
2300	39.5	1.67	7.56	7.56	7.56	0.31	0.92	± 12.0 %
2450	39.2	1.80	7.44	7.44	7.44	0.40	0.92	± 12.0 %
2600	39.0	1.96	7.19	7.19	7.19	0.37	0.92	± 12.0 %
3300	38.2	2.71	6.70	6.70	6.70	0.30	1.35	± 14.0 %
3500	37.9	2.91	6.67	6.67	6.67	0.30	1.35	± 14.0 %
3700	37.7	3.12	6.61	6.61	6.61	0.30	1.35	± 14.0 %
3900	37.5	3.32	6.58	6.58	6.58	0.40	1.50	± 14.0 %
4100	37.2	3.53	6.08	6.08	6.08	0.35	1.50	± 14.0 %
4200	37.1	3.63	5.99	5.99	5.99	0.35	1.50	± 14.0 %
4400	36.9	3.84	5.93	5.93	5.93	0.35	1.70	± 14.0 %
4600	36.7	4.04	5.91	5.91	5.91	0.40	1.70	± 14.0 %
4800	36.4	4.25	5.76	5.76	5.76	0.40	1.80	± 14.0 %
4950	36.3	4.40	5.45	5.45	5.45	0.40	1.80	± 14.0 %
5250	35.9	4.71	5.04	5.04	5.04	0.40	1.80	± 14.0 %
5600	35.5	5.07	4.67	4.67	4.67	0.40	1.80	± 14.0 %
5750	35.4	5.22	4.93	4.93	4.93	0.40	1.80	± 14.0 %

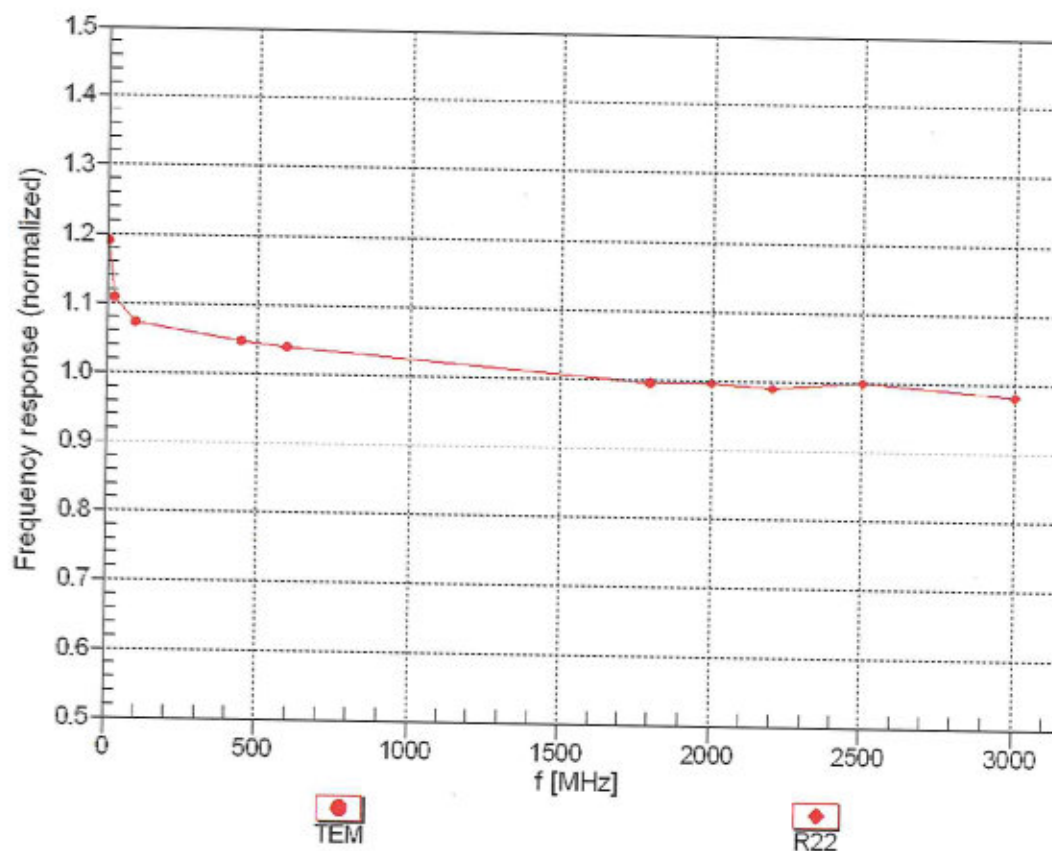
^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 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.

^F At frequencies up to 6 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G 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

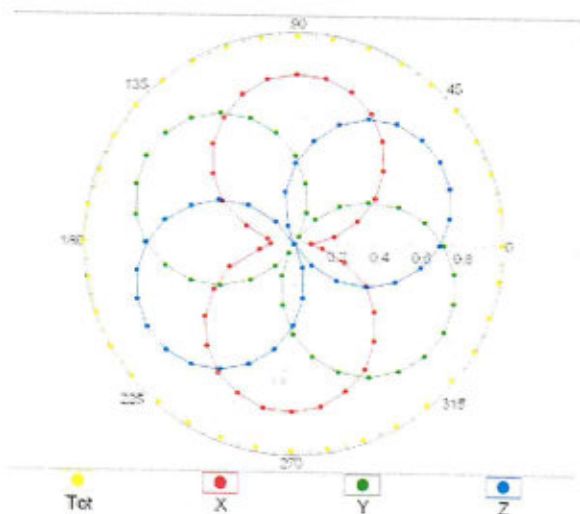
(TEM-Cell:ifi110 EXX, Waveguide: R22)



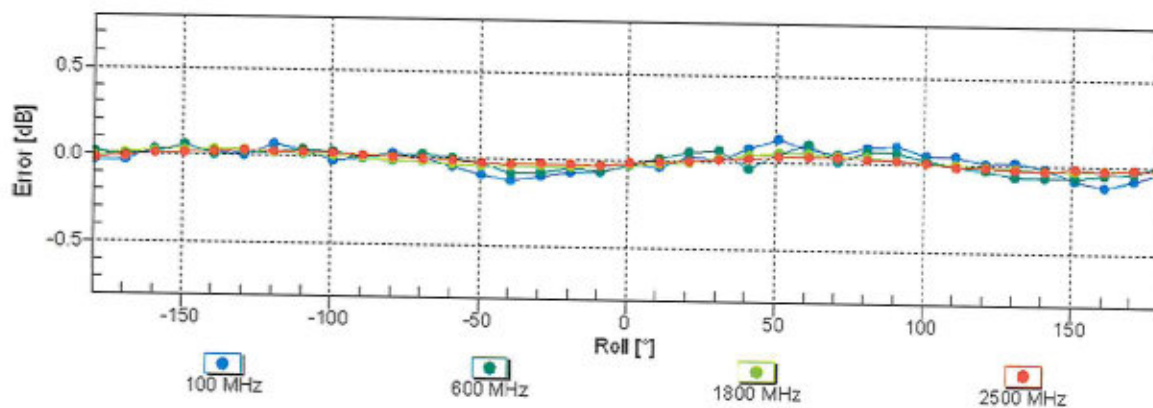
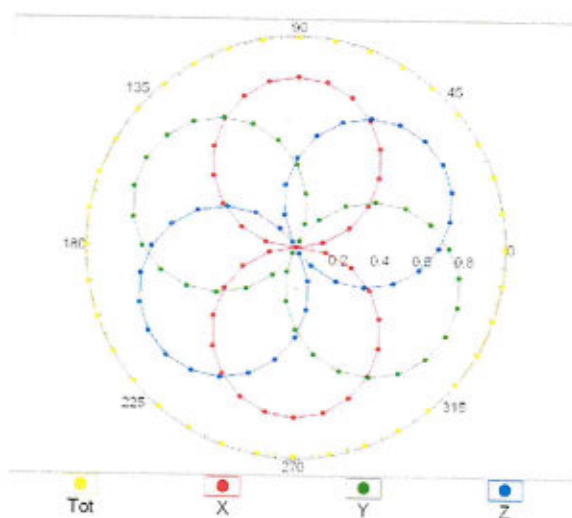
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

f=600 MHz,TEM

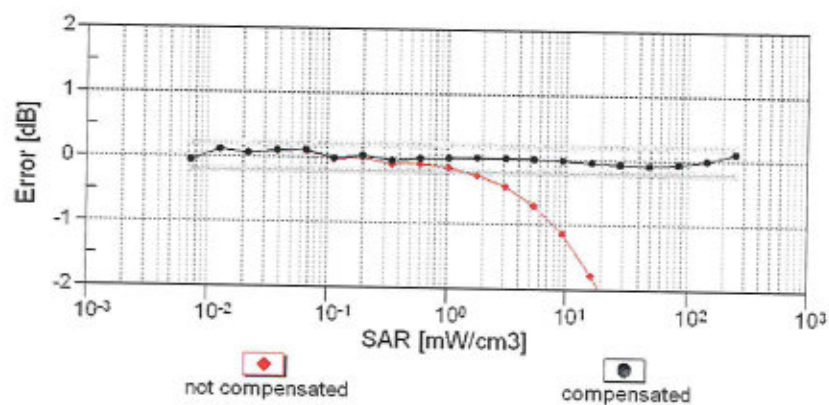
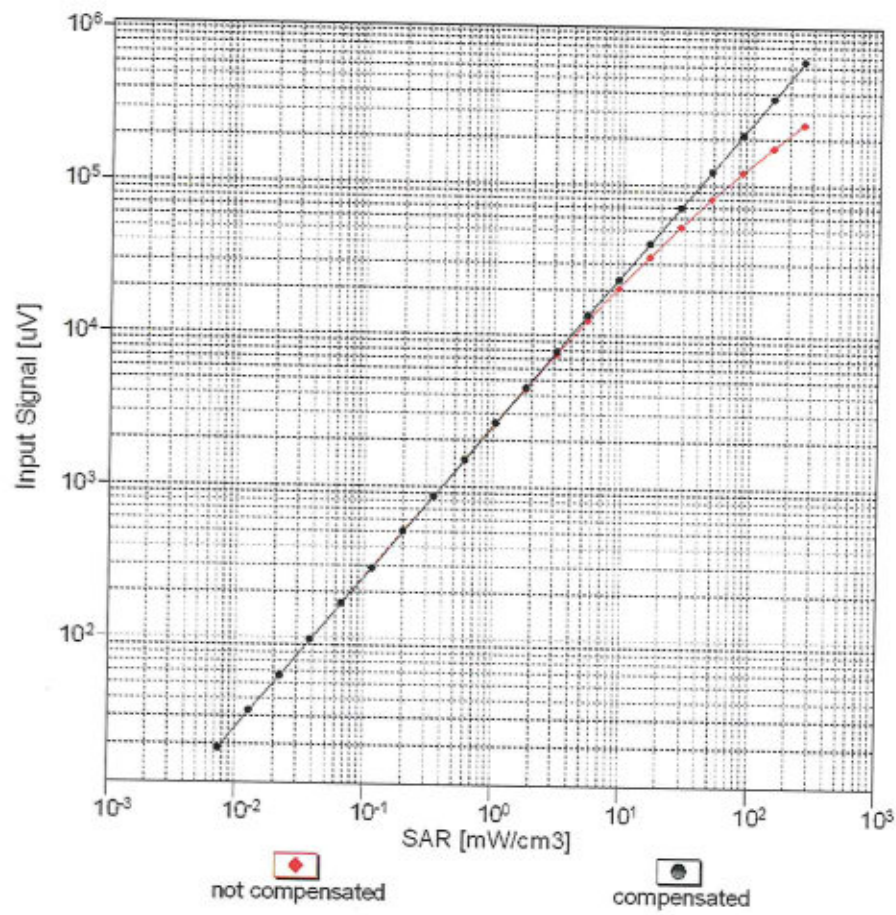


f=1800 MHz,R22



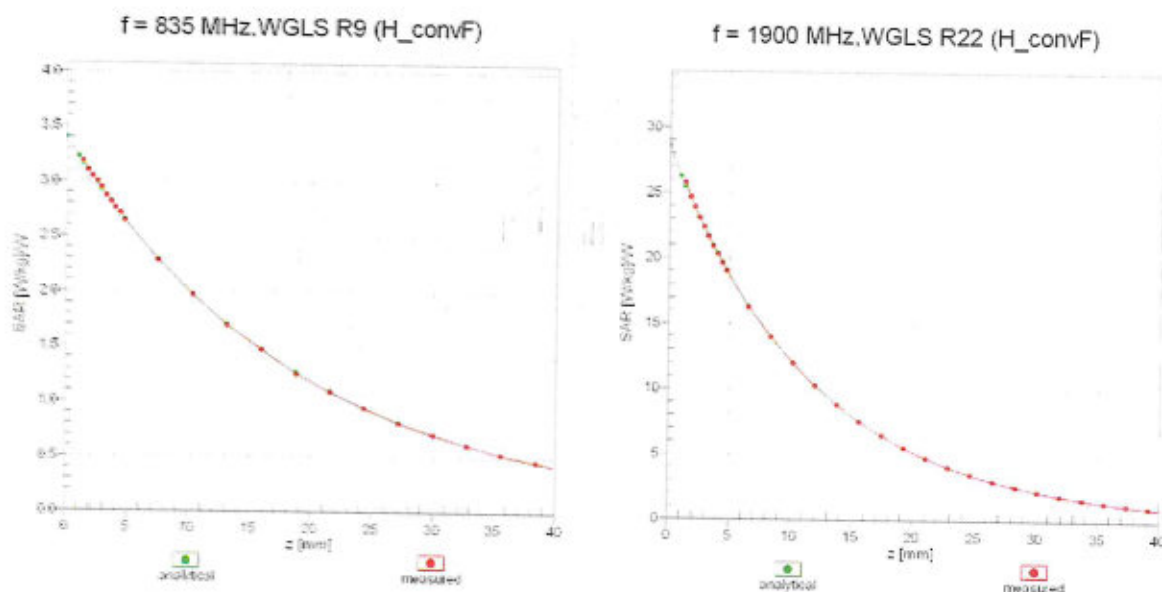
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



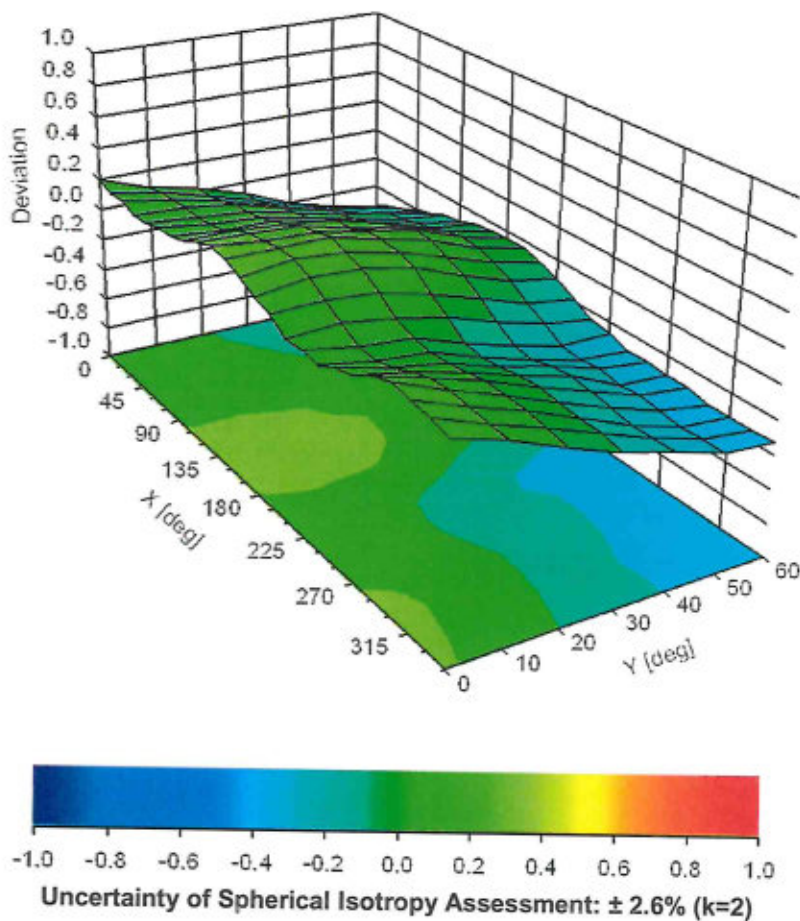
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.

GSM850 Ant1_DS11&2&3&Default power

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
TX Channel	824.2	836.4	848.6		824.2	836.4	848.6	
Frequency (MHz)	32.69	32.68	32.64	33.50	23.69	23.68	23.64	24.50
GSM 1 Tx slot	32.74	32.70	32.68	33.50	23.74	23.70	23.68	24.50
GPRS 2 Tx slots	29.60	29.51	29.55	31.00	23.60	23.51	23.55	25.00
GPRS 3 Tx slots	27.94	28.00	27.92	29.00	23.68	23.74	23.66	24.74
GPRS 4 Tx slots	26.43	26.45	26.41	28.00	23.43	23.45	23.41	25.00
EDGE 1 Tx slot	26.41	26.46	26.44	28.00	17.41	17.46	17.44	19.00
EDGE 2 Tx slots	24.79	24.62	24.48	25.50	18.79	18.62	18.48	19.50
EDGE 3 Tx slots	23.28	23.53	23.68	24.00	19.02	19.27	19.42	19.74
EDGE 4 Tx slots	22.65	22.77	22.39	23.50	19.65	19.77	19.39	20.50

GSM1900 Ant1_Default power

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1880	1909.8		1850.2	1880	1909.8	
Frequency (MHz)	29.40	29.54	29.41	30.50	20.40	20.54	20.41	21.50
GSM 1 Tx slot	29.42	29.57	29.44	30.50	20.42	20.57	20.44	21.50
GPRS 2 Tx slots	26.47	26.51	26.50	28.00	20.47	20.51	20.50	22.00
GPRS 3 Tx slots	24.98	25.11	25.01	26.00	20.72	20.85	20.75	21.74
GPRS 4 Tx slots	23.14	23.36	23.03	25.00	20.14	20.36	20.03	22.00
EDGE 1 Tx slot	25.27	25.47	25.45	27.00	18.27	18.47	18.45	18.00
EDGE 2 Tx slots	24.36	24.42	24.38	24.50	18.36	18.42	18.38	18.50
EDGE 3 Tx slots	22.94	22.97	23.00	23.00	18.68	18.71	18.74	18.74
EDGE 4 Tx slots	21.86	21.91	21.96	22.00	18.86	18.91	18.96	19.00

WCDMA II Ant1_DS11&Default power

WCDMA IV Ant1_DS11&2&Default power

WCDMA V Ant1_DS11&2&3&Default power

Band	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
	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	1909.8		1712.4	1722.6	1752.6		226.4	236.4	246.5	
3GPP Rel 99 AMR 12.2Kbps	24.11	24.35	24.27	25.50	24.30	24.25	24.28	24.50	24.40	24.54	24.59	25.50
3GPP Rel 99 RMC 12.2Kbps	24.32	24.46	24.33	25.50	24.31	24.44	24.28	24.50	24.49	24.68	24.62	25.50
3GPP Rel 6 HSDPA Subtest-1	23.28	23.54	23.49	24.50	23.37	23.41	23.44	23.50	23.45	23.47	23.51	24.50
3GPP Rel 6 HSDPA Subtest-2	23.52	23.75	23.42	24.50	23.36	23.33	23.34	23.50	23.62	23.31	23.46	24.50
3GPP Rel 6 HSDPA Subtest-3	22.74	22.90	23.06	24.00	22.83	22.85	22.79	23.00	23.03	23.02	23.00	24.00
3GPP Rel 6 HSDPA Subtest-4	22.87	23.22	23.10	24.00	22.90	22.96	22.94	23.00	22.99	22.91	22.89	24.00
3GPP Rel 8 DC-HSDPA Subtest-1	23.43	23.52	23.53	24.50	23.36	23.32	23.31	23.50	23.54	23.66	23.56	24.50
3GPP Rel 8 DC-HSDPA Subtest-2	23.48	23.46	23.35	24.50	23.49	23.38	23.50	23.50	23.70	23.40	23.61	24.50
3GPP Rel 8 DC-HSDPA Subtest-3	22.85	23.09	22.98	24.00	22.75	22.75	22.83	23.00	22.83	22.95	22.93	24.00
3GPP Rel 8 DC-HSDPA Subtest-4	23.00	23.11	22.99	24.00	22.77	22.85	22.81	23.00	22.98	23.06	23.06	24.00
3GPP Rel 6 HSUPA Subtest-1	23.47	23.65	23.40	24.50	23.46	23.45	23.45	23.50	23.23	23.52	23.39	24.50
3GPP Rel 6 HSUPA Subtest-2	21.29	21.68	21.46	22.50	21.43	21.38	21.38	21.50	21.29	21.41	21.54	22.50
3GPP Rel 6 HSUPA Subtest-3	22.41	22.57	22.54	23.50	22.48	22.43	22.37	22.50	22.58	22.48	22.43	23.50
3GPP Rel 6 HSUPA Subtest-4	21.33	21.57	21.37	22.50	21.28	21.39	21.35	21.50	21.49	21.40	21.45	22.50
3GPP Rel 6 HSUPA Subtest-5	23.48	23.35	23.45	24.50	23.26	23.49	23.34	23.50	23.39	23.54	23.56	24.50

Band 2_DS11&Default power														
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)				1860	1880	1900								
20	QPSK	1	0	23.96	24.23	24.06	25.5	0						
20	QPSK	1	49	24.14	24.21	24.19								
20	QPSK	1	99	24.03	23.89	23.90								
20	QPSK	50	0	23.10	23.27	23.12								
20	QPSK	50	24	23.15	23.23	23.02	24.5	1						
20	QPSK	50	50	23.04	23.13	23.21								
20	QPSK	100	0	23.01	23.26	22.95								
20	16QAM	1	0	23.17	23.14	22.98								
20	16QAM	1	49	23.02	23.16	23.04	24.5	1						
20	16QAM	1	99	23.29	23.35	23.07								
20	16QAM	50	0	22.03	22.11	21.98								
20	16QAM	50	24	22.39	22.16	22.01								
20	16QAM	50	50	22.35	22.29	22.00	23.5	2						
20	16QAM	100	0	22.08	22.07	22.16								
20	64QAM	1	0	22.23	22.22	22.23								
20	64QAM	1	49	22.11	22.19	22.34								
20	64QAM	1	99	22.14	22.22	22.20	23.5	2						
20	64QAM	50	0	21.13	21.12	21.24								
20	64QAM	50	24	21.12	21.14	21.14								
20	64QAM	50	50	21.15	21.06	21.04								
20	64QAM	100	0	21.09	21.08	20.93	22.5	3						
Channel														
Frequency (MHz)				1867.5	1890	1912.5			Tune-up limit (dBm)	MPR (dB)				
15	QPSK	1	0	24.07	24.13	23.91	25.5	0						
15	QPSK	1	37	23.95	24.17	24.14								
15	QPSK	1	74	24.08	23.87	24.04								
15	QPSK	36	0	23.05	23.19	23.02								
15	QPSK	36	20	23.10	23.11	23.06	24.5	1						
15	QPSK	36	39	22.95	23.05	23.15								
15	QPSK	75	0	23.16	23.22	23.15								
15	16QAM	1	0	23.17	23.19	22.95								
15	16QAM	1	37	23.15	23.17	23.20	24.5	1						
15	16QAM	1	74	23.28	23.22	23.13								
15	16QAM	36	0	22.05	22.13	22.09								
15	16QAM	36	20	22.05	22.07	22.03								
15	16QAM	36	39	22.31	22.29	22.05	23.5	2						
15	16QAM	75	0	22.26	22.12	22.02								
15	64QAM	1	0	22.17	22.35	22.36								
15	64QAM	1	37	22.12	22.31	22.32								
15	64QAM	1	74	22.14	22.14	22.15	23.5	2						
15	64QAM	36	0	21.20	21.17	21.29								
15	64QAM	36	20	21.23	21.22	21.12								
15	64QAM	36	39	21.21	21.27	21.11								
15	64QAM	75	0	21.18	21.07	21.07	22.5	3						
Channel														
Frequency (MHz)				1865 <th>1880</th> <th>1905<th>Tune-up limit (dBm)</th><th>MPR (dB)</th><th colspan="2"></th></th>	1880	1905 <th>Tune-up limit (dBm)</th> <th>MPR (dB)</th> <th colspan="2"></th>			Tune-up limit (dBm)	MPR (dB)				
10	QPSK	1	0	24.08	24.20	24.04	25.5	0						
10	QPSK	1	25	23.94	24.22	24.11								
10	QPSK	1	49	23.93	23.89	23.83								
10	QPSK	25	0	23.00	23.21	22.95								
10	QPSK	25	12	23.01	23.10	23.06	24.5	1						
10	QPSK	25	25	22.99	23.08	23.10								
10	QPSK	50	0	23.16	23.20	23.03								
10	16QAM	1	0	23.19	23.09	23.01								
10	16QAM	1	25	23.22	23.06	23.09	24.5	1						
10	16QAM	1	49	23.24	23.31	23.26								
10	16QAM	25	0	22.09	22.12	22.17								
10	16QAM	25	12	22.30	22.19	22.15								
10	16QAM	25	25	22.35	22.22	21.98	23.5	2						
10	16QAM	50	0	22.20	22.12	22.13								
10	64QAM	1	0	22.10	22.19	22.38								
10	64QAM	1	25	22.24	22.28	22.17								
10	64QAM	1	49	22.15	22.20	22.16	22.5	3						
10	64QAM	25	0	21.18	21.17	21.27								
10	64QAM	25	12	21.25	21.18	21.12								
10	64QAM	25	25	21.15	21.08	21.05								
10	64QAM	50	0	21.11	21.08	21.00	1862.5	1890	1917.5	1915				
Channel														
Frequency (MHz)				1852.5	1890	1907.5					Tune-up limit (dBm)	MPR (dB)		
5	QPSK	1	0	23.95	24.20	23.88	25.5	0						
5	QPSK	1	12	24.05	24.30	24.16								
5	QPSK	1	24	23.95	24.09	23.98								
5	QPSK	12	0	23.02	23.26	22.98								
5	QPSK	12	7	23.12	23.16	23.10	24.5	1						
5	QPSK	12	13	23.13	23.24	23.04								
5	QPSK	25	0	23.02	23.12	23.13								
5	16QAM	1	0	23.17	23.09	23.07								
5	16QAM	1	12	23.12	23.05	23.11	24.5	1						
5	16QAM	1	24	23.30	23.19	23.20								
5	16QAM	12	0	22.18	22.17	22.10								
5	16QAM	12	7	22.35	22.21	22.20								
5	16QAM	12	13	22.16	22.19	22.11	23.5	2						
5	16QAM	25	0	22.09	22.23	22.13								
5	64QAM	1	0	22.21	22.34	22.29								
5	64QAM	1	12	22.21	22.12	22.19								
5	64QAM	1	24	22.09	22.23	22.03	22.5	3						
5	64QAM	12	0	21.02	21.15	21.17								
5	64QAM	12	7	21.19	21.33	21.14								
5	64QAM	12	13	21.05	21.20	21.16								
5	64QAM	25	0	21.09	21.22	21.06	1861.5	1890	1918.5	1915				
Channel														
Frequency (MHz)				1861.5	1890	1918.5					Tune-up limit (dBm)	MPR (dB)		
3	QPSK	1	0	23.97	24.16	23.94	25.5	0						
3	QPSK	1	8	23.96	24.15	24.02								
3	QPSK	1	14	23.91	23.97	24.00								
3	QPSK	8	0	23.16	23.21	22.98								
3	QPSK	8	4	23.18	23.25	23.02	24.5	1						
3	QPSK	8	7	23.08	23.12	23.20								
3	QPSK	15	0	23.08	23.24	22.97								
3	16QAM	1	0	23.08	23.06	23.16								
3	16QAM	1	8	23.05	22.96	23.07	24.5	1						
3	16QAM	1	14	23.22	23.25	23.24								
3	16QAM	8	0	22.13	22.11	22.20								
3	16QAM	8	4	22.40	22.17	22.02								
3	16QAM	8	7	22.13	22.12	22.18	23.5	2						
3	16QAM	15	0	22.18	22.07	21.99								
3	64QAM	1	0	22.12	22.19	22.28								
3	64QAM	1	8	22.18	22.11	22.15								
3	64QAM	1	14	22.07	22.10	22.12	23.5	2						
3	64QAM	8	0	21.17	21.20	21.13								
3	64QAM	8	4	21.28	21.13	21.12								
3	64QAM	8	7	21.16	21.15	21.18								
3	64QAM	15	0	21.11	21.08	21.00	22.5	3						
Channel														
Frequency (MHz)				1860.7	1890	1919.3			Tune-up limit (dBm)	MPR (dB)				
1.4	QPSK	1	0	24.14	24.17	23.97	25.5	0						
1.4	QPSK	1	3	24.12	24.20	23.84								
1.4	QPSK	1	5	23.91	23.94	23.88								
1.4	QPSK	3	0	24.07	24.10	23.88								
1.4	QPSK	3	1	24.19	24.12	24.13	24.5	1						
1.4	QPSK	3	3	23.96	24.01	23.94								
1.4	QPSK	6	0	23.08	23.02	22.92								
1.4	16QAM	1	0	23.38	23.05	22.94								
1.4	16QAM	1	3	23.38	23.06	22.97	23.5	2						
1.4	16QAM	1	5	22.91	22.93	23.03								
1.4	16QAM	3	0	22.64	22.70	22.76								
1.4	16QAM	3	1	22.87	22.66	22.85								
1.4	16QAM	3	3	22.05	22.23	22.13	23.5	2						
1.4	16QAM	3	5	21.98	22.15	21.83								
1.4	64QAM	1	3	22.17	21.83	21.91								
1.4	64QAM	1	5	21.92	21.82	21.75								
1.4	64QAM	3	0	21.97	21.92	21.89	22.5	2						
1.4	64QAM	3	1	21.86	21.92	21.68								
1.4	64QAM	3	3	22.13	21.84	21.70								
1.4	64QAM	6	0	21.17	21.22	21.01								

Band 17_DS1&2&3&Default power									
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				23760	23790	23800			
Frequency (MHz)				709	710	711			
10	QPSK	1	0	24.48	24.61	24.52	25.5	0	
10	QPSK	1	25	24.55	24.42	24.36			
10	QPSK	1	49	24.33	24.27	24.42			
10	QPSK	25	0	23.53	23.59	23.56	24.5	1	
10	QPSK	25	12	23.50	23.49	23.45			
10	QPSK	25	25	23.45	23.40	23.50			
10	QPSK	50	0	23.44	23.56	23.47	24.5	1	
10	16QAM	1	0	23.69	23.74	23.84			
10	16QAM	1	25	23.63	23.69	23.57			
10	16QAM	1	49	23.54	23.62	23.65	23.5	2	
10	16QAM	25	0	22.53	22.66	22.69			
10	16QAM	25	12	22.63	22.62	22.61			
10	16QAM	25	25	22.51	22.55	22.51	23.5	2	
10	16QAM	50	0	22.47	22.45	22.43			
10	64QAM	1	0	22.57	22.49	22.38			
10	64QAM	1	25	22.83	22.62	22.78	23.5	2	
10	64QAM	1	49	22.81	22.65	22.72			
10	64QAM	25	0	21.61	21.62	21.57			
10	64QAM	25	12	21.57	21.53	21.52	22.5	3	
10	64QAM	25	25	21.48	21.47	21.53			
10	64QAM	50	0	21.52	21.53	21.55			
Channel				23755	23790	23825	Tune-up limit (dBm)		MPR (dB)
Frequency (MHz)				706.5	710	713.5			
5	QPSK	1	0	24.56	24.60	24.47	25.5	0	
5	QPSK	1	12	24.41	24.45	24.53			
5	QPSK	1	24	24.39	24.42	24.19			
5	QPSK	12	0	23.52	23.58	23.50	24.5	1	
5	QPSK	12	7	23.55	23.48	23.51			
5	QPSK	12	13	23.47	23.46	23.38			
5	QPSK	25	0	23.47	23.50	23.52	24.5	1	
5	16QAM	1	0	23.81	23.73	23.70			
5	16QAM	1	12	23.41	23.47	23.46			
5	16QAM	1	24	23.47	23.53	23.56	23.5	2	
5	16QAM	12	0	22.62	22.64	22.55			
5	16QAM	12	7	22.54	22.56	22.64			
5	16QAM	12	13	22.45	22.54	22.43	23.5	2	
5	16QAM	25	0	22.59	22.53	22.56			
5	64QAM	1	0	22.85	22.74	22.78			
5	64QAM	1	12	22.66	22.51	22.37	23.5	2	
5	64QAM	1	24	22.52	22.77	22.58			
5	64QAM	12	0	21.74	21.80	21.68			
5	64QAM	12	7	21.78	21.64	21.56	22.5	3	
5	64QAM	12	13	21.47	21.63	21.51			
5	64QAM	25	0	21.63	21.51	21.53			

Band 26 Ant1_DSI1&2&3&Default power									
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				26765	26865	26965			
Frequency (MHz)				821.5	831.5	841.5			
15	QPSK	1	0	24.55	24.61	24.58	25.5	0	
15	QPSK	1	37	24.46	24.58	24.51			
15	QPSK	1	74	24.48	24.53	24.52			
15	QPSK	36	0	23.66	23.70	23.59			
15	QPSK	36	20	23.62	23.62	23.66	24.5	1	
15	QPSK	36	39	23.63	23.62	23.66			
15	QPSK	75	0	23.60	23.67	23.64			
15	16QAM	1	0	23.44	23.54	23.41			
15	16QAM	1	37	23.66	23.70	23.66	24.5	1	
15	16QAM	1	74	23.66	23.68	23.35			
15	16QAM	36	0	22.67	22.62	22.65			
15	16QAM	36	20	22.72	22.75	22.66			
15	16QAM	36	39	22.73	22.64	22.70	23.5	2	
15	16QAM	75	0	22.61	22.57	22.68			
15	64QAM	1	0	22.37	22.67	22.51			
15	64QAM	1	37	22.61	22.67	22.53			
15	64QAM	1	74	22.48	22.52	22.42	23.5	2	
15	64QAM	36	0	21.70	21.59	21.71			
15	64QAM	36	20	21.75	21.74	21.67			
15	64QAM	36	39	21.66	21.80	21.73			
15	64QAM	75	0	21.74	21.63	21.64	22.5	3	
Channel				26740	26865	26990			
Frequency (MHz)				819	831.5	844			
10	QPSK	1	0	24.59	24.54	24.42	25.5	0	
10	QPSK	1	25	24.45	24.34	24.48			
10	QPSK	1	49	24.47	24.50	24.53			
10	QPSK	25	0	23.42	23.36	23.40			
10	QPSK	25	12	23.39	23.22	23.38	24.5	1	
10	QPSK	25	25	23.31	23.31	23.37			
10	QPSK	50	0	23.37	23.31	23.32			
10	16QAM	1	0	23.33	23.41	23.11			
10	16QAM	1	25	23.15	23.12	23.43	24.5	1	
10	16QAM	1	49	23.15	23.19	23.34			
10	16QAM	25	0	22.52	22.48	22.51			
10	16QAM	25	12	22.70	22.43	22.57			
10	16QAM	25	25	22.62	22.49	22.58	23.5	2	
10	16QAM	50	0	22.49	22.46	22.58			
10	64QAM	1	0	22.33	22.52	22.46			
10	64QAM	1	25	22.57	22.37	22.63			
10	64QAM	1	49	22.52	22.62	22.61	23.5	2	
10	64QAM	25	0	21.38	21.50	21.56			
10	64QAM	25	12	21.49	21.44	21.52			
10	64QAM	25	25	21.37	21.55	21.54			
10	64QAM	50	0	21.46	21.50	21.54	22.5	3	
Channel				26715	26865	27015			
Frequency (MHz)				818.5	831.5	846.5			
5	QPSK	1	0	24.56	24.51	24.56	25.5	0	
5	QPSK	1	12	24.57	24.52	24.42			
5	QPSK	1	24	24.33	24.44	24.32			
5	QPSK	12	0	23.46	23.40	23.48			
5	QPSK	12	7	23.47	23.44	23.47	24.5	1	
5	QPSK	12	13	23.46	23.38	23.48			
5	QPSK	25	0	23.42	23.44	23.47			
5	16QAM	1	0	23.53	23.38	23.34			
5	16QAM	1	12	23.51	23.48	23.37	24.5	1	
5	16QAM	1	24	23.44	23.58	23.44			
5	16QAM	12	0	22.63	22.47	22.58			
5	16QAM	12	7	22.61	22.61	22.63			
5	16QAM	12	13	22.57	22.45	22.57	23.5	2	
5	16QAM	25	0	22.54	22.54	22.60			
5	64QAM	1	0	22.53	22.41	22.44			
5	64QAM	1	12	22.45	22.69	22.66			
5	64QAM	1	24	22.43	22.48	22.65	23.5	2	
5	64QAM	12	0	21.50	21.44	21.44			
5	64QAM	12	7	21.44	21.50	21.54			
5	64QAM	12	13	21.42	21.39	21.33			
5	64QAM	25	0	21.50	21.41	21.37	22.5	3	
Channel				26705	26865	27025			
Frequency (MHz)				815.5	831.5	847.5			
3	QPSK	1	0	24.48	24.47	24.51	25.5	0	
3	QPSK	1	8	24.54	24.48	24.60			
3	QPSK	1	14	24.53	24.44	24.41			
3	QPSK	8	0	23.60	23.48	23.49			
3	QPSK	8	4	23.64	23.52	23.50	24.5	1	
3	QPSK	8	7	23.54	23.51	23.57			
3	QPSK	15	0	23.62	23.51	23.53	24.5	1	
3	16QAM	1	0	23.38	23.40	23.35			
3	16QAM	1	8	23.58	23.33	23.37			
3	16QAM	1	14	23.20	23.29	23.20			
3	16QAM	8	0	22.66	22.47	22.54	23.5	2	
3	16QAM	8	4	22.72	22.58	22.49			
3	16QAM	8	7	22.61	22.63	22.59			
3	16QAM	15	0	22.59	22.52	22.59			
3	64QAM	1	0	22.17	22.52	22.53	23.5	2	
3	64QAM	1	8	22.58	22.46	22.49			
3	64QAM	1	14	22.42	22.59	22.62			
3	64QAM	8	0	21.60	21.46	21.44			
3	64QAM	8	4	21.52	21.49	21.53	22.5	3	
3	64QAM	8	7	21.58	21.55	21.52			
3	64QAM	15	0	21.58	21.49	21.55			
Channel				26697	26865	27033			
Frequency (MHz)				814.7	831.5	848.3			
1.4	QPSK	1	0	24.50	24.55	24.46	25.5	0	
1.4	QPSK	1	3	24.52	24.58	24.48			
1.4	QPSK	1	6	24.51	24.50	24.46			
1.4	QPSK	3	0	24.48	24.45	24.46			
1.4	QPSK	3	1	24.58	24.60	24.51	24.5	1	
1.4	QPSK	3	3	24.59	24.49	24.41			
1.4	QPSK	6	0	23.66	23.62	23.54			
1.4	16QAM	1	0	23.59	23.51	23.53			
1.4	16QAM	1	3	23.73	23.74	23.71	24.5	1	
1.4	16QAM	1	6	23.71	23.66	23.61			
1.4	16QAM	3	0	23.63	23.50	23.58			
1.4	16QAM	3	1	23.70	23.71	23.59			
1.4	16QAM	3	3	23.58	23.56	23.60	23.5	2	
1.4	16QAM	6	0	22.57	22.61	22.49			
1.4	64QAM	1	0	22.73	22.61	22.66			
1.4	64QAM	1	3	22.73	22.85	22.78			
1.4	64QAM	1	6	22.68	22.74	22.83	23.5	2	
1.4	64QAM	3	0	22.71	22.63	22.73			
1.4	64QAM	3	1	22.72	22.77	22.72			
1.4	64QAM	3	3	22.77	22.69	22.66			
1.4	64QAM	6	0	21.59	21.62	21.59	22.5	3	

Band 38 Ant1_DSI1&Default power

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)				2580	2595	2610		
20	QPSK	1	0	24.21	24.33	24.08		
20	QPSK	1	49	24.19	24.05	24.09	25.5	0
20	QPSK	1	99	24.09	24.13	24.31		
20	QPSK	50	0	23.16	23.17	23.01		
20	QPSK	50	24	23.12	23.10	23.01		
20	QPSK	50	50	23.12	23.16	22.97	24.5	1
20	QPSK	100	0	23.21	23.28	22.99		
20	16QAM	1	0	23.26	23.39	23.21		
20	16QAM	1	49	23.35	23.11	23.16		
20	16QAM	1	99	23.13	23.09	22.92	24.5	1
20	16QAM	50	0	22.19	22.15	22.25		
20	16QAM	50	24	22.17	22.19	22.01		
20	16QAM	50	50	22.10	22.02	22.02		
20	16QAM	100	0	22.21	22.02	22.10	23.5	2
20	64QAM	1	0	22.28	22.44	22.13		
20	64QAM	1	49	22.46	22.13	22.29		
20	64QAM	1	99	22.36	22.25	22.15		
20	64QAM	50	0	21.50	21.30	21.38		
20	64QAM	50	24	21.39	21.24	21.33		
20	64QAM	50	50	21.40	21.32	21.35		
20	64QAM	100	0	21.29	21.32	21.20	22.5	3
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	24.29	24.19	24.20		
15	QPSK	1	37	24.13	24.18	24.04	25.5	0
15	QPSK	1	74	24.06	24.17	24.20		
15	QPSK	36	0	23.12	23.05	23.13		
15	QPSK	36	20	23.35	23.11	23.18		
15	QPSK	36	39	23.20	23.15	23.09	24.5	1
15	QPSK	75	0	23.12	23.08	23.06		
15	16QAM	1	0	23.24	23.35	23.31		
15	16QAM	1	37	23.17	23.11	23.16		
15	16QAM	1	74	23.09	23.02	23.03	24.5	1
15	16QAM	36	0	22.09	22.17	22.22		
15	16QAM	36	20	22.34	22.23	22.13		
15	16QAM	36	39	22.29	22.14	22.06		
15	16QAM	75	0	22.26	22.21	22.09	23.5	2
15	64QAM	1	0	22.31	22.25	22.29		
15	64QAM	1	37	22.28	22.18	22.32		
15	64QAM	1	74	22.22	22.09	22.18		
15	64QAM	36	0	21.47	21.24	21.28		
15	64QAM	36	20	21.44	21.22	21.26		
15	64QAM	36	39	21.36	21.30	21.49		
15	64QAM	75	0	21.36	21.22	21.14	22.5	3
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	24.14	24.21	24.18		
10	QPSK	1	25	24.29	24.15	24.07	25.5	0
10	QPSK	1	49	24.12	24.06	24.20		
10	QPSK	25	0	23.05	23.24	23.07		
10	QPSK	25	12	23.34	23.03	23.08		
10	QPSK	25	25	23.22	23.21	22.98	24.5	1
10	QPSK	50	0	23.19	23.12	22.99		
10	16QAM	1	0	23.37	23.38	23.14		
10	16QAM	1	25	23.26	23.21	23.22		
10	16QAM	1	49	23.25	23.21	22.97	24.5	1
10	16QAM	25	0	22.22	22.10	22.22		
10	16QAM	25	12	22.35	22.28	22.11		
10	16QAM	25	25	22.20	22.10	22.09		
10	16QAM	50	0	22.33	22.22	22.00	23.5	2
10	64QAM	1	0	22.35	22.29	22.10		
10	64QAM	1	25	22.29	22.06	22.19		
10	64QAM	1	49	22.26	22.05	22.05		
10	64QAM	25	0	21.51	21.33	21.36		
10	64QAM	25	12	21.33	21.21	21.28		
10	64QAM	25	25	21.32	21.40	21.43		
10	64QAM	50	0	21.31	21.28	21.15	22.5	3
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	24.17	24.23	24.27		
5	QPSK	1	12	24.27	24.23	23.98	25.5	0
5	QPSK	1	24	24.24	24.18	24.12		
5	QPSK	12	0	23.23	23.12	23.03		
5	QPSK	12	7	23.35	23.07	23.11		
5	QPSK	12	13	23.21	23.20	23.05	24.5	1
5	QPSK	25	0	23.27	23.08	23.02		
5	16QAM	1	0	23.18	23.27	23.15		
5	16QAM	1	12	23.23	23.24	23.17		
5	16QAM	1	24	23.20	23.06	23.06	24.5	1
5	16QAM	12	0	22.27	22.21	22.22		
5	16QAM	12	7	22.37	22.25	22.21		
5	16QAM	12	13	22.26	22.05	22.12		
5	16QAM	25	0	22.27	22.18	22.00	23.5	2
5	64QAM	1	0	22.42	22.40	22.10		
5	64QAM	1	12	22.30	22.27	22.37		
5	64QAM	1	24	22.24	22.09	22.19		
5	64QAM	12	0	21.39	21.29	21.21		
5	64QAM	12	7	21.54	21.22	21.12		
5	64QAM	12	13	21.32	21.21	21.37		
5	64QAM	25	0	21.36	21.45	21.17	22.5	3

GSM850 Ant4_DS11&2&4&Default power

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
TX Channel	824.2	830.4	848.8	824.2	830.4	848.8	824.2	830.4
Frequency (MHz)	824.2	830.4	848.8	824.2	830.4	848.8	824.2	830.4
GSM 1 Tx slot	32.48	33.38	32.39	33.50	23.68	23.38	23.39	24.50
GPRS 1 Tx slot	32.70	32.43	32.41	33.50	23.70	23.43	23.41	24.50
GPRS 2 Tx slots	29.59	29.53	29.50	31.00	23.59	23.53	23.50	25.00
GPRS 3 Tx slots	28.18	28.05	27.87	29.00	23.92	23.79	23.61	24.74
GPRS 4 Tx slots	26.55	26.63	26.22	28.00	23.55	23.63	23.22	25.00
EDGE 1 Tx slot	26.46	26.50	26.56	28.00	17.46	17.50	17.56	19.00
EDGE 2 Tx slots	24.54	24.24	24.39	25.50	18.54	18.24	18.39	19.50
EDGE 3 Tx slots	23.64	23.28	23.32	24.00	19.38	19.02	19.06	19.74
EDGE 4 Tx slots	22.39	22.10	22.21	23.50	19.39	19.10	19.21	20.50

GSM1900 Ant4_DS12&Default power

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1880	1909.8	1850.2	1880	1909.8	1850.2	1880
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1850.2	1880
GSM 1 Tx slot	29.04	29.28	29.38	30.50	20.04	20.28	20.38	21.50
GPRS 1 Tx slot	29.06	29.32	29.41	30.50	20.06	20.32	20.41	21.50
GPRS 2 Tx slots	26.33	26.18	26.44	28.00	20.33	20.18	20.44	22.00
GPRS 3 Tx slots	24.74	24.80	24.72	26.00	20.48	20.54	20.46	21.74
GPRS 4 Tx slots	23.24	23.45	23.41	25.00	20.24	20.45	20.41	22.00
EDGE 1 Tx slot	25.64	25.30	25.48	27.00	18.64	18.30	18.48	18.00
EDGE 2 Tx slots	24.48	24.36	24.46	24.50	18.48	18.36	18.46	18.50
EDGE 3 Tx slots	22.78	22.87	22.88	23.00	18.52	18.61	18.62	18.74
EDGE 4 Tx slots	21.91	21.97	21.94	22.00	18.91	18.97	18.94	19.00

WCDMA II Ant4_Default power

WCDMA IV Ant4_Default power

WCDMA V Ant4_DS12&4&Default power

	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	9602	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	24.71	24.86	24.74	25.50	24.52	24.72	24.54	25.50	24.97	25.05	25.00	25.50	
3GPP Rel 99	RMC 12.2Kbps	24.77	24.87	24.79	25.50	24.37	24.81	24.46	25.50	24.99	25.07	25.01	25.50	
3GPP Rel 6	HSDPA Subtest-1	23.93	23.79	24.01	24.50	23.72	23.41	23.55	24.50	24.07	24.07	24.10	24.50	
3GPP Rel 6	HSDPA Subtest-2	23.95	23.92	23.94	24.50	23.65	23.65	23.76	24.50	24.11	24.11	24.12	24.50	
3GPP Rel 6	HSDPA Subtest-3	23.43	23.47	23.55	24.00	23.28	23.28	23.45	24.00	23.59	23.59	23.61	24.00	
3GPP Rel 6	HSDPA Subtest-4	23.43	23.36	23.42	24.00	23.11	23.28	23.37	24.00	23.57	23.60	23.60	24.00	
3GPP Rel 8	DC-HSDPA Subtest-1	23.82	23.88	23.97	24.50	23.67	23.51	23.70	24.50	24.13	24.00	24.01	24.50	
3GPP Rel 8	DC-HSDPA Subtest-2	23.77	24.07	23.93	24.50	23.68	23.68	23.75	24.50	24.08	24.01	24.16	24.50	
3GPP Rel 8	DC-HSDPA Subtest-3	23.37	23.63	23.44	24.00	22.98	23.01	23.04	24.00	23.55	23.69	23.65	24.00	
3GPP Rel 8	DC-HSDPA Subtest-4	23.24	23.59	23.50	24.00	23.18	23.35	23.19	24.00	23.57	23.49	23.59	24.00	
3GPP Rel 6	HSUPA Subtest-1	23.62	23.96	23.87	24.50	23.62	23.62	23.77	24.50	24.06	24.09	24.08	24.50	
3GPP Rel 6	HSUPA Subtest-2	21.67	21.93	21.92	22.50	21.38	21.68	21.79	22.50	22.06	22.11	22.02	22.50	
3GPP Rel 6	HSUPA Subtest-3	22.72	22.89	22.97	23.50	22.34	22.53	22.60	23.50	23.06	23.08	23.05	23.50	
3GPP Rel 6	HSUPA Subtest-4	21.86	21.79	21.84	22.50	21.65	21.68	21.63	22.50	22.13	22.08	22.02	22.50	
3GPP Rel 6	HSUPA Subtest-5	23.69	23.79	23.83	24.50	23.83	24.00	23.52	24.50	24.00	24.10	24.10	24.50	

Band 2 Ant4 Default power											
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq. 18700	Power Middle Ch. / Freq. 18900	Power High Ch. / Freq. 19100	Tune-up limit (dBm)	MPR (dB)			
Channel											
Frequency (MHz)											
20	QPSK	1	0	24.33	24.47	24.36	25.5	0			
20	QPSK	1	49	24.37	24.40	24.35					
20	QPSK	1	99	24.22	24.28	24.25					
20	QPSK	50	0	23.32	23.56	23.33	24.5	1			
20	QPSK	50	24	23.49	23.39	23.46					
20	QPSK	50	50	23.38	23.45	23.43					
20	QPSK	100	0	23.49	23.51	23.46	24.5	1			
20	16QAM	1	0	23.42	23.48	23.34					
20	16QAM	1	49	23.45	23.45	23.41					
20	16QAM	1	99	23.39	23.40	23.33	23.5	2			
20	16QAM	50	0	22.41	22.37	22.42					
20	16QAM	50	24	22.46	22.42	22.38					
20	16QAM	50	50	22.20	22.51	22.50	23.5	2			
20	16QAM	100	0	22.42	22.47	22.47					
20	64QAM	1	0	22.31	22.52	22.47	23.5	2			
20	64QAM	1	49	22.31	22.53	22.45					
20	64QAM	1	99	22.36	22.43	22.50					
20	64QAM	50	0	21.40	21.49	21.46	22.5	3			
20	64QAM	50	24	21.52	21.44	21.42					
20	64QAM	50	50	21.39	21.48	21.47					
20	64QAM	100	0	21.45	21.44	21.39					
Channel											
Frequency (MHz)											
15	QPSK	1	0	24.36	24.37	24.37	25.5	0			
15	QPSK	1	37	24.35	24.37	24.34					
15	QPSK	1	74	24.21	24.28	24.26					
15	QPSK	36	0	23.32	23.33	23.36	24.5	1			
15	QPSK	36	20	23.48	23.40	23.45					
15	QPSK	36	39	23.37	23.47	23.42					
15	QPSK	75	0	23.41	23.50	23.45	24.5	1			
15	16QAM	1	0	23.42	23.47	23.35					
15	16QAM	1	37	23.47	23.46	23.42					
15	16QAM	1	74	23.42	23.39	23.33	23.5	2			
15	16QAM	36	0	22.43	22.35	22.42					
15	16QAM	36	20	22.45	22.42	22.40					
15	16QAM	36	39	22.17	22.52	22.48	23.5	2			
15	16QAM	75	0	22.42	22.47	22.46					
15	64QAM	1	0	22.32	22.54	22.46					
15	64QAM	1	37	22.29	22.53	22.44	23.5	2			
15	64QAM	1	74	22.38	22.41	22.48					
15	64QAM	36	0	21.40	21.50	21.47					
15	64QAM	36	20	21.50	21.43	21.43	22.5	3			
15	64QAM	36	39	21.38	21.50	21.48					
15	64QAM	75	0	21.44	21.45	21.41					
Channel											
Frequency (MHz)											
10	QPSK	1	0	24.24	24.39	24.26	25.5	0			
10	QPSK	1	25	24.29	24.29	24.26					
10	QPSK	1	49	24.13	24.16	24.15					
10	QPSK	25	0	23.23	23.47	23.23	24.5	1			
10	QPSK	25	12	23.38	23.28	23.38					
10	QPSK	25	25	23.30	23.37	23.34					
10	QPSK	50	0	23.30	23.42	23.36	24.5	1			
10	16QAM	1	0	23.32	23.40	23.25					
10	16QAM	1	25	23.34	23.37	23.30					
10	16QAM	1	49	23.30	23.30	23.21	23.5	2			
10	16QAM	25	0	22.32	22.26	22.34					
10	16QAM	25	12	22.38	22.32	22.30					
10	16QAM	25	25	22.10	22.39	22.39	23.5	2			
10	16QAM	50	0	22.33	22.35	22.39					
10	64QAM	1	0	22.22	22.40	22.37					
10	64QAM	1	25	22.22	22.44	22.36	23.5	2			
10	64QAM	1	49	22.27	22.32	22.40					
10	64QAM	25	0	21.28	21.38	21.34					
10	64QAM	25	12	21.42	21.32	21.31	22.5	3			
10	64QAM	25	25	21.31	21.39	21.38					
10	64QAM	50	0	21.36	21.34	21.30					
Channel											
Frequency (MHz)											
5	QPSK	1	0	24.36	24.46	24.37	25.5	0			
5	QPSK	1	12	24.36	24.39	24.34					
5	QPSK	1	24	24.21	24.29	24.24					
5	QPSK	12	0	23.30	23.54	23.34	24.5	1			
5	QPSK	12	7	23.48	23.41	23.46					
5	QPSK	12	13	23.35	23.49	23.41					
5	QPSK	25	0	23.49	23.49	23.45	24.5	1			
5	16QAM	1	0	23.43	23.49	23.34					
5	16QAM	1	12	23.46	23.44	23.42					
5	16QAM	1	24	23.40	23.39	23.35	23.5	2			
5	16QAM	12	0	22.33	22.35	22.44					
5	16QAM	12	7	22.47	22.42	22.40					
5	16QAM	12	13	22.20	22.52	22.49	23.5	2			
5	16QAM	25	0	22.41	22.45	22.44					
5	64QAM	1	0	22.31	22.52	22.47					
5	64QAM	1	12	22.32	22.54	22.44	23.5	2			
5	64QAM	1	24	22.36	22.42	22.50					
5	64QAM	12	0	21.42	21.51	21.46					
5	64QAM	12	7	21.51	21.43	21.43	22.5	3			
5	64QAM	12	13	21.36	21.52	21.50					
5	64QAM	25	0	21.44	21.45	21.39					
Channel											
Frequency (MHz)											
3	QPSK	1	0	24.36	24.44	24.38	25.5	0			
3	QPSK	1	8	24.36	24.38	24.32					
3	QPSK	1	14	24.19	24.30	24.27					
3	QPSK	8	0	23.32	23.55	23.35	24.5	1			
3	QPSK	8	4	23.49	23.50	23.45					
3	QPSK	8	7	23.37	23.49	23.42					
3	QPSK	15	0	23.50	23.50	23.46	24.5	1			
3	16QAM	1	0	23.42	23.49	23.37					
3	16QAM	1	8	23.47	23.45	23.40					
3	16QAM	1	14	23.39	23.39	23.36	23.5	2			
3	16QAM	8	0	22.40	22.38	22.41					
3	16QAM	8	4	22.46	22.43	22.39					
3	16QAM	8	7	22.19	22.54	22.47	23.5	2			
3	16QAM	15	0	22.43	22.49	22.48					
3	64QAM	1	0	22.29	22.51	22.45					
3	64QAM	1	8	22.33	22.52	22.44	23.5	2			
3	64QAM	1	14	22.35	22.43	22.52					
3	64QAM	8	0	21.40	21.50	21.46					
3	64QAM	8	4	21.54	21.44	21.42	22.5	3			
3	64QAM	8	7	21.38	21.49	21.49					
3	64QAM	15	0	21.46	21.44	21.39					
Channel											
Frequency (MHz)											
1.4	QPSK	1	0	24.22	24.31	24.21	25.5	0			
1.4	QPSK	1	3	24.31	24.27	24.20					
1.4	QPSK	1	5	24.15	24.21	24.11					
1.4	QPSK	3	0	24.28	24.36	24.33	24.5	1			
1.4	QPSK	3	1	24.29	24.28	24.33					
1.4	QPSK	3	3	24.22	24.23	24.23					
1.4	QPSK	6	0	23.31	23.39	23.34	24.5	1			
1.4	16QAM	1	0	23.35	23.35	23.31					
1.4	16QAM	1	5	23.38	23.43	23.35					
1.4	16QAM	1	5	23.29	23.29	23.35	23.5	2			
1.4	16QAM	3	0	23.22	23.30	23.27					
1.4	16QAM	3	1	23.27	23.29	23.28					
1.4	16QAM	3	3	23.10	23.23	23.15	23.5	2			
1.4	16QAM	6	0	22.35	22.43	22.51					
1.4	64QAM	1	0	22.40	22.46	22.46					
1.4	64QAM	1	3	22.27	22.53	22.46	23.5	2			
1.4	64QAM	1	5	22.14	22.30	22.41					
1.4	64QAM	3	0	22.29	22.32	22.35					
1.4	64QAM	3	1	22.36	22.38	22.42	23.5	2			
1.4	64QAM	3	3	22.21	22.26	22.23					
1.4	64QAM	6	0	21.34	21.32	21.31					

Band 17 Ant4 DSI1&2&4&Default power								
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				23760	23790	23800		
Frequency (MHz)				705	710	711		
10	QPSK	1	0	24.95	25.06	24.91	25.5	0
10	QPSK	1	25	24.98	25.05	24.98		
10	QPSK	1	49	24.91	24.92	24.80		
10	QPSK	25	0	23.97	24.15	24.00		
10	QPSK	25	12	24.06	24.05	24.10		
10	QPSK	25	25	23.87	23.81	23.98	24.5	1
10	QPSK	50	0	24.01	24.07	23.87		
10	16QAM	1	0	24.28	24.07	24.48		
10	16QAM	1	25	24.28	24.34	24.22		
10	16QAM	1	49	24.16	24.28	24.07		
10	16QAM	25	0	23.15	23.22	23.21	23.5	2
10	16QAM	25	12	23.23	23.07	22.93		
10	16QAM	25	25	22.98	23.02	22.76		
10	16QAM	50	0	22.90	23.09	22.99		
10	64QAM	1	0	23.19	23.22	23.12		
10	64QAM	1	25	22.95	23.01	22.98	23.5	2
10	64QAM	1	49	22.97	23.12	23.02		
10	64QAM	25	0	21.89	22.17	22.06		
10	64QAM	25	12	22.02	22.01	22.13		
10	64QAM	25	25	22.03	21.97	21.81		
10	64QAM	50	0	22.00	21.99	22.05		
Channel				23755	23790	23825		
Frequency (MHz)				706.5	710	713.5	Tune-up limit (dBm)	MPR (dB)
5	QPSK	1	0	25.02	25.05	24.98	25.5	0
5	QPSK	1	12	24.98	25.05	25.03		
5	QPSK	1	24	24.88	24.99	24.87		
5	QPSK	12	0	24.12	24.00	24.10		
5	QPSK	12	7	24.02	23.97	23.98		
5	QPSK	12	13	24.00	23.95	23.80	24.5	1
5	QPSK	25	0	23.95	23.84	23.87		
5	16QAM	1	0	24.33	24.27	24.45		
5	16QAM	1	12	24.34	24.28	24.23		
5	16QAM	1	24	24.16	24.22	24.04		
5	16QAM	12	0	23.13	23.09	23.05	23.5	2
5	16QAM	12	7	23.12	22.99	23.04		
5	16QAM	12	13	23.03	22.85	22.94		
5	16QAM	25	0	22.99	23.05	23.05		
5	64QAM	1	0	23.24	23.03	23.13		
5	64QAM	1	12	23.12	23.00	23.10	23.5	2
5	64QAM	1	24	22.94	22.93	23.01		
5	64QAM	12	0	21.92	22.18	22.02		
5	64QAM	12	7	22.01	21.98	21.97		
5	64QAM	12	13	22.04	21.86	21.76		
5	64QAM	25	0	21.91	22.08	22.04		

Band 26 Ant4 DSI2&4&Default power								
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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	24.51	24.71	24.69	25.5	0
15	QPSK	1	37	24.41	24.47	24.47		
15	QPSK	1	74	24.51	24.42	24.43		
15	QPSK	36	0	23.53	23.69	23.59		
15	QPSK	36	20	23.61	23.49	23.48		
15	QPSK	36	39	23.49	23.54	23.59	24.5	1
15	QPSK	75	0	23.40	23.62	23.61		
15	16QAM	1	0	23.76	23.70	23.78		
15	16QAM	1	37	23.68	23.53	23.72		
15	16QAM	1	74	23.79	23.57	23.51		
15	16QAM	36	0	22.67	22.65	22.77	23.5	2
15	16QAM	36	20	22.67	22.58	22.62		
15	16QAM	36	39	22.58	22.67	22.69		
15	16QAM	75	0	22.68	22.62	22.66		
15	64QAM	1	0	22.70	22.73	22.76		
15	64QAM	1	37	22.75	22.85	22.81	23.5	2
15	64QAM	1	74	22.74	22.84	22.82		
15	64QAM	36	0	21.92	21.59	21.63		
15	64QAM	36	20	21.99	21.90	21.71		
15	64QAM	36	39	21.88	21.59	21.56		
15	64QAM	75	0	21.54	21.71	21.78		
Channel				26740	26865	26990		
Frequency (MHz)				819	831.5	844	Tune-up limit (dBm)	MPR (dB)
10	QPSK	1	0	24.54	24.67	24.58	25.5	0
10	QPSK	1	25	24.59	24.50	24.35		
10	QPSK	1	49	24.52	24.35	24.27		
10	QPSK	25	0	23.66	23.60	23.65		
10	QPSK	25	12	23.51	23.46	23.59		
10	QPSK	25	25	23.61	23.59	23.50	24.5	1
10	QPSK	50	0	23.40	23.59	23.53		
10	16QAM	1	0	23.90	23.78	23.72		
10	16QAM	1	25	23.62	23.68	23.79		
10	16QAM	1	49	23.78	23.66	23.43		
10	16QAM	25	0	22.68	22.66	22.62	23.5	2
10	16QAM	25	12	22.60	22.59	22.67		
10	16QAM	25	25	22.63	22.60	22.69		
10	16QAM	50	0	22.82	22.86	22.80		
10	64QAM	1	0	22.70	22.70	22.81		
10	64QAM	1	25	22.83	22.68	22.78	23.5	2
10	64QAM	1	49	22.82	22.74	22.83		
10	64QAM	25	0	21.76	21.61	21.76		
10	64QAM	25	12	22.00	21.91	21.79		
10	64QAM	25	25	21.82	21.56	21.72		
10	64QAM	50	0	21.63	21.83	21.78		
Channel				26715	26865	27015		
Frequency (MHz)				818.5	831.5	846.5	Tune-up limit (dBm)	MPR (dB)
5	QPSK	1	0	24.63	24.59	24.59	25.5	0
5	QPSK	1	12	24.58	24.40	24.37		
5	QPSK	1	24	24.46	24.35	24.44		
5	QPSK	12	0	23.65	23.66	23.61		
5	QPSK	12	7	23.57	23.56	23.40		
5	QPSK	12	13	23.58	23.62	23.53	24.5	1
5	QPSK	25	0	23.55	23.60	23.49		
5	16QAM	1	0	23.79	23.71	23.77		
5	16QAM	1	12	23.69	23.68	23.68		
5	16QAM	1	24	23.68	23.68	23.44		
5	16QAM	12	0	22.70	22.65	22.58	23.5	2
5	16QAM	12	7	22.77	22.70	22.58		
5	16QAM	12	13	22.71	22.76	22.66		
5	16QAM	25	0	22.80	22.74	22.69		
5	64QAM	1	0	22.80	22.75	22.77		
5	64QAM	1	12	22.70	22.82	22.94	23.5	2
5	64QAM	1	24	22.70	22.82	22.85		
5	64QAM	12	0	21.77	21.67	21.60		
5	64QAM	12	7	21.88	21.82	21.79		
5	64QAM	12	13	21.91	21.69	21.74		
5	64QAM	25	0	21.58	21.62	21.70		
Channel				26705	26865	27025		
Frequency (MHz)				815.5	831.5	847.5	Tune-up limit (dBm)	MPR (dB)
3	QPSK	1	0	24.51	24.61	24.69	25.5	0
3	QPSK	1	8	24.41	24.47	24.47		
3	QPSK	1	14	24.51	24.42	24.43		
3	QPSK	8	0	23.53	23.59	23.59		
3	QPSK	8	4	23.61	23.49	23.48		
3	QPSK	8	7	23.49	23.64	23.59	24.5	1
3	QPSK	15	0	23.40	23.51	23.62		
3	16QAM	1	0	23.76	23.70	23.78		
3	16QAM	1	8	23.68	23.53	23.72		
3	16QAM	1	14	23.79	23.57	23.51		
3	16QAM	8	0	22.67	22.65	22.77	23.5	2
3	16QAM	8	4	22.67	22.58	22.62		
3	16QAM	8	7	22.58	22.67	22.69		
3	16QAM	15	0	22.68	22.62	22.66		
3	64QAM	1	0	22.70	22.73	22.76		
3	64QAM	1	8	22.75	22.85	22.81	23.5	2
3	64QAM	1	14	22.74	22.84	22.82		
3	64QAM	8	0	21.52	21.59	21.63		
3	64QAM	8	4	21.69	21.90	21.71		
3	64QAM	8	7	21.88	21.59	21.56		
3	64QAM	15	0	21.54	21.71	21.78		
Channel				26697	26865	27033		
Frequency (MHz)				814.7	831.5	848.3	Tune-up limit (dBm)	MPR (dB)
1.4	QPSK	1	0	24.26	24.23	24.35	25.5	0
1.4	QPSK	1	3	24.30	24.32	24.22		
1.4	QPSK	1	5	24.38	24.29	24.27	24.5	1
1.4	QPSK	3	0	24.44	24.19	24.29		
1.4	QPSK	3	3	24.36	24.21	24.21	24.5	1
1.4	QPSK	6	0	23.32	23.20	23.22		
1.4	16QAM	1	0	23.48	23.25	23.33	24.5	1
1.4	16QAM	1	3	23.51	23.47	23.48		
1.4	16QAM	1	5	23.47	23.41	23.41		
1.4	16QAM	3	0	23.48	23.20	23.17		
1.4	16QAM	3	1	23.51	23.24	23.24		
1.4	16QAM	3	3	23.23	23.37	23.17	23.5	2
1.4	64QAM	1	0	22.36	22.31	22.46		
1.4	64QAM	1	3	22.51	22.42	22.26		
1.4	64QAM	1	5	22.37	22.32	22.32		
1.4	64QAM	3	0	22.31	22.22	22.16		
1.4	64QAM	3	1	22.48	22.25	22.32	22.5	3
1.4	64QAM	3	3	22.51	22.42	22.21		
1.4	64QAM	6	0	21.46	21.35	21.29		

Band 38 Ant4 DSI2&Default power									
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)				37850	38000	38150			
				2580	2595	2610			
20	QPSK	1	0	24.61	24.68	24.67	25.5	0	
20	QPSK	1	49	24.60	24.53	24.64			
20	QPSK	1	99	24.48	24.47	24.36			
20	QPSK	50	0	23.49	23.65	23.53	24.5	1	
20	QPSK	50	24	23.54	23.63	23.56			
20	QPSK	50	50	23.62	23.50	23.58			
20	QPSK	100	0	23.57	23.61	23.56	24.5	1	
20	16QAM	1	0	23.48	23.67	23.73			
20	16QAM	1	49	23.57	23.53	23.45			
20	16QAM	1	99	23.54	23.52	23.31	23.5	2	
20	16QAM	50	0	22.69	22.69	22.68			
20	16QAM	50	24	22.74	22.56	22.63			
20	16QAM	50	50	22.62	22.60	22.59	23.5	2	
20	16QAM	100	0	22.58	22.63	22.66			
20	64QAM	1	0	22.75	22.71	22.83			
20	64QAM	1	49	22.62	22.71	22.74	23.5	2	
20	64QAM	1	99	22.59	22.75	22.42			
20	64QAM	50	0	21.54	21.63	21.51			
20	64QAM	50	24	21.60	21.55	21.66	22.5	3	
20	64QAM	50	50	21.65	21.64	21.59			
20	64QAM	100	0	21.71	21.70	21.72			
Channel Frequency (MHz)				37925	38000	38175	Tune-up limit (dBm)	MPR (dB)	
				2577.5	2595	2612.5			
15	QPSK	1	0	24.55	24.65	24.58	25.5	0	
15	QPSK	1	37	24.49	24.58	24.50			
15	QPSK	1	74	24.59	24.54	24.49			
15	QPSK	36	0	23.56	23.48	23.59	24.5	1	
15	QPSK	36	20	23.59	23.59	23.59			
15	QPSK	36	39	23.56	23.56	23.55			
15	QPSK	75	0	23.55	23.51	23.60	24.5	1	
15	16QAM	1	0	23.62	23.58	23.64			
15	16QAM	1	37	23.44	23.43	23.60			
15	16QAM	1	74	23.57	23.46	23.46	23.5	2	
15	16QAM	36	0	22.56	22.72	22.56			
15	16QAM	36	20	22.63	22.66	22.68			
15	16QAM	36	39	22.58	22.72	22.58	23.5	2	
15	16QAM	75	0	22.56	22.66	22.59			
15	64QAM	1	0	22.63	22.69	22.75			
15	64QAM	1	37	22.56	22.60	22.75	22.5	3	
15	64QAM	1	74	22.56	22.69	22.42			
15	64QAM	36	0	21.52	21.57	21.57			
15	64QAM	36	20	21.72	21.57	21.58	22.5	3	
15	64QAM	36	39	21.56	21.59	21.54			
15	64QAM	75	0	21.56	21.71	21.61			
Channel Frequency (MHz)				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)	
				2675	2595	2615			
10	QPSK	1	0	24.58	24.59	24.60	25.5	0	
10	QPSK	1	25	24.56	24.62	24.54			
10	QPSK	1	49	24.50	24.58	24.34			
10	QPSK	25	0	23.46	23.60	23.64	24.5	1	
10	QPSK	25	12	23.57	23.56	23.62			
10	QPSK	25	25	23.60	23.57	23.53			
10	QPSK	50	0	23.59	23.60	23.52	24.5	1	
10	16QAM	1	0	23.47	23.70	23.68			
10	16QAM	1	25	23.56	23.52	23.46			
10	16QAM	1	49	23.44	23.54	23.31	23.5	2	
10	16QAM	25	0	22.59	22.73	22.57			
10	16QAM	25	12	22.60	22.66	22.70			
10	16QAM	25	25	22.56	22.61	22.66	23.5	2	
10	16QAM	50	0	22.71	22.57	22.64			
10	64QAM	1	0	22.69	22.58	22.75			
10	64QAM	1	25	22.63	22.74	22.60	22.5	3	
10	64QAM	1	49	22.63	22.65	22.57			
10	64QAM	25	0	21.54	21.63	21.63			
10	64QAM	25	12	21.68	21.64	21.59	22.5	3	
10	64QAM	25	25	21.51	21.55	21.46			
10	64QAM	50	0	21.61	21.58	21.61			
Channel Frequency (MHz)				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
				2572.5	2595	2617.5			
5	QPSK	1	0	24.61	24.60	24.48	25.5	0	
5	QPSK	1	12	24.61	24.66	24.59			
5	QPSK	1	24	24.50	24.46	24.37			
5	QPSK	12	0	23.54	23.63	23.60	24.5	1	
5	QPSK	12	7	23.64	23.57	23.47			
5	QPSK	12	13	23.57	23.53	23.48			
5	QPSK	25	0	23.57	23.58	23.56	24.5	1	
5	16QAM	1	0	23.63	23.68	23.66			
5	16QAM	1	12	23.46	23.48	23.54			
5	16QAM	1	24	23.48	23.40	23.47	23.5	2	
5	16QAM	12	0	22.70	22.76	22.66			
5	16QAM	12	7	22.60	22.73	22.69			
5	16QAM	12	13	22.55	22.60	22.56	23.5	2	
5	16QAM	25	0	22.64	22.69	22.66			
5	64QAM	1	0	22.63	22.64	22.71			
5	64QAM	1	12	22.66	22.76	22.61	23.5	2	
5	64QAM	1	24	22.61	22.70	22.56			
5	64QAM	12	0	21.61	21.56	21.54			
5	64QAM	12	7	21.61	21.52	21.61	22.5	3	
5	64QAM	12	13	21.59	21.67	21.51			
5	64QAM	25	0	21.72	21.60	21.69			

Band 42 Ant2_Default power									
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				42190	42590	42990			
Frequency (MHz)				3460	3500	3540			
20	QPSK	1	0	24.45	23.95	24.83	25.5	0	
20	QPSK	1	49	24.39	23.63	24.41			
20	QPSK	1	99	24.22	23.90	24.53			
20	QPSK	50	0	23.39	23.01	23.87	24.5	1	
20	QPSK	50	24	23.48	22.94	23.64			
20	QPSK	50	50	23.43	22.98	23.71			
20	QPSK	100	0	23.49	22.97	23.68	24.5	1	
20	16QAM	1	0	23.41	22.86	23.85			
20	16QAM	1	49	23.53	22.99	23.52			
20	16QAM	1	99	23.41	22.86	23.73	23.5	2	
20	16QAM	50	0	22.42	21.95	22.75			
20	16QAM	50	24	22.39	21.92	22.47			
20	16QAM	50	50	22.48	21.87	22.65	23.5	2	
20	16QAM	100	0	22.28	21.96	22.61			
20	64QAM	1	0	22.40	21.81	22.55			
20	64QAM	1	49	22.45	21.86	22.62	23.5	2	
20	64QAM	1	99	22.35	21.93	22.88			
20	64QAM	50	0	21.46	21.10	21.92			
20	64QAM	50	24	21.48	20.99	21.47	22.5	3	
20	64QAM	50	50	21.42	20.85	21.45			
20	64QAM	100	0	21.30	20.91	21.58			
Channel				42165	42590	43015	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				3487.5	3500	3542.5			
15	QPSK	1	0	24.45	23.97	24.71	25.5	0	
15	QPSK	1	37	24.44	23.90	24.39			
15	QPSK	1	74	24.38	23.77	24.58			
15	QPSK	36	0	23.33	22.65	23.85	24.5	1	
15	QPSK	36	20	23.68	22.77	23.74			
15	QPSK	36	39	23.49	22.75	23.59			
15	QPSK	75	0	23.42	22.72	23.65	24.5	1	
15	16QAM	1	0	23.37	22.94	23.79			
15	16QAM	1	37	23.53	22.83	23.64			
15	16QAM	1	74	23.33	22.65	23.77	23.5	2	
15	16QAM	36	0	22.94	21.86	22.82			
15	16QAM	36	20	22.93	21.88	22.44			
15	16QAM	36	39	22.77	21.94	22.77	23.5	2	
15	16QAM	75	0	22.67	22.09	22.56			
15	64QAM	1	0	22.66	21.85	22.45	23.5	2	
15	64QAM	1	37	22.77	21.86	22.64			
15	64QAM	1	74	22.67	21.83	22.77			
15	64QAM	36	0	21.64	21.00	21.92	22.5	3	
15	64QAM	36	20	21.51	20.88	21.52			
15	64QAM	36	39	21.48	20.79	21.37			
15	64QAM	75	0	21.17	20.58	21.58			
Channel				42140	42590	43040	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				3455	3500	3545			
10	QPSK	1	0	24.43	24.01	24.66	25.5	0	
10	QPSK	1	25	24.55	23.86	24.48			
10	QPSK	1	49	24.38	23.77	24.49			
10	QPSK	25	0	23.24	22.56	23.85	24.5	1	
10	QPSK	25	12	23.59	22.76	23.60			
10	QPSK	25	25	23.49	22.72	23.63			
10	QPSK	50	0	23.54	22.74	23.54	24.5	1	
10	16QAM	1	0	23.51	23.02	23.92			
10	16QAM	1	25	23.64	22.73	23.71			
10	16QAM	1	49	23.46	22.65	23.73	23.5	2	
10	16QAM	25	0	22.88	21.95	22.89			
10	16QAM	25	12	22.86	21.99	22.47			
10	16QAM	25	25	22.83	22.09	22.68	23.5	2	
10	16QAM	50	0	22.56	22.09	22.60			
10	64QAM	1	0	22.51	21.75	22.31			
10	64QAM	1	25	22.86	21.98	22.65	22.5	3	
10	64QAM	1	49	22.65	21.78	22.63			
10	64QAM	25	0	21.67	21.07	21.95			
10	64QAM	25	12	21.60	20.92	21.54	22.5	3	
10	64QAM	25	25	21.39	20.70	21.50			
10	64QAM	50	0	21.30	20.66	21.71			
Channel				42115	42590	43065	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				3452.5	3500	3547.5			
5	QPSK	1	0	24.41	23.93	24.57	25.5	0	
5	QPSK	1	12	24.40	23.99	24.45			
5	QPSK	1	24	24.50	23.54	24.47			
5	QPSK	12	0	23.17	22.55	23.73	24.5	1	
5	QPSK	12	7	23.67	22.66	23.68			
5	QPSK	12	13	23.67	22.88	23.62			
5	QPSK	25	0	23.46	22.53	23.64	24.5	1	
5	16QAM	1	0	23.37	22.93	23.80			
5	16QAM	1	12	23.62	22.78	23.85			
5	16QAM	1	24	23.47	22.75	23.78	23.5	2	
5	16QAM	12	0	22.83	21.94	22.80			
5	16QAM	12	7	22.85	21.88	22.45			
5	16QAM	12	13	22.72	22.17	22.78	23.5	2	
5	16QAM	25	0	22.49	22.03	22.55			
5	64QAM	1	0	22.40	21.70	22.31			
5	64QAM	1	12	22.76	22.10	22.66	23.5	2	
5	64QAM	1	24	22.75	21.74	22.50			
5	64QAM	12	0	21.67	21.14	22.10			
5	64QAM	12	7	21.65	21.05	21.57	22.5	3	
5	64QAM	12	13	21.26	20.66	21.46			
5	64QAM	25	0	21.29	20.77	21.66			

Band 42 Ant3_DS1&2&Default power									
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				42190	42590	42990	25	0	
Frequency (MHz)				3460	3500	3540			
20	QPSK	1	0	23.83	23.71	24.74	24	1	
20	QPSK	1	49	23.48	23.52	24.66			
20	QPSK	1	99	23.45	23.42	24.62			
20	QPSK	50	0	22.49	22.50	23.85			
20	QPSK	50	24	22.50	22.41	23.80	24	1	
20	QPSK	50	50	22.67	22.70	23.67			
20	QPSK	100	0	22.46	22.64	23.89			
20	16QAM	1	0	22.49	22.65	23.87			
20	16QAM	1	49	22.31	22.41	23.91	24	1	
20	16QAM	1	99	22.67	22.68	23.63			
20	16QAM	50	0	21.63	21.61	22.97			
20	16QAM	50	24	21.69	21.63	22.73			
20	16QAM	50	50	21.46	21.40	22.91	23	2	
20	16QAM	100	0	21.28	21.34	22.84			
20	64QAM	1	0	21.67	21.78	22.92			
20	64QAM	1	49	21.62	21.68	22.63			
20	64QAM	1	99	21.35	21.62	22.79	23	2	
20	64QAM	50	0	20.55	20.61	21.91			
20	64QAM	50	24	20.22	20.35	21.75			
20	64QAM	50	50	20.39	20.56	21.54			
20	64QAM	100	0	20.40	20.72	21.75	22	3	
20	64QAM	100	0	20.40	20.72	21.75			
Channel				42165	42590	43015			
Frequency (MHz)				3457.5	3500	3542.5	Tune-up limit (dBm)	MPR (dB)	
15	QPSK	1	0	23.74	23.77	24.70	25	0	
15	QPSK	1	37	23.36	23.38	24.73			
15	QPSK	1	74	23.33	23.46	24.59			
15	QPSK	38	0	22.49	22.59	23.75			
15	QPSK	38	20	22.44	22.29	23.70	24	1	
15	QPSK	38	39	22.61	22.75	23.58			
15	QPSK	75	0	22.58	22.73	23.82			
15	16QAM	1	0	22.58	22.63	23.82			
15	16QAM	1	37	22.21	22.43	23.83	24	1	
15	16QAM	1	74	22.67	22.64	23.58			
15	16QAM	38	0	21.55	21.54	22.95			
15	16QAM	38	20	21.66	21.61	22.69			
15	16QAM	38	39	21.52	21.42	22.98	23	2	
15	16QAM	75	0	21.24	21.47	22.90			
15	64QAM	1	0	21.80	21.86	22.98			
15	64QAM	1	37	21.71	21.62	22.75			
15	64QAM	1	74	21.33	21.72	22.70	23	2	
15	64QAM	38	0	20.62	20.69	21.93			
15	64QAM	38	20	20.32	20.37	21.75			
15	64QAM	38	39	20.26	20.56	21.68			
15	64QAM	75	0	20.52	20.87	21.70	22	3	
15	64QAM	75	0	20.52	20.87	21.70			
Channel				42140	42590	43040			
Frequency (MHz)				3455	3500	3545	Tune-up limit (dBm)	MPR (dB)	
10	QPSK	1	0	23.48	23.63	24.68	25	0	
10	QPSK	1	25	23.20	23.19	24.50			
10	QPSK	1	49	23.03	23.22	24.56			
10	QPSK	25	0	22.26	22.43	23.56			
10	QPSK	25	12	22.25	22.21	23.55	24	1	
10	QPSK	25	25	22.33	22.66	23.50			
10	QPSK	50	0	22.33	22.68	23.55			
10	16QAM	1	0	22.55	22.40	23.54			
10	16QAM	1	25	22.04	22.37	23.71	24	1	
10	16QAM	1	49	22.50	22.42	23.38			
10	16QAM	25	0	21.28	21.39	22.93			
10	16QAM	25	12	21.65	21.45	22.41			
10	16QAM	25	25	21.32	21.32	22.73	23	2	
10	16QAM	50	0	21.07	21.19	22.68			
10	64QAM	1	0	21.70	21.79	22.95			
10	64QAM	1	25	21.68	21.40	22.45			
10	64QAM	1	49	21.20	21.67	22.60	23	2	
10	64QAM	25	0	20.59	20.40	21.74			
10	64QAM	25	12	20.23	20.33	21.64			
10	64QAM	25	25	20.22	20.37	21.68			
10	64QAM	50	0	20.35	20.63	21.41	22	3	
10	64QAM	50	0	20.35	20.63	21.41			
Channel				42115	42590	43065			
Frequency (MHz)				3452.5	3500	3547.5	Tune-up limit (dBm)	MPR (dB)	
5	QPSK	1	0	23.67	23.68	24.73	25	0	
5	QPSK	1	12	23.40	23.25	24.55			
5	QPSK	1	24	23.20	23.45	24.57			
5	QPSK	12	0	22.47	22.62	23.74			
5	QPSK	12	7	22.23	22.41	23.57	24	1	
5	QPSK	12	13	22.44	22.65	23.69			
5	QPSK	25	0	22.36	22.74	23.69			
5	16QAM	1	0	22.73	22.61	23.79			
5	16QAM	1	12	22.18	22.38	23.87	24	1	
5	16QAM	1	24	22.65	22.53	23.54			
5	16QAM	12	0	21.29	21.35	22.99			
5	16QAM	12	7	21.74	21.64	22.51			
5	16QAM	12	13	21.39	21.34	22.71	23	2	
5	16QAM	25	0	21.24	21.42	22.81			
5	64QAM	1	0	21.88	22.02	22.54			
5	64QAM	1	12	21.92	21.50	22.58			
5	64QAM	1	24	21.43	21.80	22.68	23	2	
5	64QAM	12	0	20.79	20.50	21.78			
5	64QAM	12	7	20.32	20.33	21.74			
5	64QAM	12	13	20.29	20.40	21.91			
5	64QAM	25	0	20.45	20.58	21.49	22	3	
5	64QAM	25	0	20.45	20.58	21.49			
5	64QAM	25	0	20.45	20.58	21.49			
5	64QAM	25	0	20.45	20.58	21.49			

Band 42 Ant5_DS1&2&Default power									
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				42190	42590	42990	25	0	
Frequency (MHz)				3460	3500	3540			
20	QPSK	1	0	23.21	23.35	24.14	25	0	
20	QPSK	1	49	23.21	23.03	23.77			
20	QPSK	1	99	23.03	23.05	23.89			
20	QPSK	50	0	22.43	22.46	22.97	24	1	
20	QPSK	50	24	22.30	22.41	22.85			
20	QPSK	50	50	22.46	22.41	22.90			
20	QPSK	100	0	22.51	22.14	22.80	24	1	
20	16QAM	1	0	22.47	22.39	22.89			
20	16QAM	1	49	22.21	22.30	23.02			
20	16QAM	1	99	22.31	22.39	22.74	23	2	
20	16QAM	50	0	21.24	21.15	22.05			
20	16QAM	50	24	21.38	21.09	22.11			
20	16QAM	50	50	21.10	21.47	21.81	23	2	
20	16QAM	100	0	21.21	21.08	21.77			
20	64QAM	1	0	21.06	21.24	21.87			
20	64QAM	1	49	21.27	21.10	21.98	23	2	
20	64QAM	1	99	21.10	21.21	21.76			
20	64QAM	50	0	20.19	20.18	20.93			
20	64QAM	50	24	20.12	20.16	20.82	22	3	
20	64QAM	50	50	20.18	20.04	20.91			
20	64QAM	100	0	20.11	20.04	20.92			
Channel				42165	42590	43015	25	0	
Frequency (MHz)				3457.5	3500	3542.5			
15	QPSK	1	0	23.17	23.25	24.05	25	0	
15	QPSK	1	37	23.13	23.21	23.70			
15	QPSK	1	74	23.14	23.05	23.76			
15	QPSK	36	0	22.44	22.33	22.81	24	1	
15	QPSK	36	20	22.21	22.39	22.86			
15	QPSK	36	39	22.45	22.36	22.88			
15	QPSK	75	0	22.45	22.12	22.79	24	1	
15	16QAM	1	0	22.26	22.25	22.89			
15	16QAM	1	37	22.22	22.22	22.81			
15	16QAM	1	74	22.16	22.30	22.59	23	2	
15	16QAM	36	0	21.20	21.45	21.90			
15	16QAM	36	20	21.28	21.48	21.91			
15	16QAM	36	39	21.09	21.46	21.89	23	2	
15	16QAM	75	0	21.03	21.08	21.55			
15	64QAM	1	0	21.16	21.13	21.67			
15	64QAM	1	37	21.21	21.14	21.80	22	3	
15	64QAM	1	74	21.24	21.18	21.59			
15	64QAM	36	0	20.10	20.19	20.76			
15	64QAM	36	20	20.12	20.17	20.78	22	3	
15	64QAM	36	39	20.01	20.20	20.73			
15	64QAM	75	0	20.01	20.05	20.82			
Channel				42140	42590	43040	25	0	
Frequency (MHz)				3455	3500	3545			
10	QPSK	1	0	23.14	23.21	23.99	25	0	
10	QPSK	1	25	23.21	23.21	23.71			
10	QPSK	1	49	23.20	23.21	23.71			
10	QPSK	25	0	22.32	22.27	22.88	24	1	
10	QPSK	25	12	22.32	22.36	22.68			
10	QPSK	25	25	22.34	22.31	22.80			
10	QPSK	50	0	22.47	22.02	22.70	24	1	
10	16QAM	1	0	22.47	22.29	22.82			
10	16QAM	1	25	22.03	22.16	22.86			
10	16QAM	1	49	22.31	22.29	22.71	23	2	
10	16QAM	25	0	21.21	21.01	22.07			
10	16QAM	25	12	21.27	21.00	21.96			
10	16QAM	25	25	21.11	21.45	21.77	23	2	
10	16QAM	50	0	21.07	21.32	21.78			
10	64QAM	1	0	21.03	21.05	21.70			
10	64QAM	1	25	21.13	21.03	21.88	22	3	
10	64QAM	1	49	21.10	21.18	21.68			
10	64QAM	25	0	20.07	20.04	20.95			
10	64QAM	25	12	20.13	20.20	20.73	22	3	
10	64QAM	25	25	20.10	20.14	20.89			
10	64QAM	50	0	20.04	20.01	20.88			
Channel				42115	42590	43065	25	0	
Frequency (MHz)				3452.5	3500	3547.5			
5	QPSK	1	0	23.13	23.32	23.99	25	0	
5	QPSK	1	12	23.13	23.26	23.78			
5	QPSK	1	24	23.21	23.16	23.78			
5	QPSK	12	0	22.31	22.37	22.86	24	1	
5	QPSK	12	7	22.26	22.29	22.83			
5	QPSK	12	13	22.44	22.26	22.79			
5	QPSK	25	0	22.45	22.12	22.68	24	1	
5	16QAM	1	0	22.44	22.38	22.88			
5	16QAM	1	12	22.09	22.12	22.86			
5	16QAM	1	24	22.11	22.30	22.71	23	2	
5	16QAM	12	0	21.18	21.05	22.03			
5	16QAM	12	7	21.29	21.23	22.11			
5	16QAM	12	13	21.10	21.47	21.82	23	2	
5	16QAM	25	0	21.05	21.24	21.73			
5	64QAM	1	0	21.03	21.12	21.73			
5	64QAM	1	12	21.24	21.05	21.81	22	3	
5	64QAM	1	24	21.22	21.13	21.63			
5	64QAM	12	0	20.21	20.04	20.88			
5	64QAM	12	7	20.13	20.09	20.79	22	3	
5	64QAM	12	13	20.23	20.12	20.73			
5	64QAM	25	0	20.32	20.21	20.90			

Band 42 Ant6_DS1&2&Default power									
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				42190	42590	42990	24	0	
Frequency (MHz)				3460	3500	3540			
20	QPSK	1	0	22.42	22.75	23.83	23	1	
20	QPSK	1	49	22.28	22.64	23.69			
20	QPSK	1	99	22.18	22.49	23.77			
20	QPSK	50	0	21.34	21.79	22.84			
20	QPSK	50	24	21.07	21.87	22.74	23	1	
20	QPSK	50	50	21.11	21.62	22.82			
20	QPSK	100	0	21.12	21.81	22.74			
20	16QAM	1	0	21.29	21.84	22.68			
20	16QAM	1	49	21.30	21.77	22.74	23	1	
20	16QAM	1	99	21.07	21.67	22.77			
20	16QAM	50	0	20.32	20.78	21.62			
20	16QAM	50	24	20.40	20.92	21.59			
20	16QAM	50	50	20.16	20.88	21.76	22	2	
20	16QAM	100	0	20.08	20.50	21.71			
20	64QAM	1	0	20.28	20.64	21.88			
20	64QAM	1	49	20.46	20.69	21.66			
20	64QAM	1	99	20.18	20.84	21.94	22	2	
20	64QAM	50	0	19.25	19.80	20.88			
20	64QAM	50	24	19.21	19.55	20.64			
20	64QAM	50	50	19.26	19.29	20.77			
20	64QAM	100	0	19.05	19.49	20.71	21	3	
20	64QAM	100	0	19.05	19.49	20.71			
Channel				42165	42590	43015			
Frequency (MHz)				3457.5	3500	3542.5			
15	QPSK	1	0	22.32	22.58	23.65	24	0	
15	QPSK	1	37	22.19	22.41	23.62			
15	QPSK	1	74	22.21	22.45	23.68			
15	QPSK	38	0	21.29	21.81	22.76			
15	QPSK	38	20	21.01	21.91	22.56	23	1	
15	QPSK	38	39	21.00	21.58	22.83			
15	QPSK	75	0	21.32	21.76	22.61			
15	16QAM	1	0	21.27	21.68	22.59			
15	16QAM	1	37	21.19	21.55	22.72	23	1	
15	16QAM	1	74	21.09	21.43	22.67			
15	16QAM	38	0	20.19	20.80	21.39			
15	16QAM	38	20	20.43	20.79	21.38			
15	16QAM	38	39	20.14	20.64	21.76	22	2	
15	16QAM	75	0	20.32	20.46	21.74			
15	64QAM	1	0	20.29	20.56	21.78			
15	64QAM	1	37	20.25	20.54	21.43			
15	64QAM	1	74	20.23	20.81	21.71	22	2	
15	64QAM	38	0	19.23	19.70	20.79			
15	64QAM	38	20	19.16	19.43	20.61			
15	64QAM	38	39	19.03	19.10	20.71			
15	64QAM	75	0	19.30	19.32	20.59	21	3	
15	64QAM	75	0	19.30	19.32	20.59			
Channel				42140	42590	43040			
Frequency (MHz)				3455	3500	3545			
10	QPSK	1	0	22.23	22.77	23.69	24	0	
10	QPSK	1	25	22.19	22.45	23.60			
10	QPSK	1	49	22.19	22.49	23.72			
10	QPSK	25	0	21.28	22.00	22.79			
10	QPSK	25	12	21.13	21.90	22.53	23	1	
10	QPSK	25	25	21.09	21.72	22.80			
10	QPSK	50	0	21.06	21.92	22.67			
10	16QAM	1	0	21.40	21.69	22.56			
10	16QAM	1	25	21.18	21.56	22.70	23	1	
10	16QAM	1	49	21.23	21.38	22.59			
10	16QAM	25	0	20.16	20.85	21.38			
10	16QAM	25	12	20.68	20.74	21.33			
10	16QAM	25	25	20.24	20.59	21.90	22	2	
10	16QAM	50	0	20.03	20.43	21.71			
10	64QAM	1	0	20.22	20.61	21.70			
10	64QAM	1	25	20.30	20.73	21.47			
10	64QAM	1	49	20.00	20.91	21.91	22	2	
10	64QAM	25	0	19.23	19.83	20.82			
10	64QAM	25	12	19.33	19.44	20.64			
10	64QAM	25	25	19.00	19.27	20.63			
10	64QAM	50	0	19.01	19.24	20.55	21	3	
10	64QAM	50	0	19.01	19.24	20.55			
Channel				42115	42590	43065			
Frequency (MHz)				3452.5	3500	3547.5			
5	QPSK	1	0	22.21	22.82	23.81	24	0	
5	QPSK	1	12	22.07	22.48	23.69			
5	QPSK	1	24	22.29	22.51	23.60			
5	QPSK	12	0	21.26	22.13	22.81			
5	QPSK	12	7	21.17	21.93	22.45	23	1	
5	QPSK	12	13	21.03	21.58	22.63			
5	QPSK	25	0	21.04	21.78	22.70			
5	16QAM	1	0	21.62	21.55	22.41			
5	16QAM	1	12	21.14	21.53	22.56	23	1	
5	16QAM	1	24	21.27	21.31	22.60			
5	16QAM	12	0	20.02	20.97	21.35			
5	16QAM	12	7	20.69	20.86	21.40			
5	16QAM	12	13	20.34	20.44	21.98	22	2	
5	16QAM	25	0	20.09	20.40	21.80			
5	64QAM	1	0	20.10	20.61	21.73			
5	64QAM	1	12	20.15	20.67	21.31			
5	64QAM	1	24	21.00	21.02	21.88	22	2	
5	64QAM	12	0	19.23	19.71	20.92			
5	64QAM	12	7	19.44	19.44	20.67			
5	64QAM	12	13	19.11	19.31	20.69			
5	64QAM	25	0	19.00	19.31	20.40	21	3	
5	64QAM	25	0	19.00	19.31	20.40			
5	64QAM	25	0	19.00	19.31	20.40			
5	64QAM	25	0	19.00	19.31	20.40			

GSM1900 Ant1_DS1&2 Down

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1880	1909.8		1850.2	1880	1909.8	
Frequency (MHz)	27.45	27.53	27.50	28.50	18.45	18.53	18.50	19.50
GPRS 1 Tx slot	27.51	27.58	27.54	28.50	18.51	18.58	18.54	19.50
GPRS 2 Tx slots	26.20	26.18	26.11	28.00	20.20	20.18	20.11	22.00
GPRS 3 Tx slots	25.00	24.68	25.14	26.00	20.74	20.40	20.88	21.74
GPRS 4 Tx slots	23.14	23.15	23.14	25.00	20.11	20.15	20.14	22.00
EDGE 1 Tx slot	25.36	25.49	25.42	27.00	16.36	16.48	16.42	18.00
EDGE 2 Tx slots	23.56	23.16	23.36	24.50	17.56	17.16	17.36	18.50
EDGE 3 Tx slots	21.60	21.63	21.72	23.00	17.34	17.37	17.46	18.74
EDGE 4 Tx slots	20.90	20.87	20.77	22.00	17.90	17.87	17.77	19.00

GSM1900 Ant1_DS13 Down

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1880	1909.8		1850.2	1880	1909.8	
Frequency (MHz)	27.43	27.63	27.43	28.50	18.43	18.63	18.43	19.50
GPRS 1 Tx slot	27.45	27.66	27.54	28.50	18.45	18.66	18.54	19.50
GPRS 2 Tx slots	22.05	22.53	22.20	23.00	16.05	16.53	16.20	17.00
GPRS 3 Tx slots	20.43	20.53	20.18	21.00	16.17	16.27	15.92	16.74
GPRS 4 Tx slots	19.27	19.30	19.15	20.00	16.27	16.30	16.15	17.00
EDGE 1 Tx slot	25.09	25.50	25.43	27.00	16.09	16.50	16.43	18.00
EDGE 2 Tx slots	22.23	22.08	22.27	21.00	16.23	16.08	16.27	15.00
EDGE 3 Tx slots	17.62	17.61	17.26	19.00	13.36	13.35	13.00	14.74
EDGE 4 Tx slots	15.75	15.57	15.48	17.00	12.75	12.57	12.48	14.00

WCDMA II Ant1_DS12 Down

WCDMA II Ant1_DS13 Down

WCDMA IV Ant1_DS13 Down

Band	WCDMA II			Tune-up Limit (dBm)	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	
	9262	9400	9538		9262	9400	9538		1312	1413	1738		
TX Channel	9262	9400	9538		9262	9400	9538		1312	1413			
Rx Channel	9662	9800	9938		9662	9800	9938		1537	1638	1738		
Frequency (MHz)	1852.4	1880	1907.6		1852.4	1880	1907.6		1712.4	1732.6	1752.6		
3GPP Rel 99	AMR 12.2Kbps	21.69	21.75	21.68	23.00	18.69	18.89	18.75	20.00	19.83	19.81	19.71	20.00
3GPP Rel 99	RMC 12.2Kbps	21.81	22.01	21.95	23.00	18.93	19.05	18.81	20.00	19.86	19.88	19.78	20.00
3GPP Rel 6	HSDPA Subtest-1	20.71	21.00	21.07	22.00	17.73	17.97	18.05	19.00	18.84	18.75	18.74	19.00
3GPP Rel 6	HSDPA Subtest-2	20.90	21.37	21.03	22.00	18.04	18.27	17.95	19.00	18.78	18.80	18.79	19.00
3GPP Rel 6	HSDPA Subtest-3	20.29	20.29	20.54	21.50	17.22	17.29	17.67	18.50	18.30	18.41	18.36	18.50
3GPP Rel 6	HSDPA Subtest-4	20.37	20.79	20.52	21.50	17.38	17.79	17.61	18.50	18.34	18.35	18.31	18.50
3GPP Rel 8	DC-HSDPA Subtest-1	20.88	20.92	20.95	22.00	17.90	18.04	18.10	19.00	18.78	18.88	18.67	19.00
3GPP Rel 8	DC-HSDPA Subtest-2	20.97	21.00	20.85	22.00	17.97	17.95	17.82	19.00	18.82	18.78	19.00	19.00
3GPP Rel 8	DC-HSDPA Subtest-3	20.43	20.61	20.45	21.50	17.24	17.60	17.56	18.50	18.35	18.37	18.27	18.50
3GPP Rel 8	DC-HSDPA Subtest-4	20.43	20.68	20.48	21.50	17.45	17.65	17.41	18.50	18.32	18.33	18.35	18.50
3GPP Rel 6	HSUPA Subtest-1	21.05	21.04	20.92	22.00	18.06	18.14	17.82	19.00	18.83	18.86	18.83	19.00
3GPP Rel 6	HSUPA Subtest-2	18.91	19.30	18.96	20.00	15.73	16.10	15.98	17.00	16.87	16.40	16.86	17.00
3GPP Rel 6	HSUPA Subtest-3	20.01	19.96	20.15	21.00	16.83	17.00	17.09	18.00	17.87	17.86	17.87	18.00
3GPP Rel 6	HSUPA Subtest-4	18.81	19.08	18.92	20.00	15.89	16.08	15.79	17.00	16.63	16.64	16.99	17.00
3GPP Rel 6	HSUPA Subtest-5	21.05	20.93	20.99	22.00	18.02	17.79	17.93	19.00	18.67	18.78	18.82	19.00

Band 2 Ant1 DS12 Down											
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)				1680	1680	1900					
20	QPSK	1	0	21.47	21.74	21.53	23	0			
20	QPSK	1	49	21.53	21.45	21.60					
20	QPSK	1	99	21.38	21.43	21.43					
20	QPSK	50	0	21.52	21.69	21.45	23	0			
20	QPSK	50	24	21.37	21.38	21.39					
20	QPSK	50	50	21.44	21.29	21.32					
20	QPSK	100	0	21.42	21.62	21.43	23	0			
20	16QAM	1	0	21.56	21.52	21.63					
20	16QAM	1	49	21.66	21.61	21.65					
20	16QAM	1	99	21.42	21.60	21.45	23	0			
20	16QAM	50	0	21.37	21.56	21.43					
20	16QAM	50	24	21.52	21.46	21.34					
20	16QAM	50	50	21.29	21.40	21.44	23	0			
20	16QAM	100	0	21.28	21.43	21.37					
20	64QAM	1	0	21.66	21.50	21.54					
20	64QAM	1	49	21.47	21.60	21.55	23	0			
20	64QAM	1	99	21.24	21.29	21.33					
20	64QAM	50	0	20.84	21.08	21.16					
20	64QAM	50	24	21.14	21.03	20.97	22.5	0.5			
20	64QAM	50	50	20.99	21.10	20.93					
20	64QAM	100	0	21.20	21.15	21.01					
Channel											
Frequency (MHz)				1857.5	1890	1902.5			Tune-up limit (dBm)	MPR (dB)	
15	QPSK	1	0	21.49	21.72	21.59	23	0			
15	QPSK	1	37	21.54	21.52	21.37					
15	QPSK	1	74	21.43	21.33	21.38					
15	QPSK	36	0	21.32	21.51	21.28	23	0			
15	QPSK	36	20	21.49	21.37	21.43					
15	QPSK	36	39	21.37	21.40	21.46					
15	QPSK	75	0	21.39	21.35	21.30	23	0			
15	16QAM	1	0	21.56	21.53	21.69					
15	16QAM	1	37	21.59	21.56	21.64					
15	16QAM	1	74	21.38	21.47	21.46	23	0			
15	16QAM	36	0	21.28	21.50	21.48					
15	16QAM	36	20	21.32	21.33	21.48					
15	16QAM	36	39	21.26	21.39	21.28	23	0			
15	16QAM	75	0	21.40	21.42	21.27					
15	64QAM	1	0	21.62	21.41	21.62					
15	64QAM	1	37	21.51	21.56	21.55	23	0			
15	64QAM	1	74	21.38	21.36	21.49					
15	64QAM	36	0	20.82	21.08	21.04					
15	64QAM	36	20	21.04	21.20	21.08	22.5	0.5			
15	64QAM	36	39	21.07	21.16	20.99					
15	64QAM	75	0	21.17	21.13	20.93					
Channel											
Frequency (MHz)				1855	1880	1905			Tune-up limit (dBm)	MPR (dB)	
10	QPSK	1	0	21.62	21.67	21.50	23	0			
10	QPSK	1	25	21.35	21.46	21.42					
10	QPSK	1	49	21.34	21.49	21.41					
10	QPSK	25	0	21.24	21.44	21.31	23	0			
10	QPSK	25	12	21.28	21.50	21.30					
10	QPSK	25	25	21.35	21.48	21.35					
10	QPSK	50	0	21.28	21.48	21.29	23	0			
10	16QAM	1	0	21.47	21.58	21.67					
10	16QAM	1	25	21.59	21.67	21.60					
10	16QAM	1	49	21.58	21.59	21.40	23	0			
10	16QAM	25	0	21.32	21.38	21.41					
10	16QAM	25	12	21.31	21.38	21.31					
10	16QAM	25	25	21.28	21.45	21.32	23	0			
10	16QAM	50	0	21.35	21.34	21.32					
10	64QAM	1	0	21.44	21.45	21.48					
10	64QAM	1	25	21.42	21.51	21.50	23	0			
10	64QAM	1	49	21.23	21.48	21.49					
10	64QAM	25	0	20.93	21.00	20.83					
10	64QAM	25	12	20.91	20.99	20.91	22.5	0.5			
10	64QAM	25	25	20.80	20.86	20.81					
10	64QAM	50	0	20.99	20.92	20.97					
Channel											
Frequency (MHz)				1852.5	1880	1907.5			Tune-up limit (dBm)	MPR (dB)	
5	QPSK	1	0	21.60	21.70	21.45	23	0			
5	QPSK	1	12	21.48	21.61	21.39					
5	QPSK	1	24	21.49	21.43	21.37					
5	QPSK	12	0	21.25	21.49	21.30	23	0			
5	QPSK	12	7	21.27	21.47	21.48					
5	QPSK	12	13	21.34	21.31	21.28					
5	QPSK	25	0	21.45	21.34	21.43	23	0			
5	16QAM	1	0	21.49	21.47	21.59					
5	16QAM	1	12	21.68	21.52	21.51					
5	16QAM	1	24	21.40	21.54	21.40	23	0			
5	16QAM	12	0	21.31	21.47	21.44					
5	16QAM	12	7	21.53	21.45	21.46					
5	16QAM	12	13	21.44	21.53	21.47	23	0			
5	16QAM	25	0	21.45	21.33	21.42					
5	64QAM	1	0	21.57	21.48	21.62					
5	64QAM	1	12	21.49	21.60	21.43	23	0			
5	64QAM	1	24	21.38	21.48	21.41					
5	64QAM	12	0	20.84	21.07	20.91					
5	64QAM	12	7	20.98	20.99	21.00	22.5	0.5			
5	64QAM	12	13	20.97	21.01	20.88					
5	64QAM	25	0	20.97	20.91	20.95					
Channel											
Frequency (MHz)				1851.5	1880	1908.5			Tune-up limit (dBm)	MPR (dB)	
3	QPSK	1	0	21.50	21.72	21.60	23	0			
3	QPSK	1	8	21.51	21.60	21.43					
3	QPSK	1	14	21.52	21.62	21.39					
3	QPSK	8	0	21.27	21.51	21.34	23	0			
3	QPSK	8	4	21.39	21.37	21.41					
3	QPSK	8	7	21.37	21.49	21.35					
3	QPSK	15	0	21.32	21.34	21.30	23	0			
3	16QAM	1	0	21.56	21.58	21.58					
3	16QAM	1	8	21.52	21.69	21.66					
3	16QAM	1	14	21.37	21.42	21.59	23	0			
3	16QAM	8	0	21.24	21.39	21.46					
3	16QAM	8	4	21.32	21.47	21.31					
3	16QAM	8	7	21.31	21.38	21.30	23	0			
3	16QAM	15	0	21.47	21.47	21.43					
3	64QAM	1	0	21.43	21.55	21.47					
3	64QAM	1	8	21.48	21.63	21.37	23	0			
3	64QAM	1	14	21.22	21.37	21.35					
3	64QAM	8	0	20.98	21.07	21.20					
3	64QAM	8	4	21.14	21.21	21.10	22.5	0.5			
3	64QAM	8	7	21.06	21.19	21.06					
3	64QAM	15	0	21.06	21.13	20.96					
Channel											
Frequency (MHz)				1860	1890	19193			Tune-up limit (dBm)	MPR (dB)	
1.4	QPSK	1	0	21.33	21.47	21.22	23	0			
1.4	QPSK	1	3	21.41	21.37	21.41					
1.4	QPSK	1	5	21.18	21.12	21.17					
1.4	QPSK	3	0	21.45	21.28	21.29	23	0			
1.4	QPSK	3	1	21.36	21.41	21.30					
1.4	QPSK	3	3	21.29	21.22	21.30					
1.4	QPSK	6	0	21.38	21.29	21.45	23	0			
1.4	16QAM	1	0	21.08	21.28	21.05					
1.4	16QAM	1	5	21.23	21.10	21.16					
1.4	16QAM	3	0	21.22	21.07	21.15	23	0			
1.4	16QAM	3	1	21.56	21.39	21.37					
1.4	16QAM	3	1	21.39	21.41	21.52					
1.4	16QAM	3	3	21.37	21.40	21.34	23	0			
1.4	16QAM	6	0	21.61	21.48	21.53					
1.4	64QAM	1	0	21.51	21.47	21.38					
1.4	64QAM	1	3	21.53	21.55	21.32	23	0			
1.4	64QAM	1	5	21.40	21.23	21.39					
1.4	64QAM	3	0	21.53	21.55	21.37					
1.4	64QAM	3	1	21.46	21.57	21.55	22.5	0.5			
1.4	64QAM	3	3	21.52	21.45	21.45					
1.4	64QAM	6	0	20.80	20.92	20.78					

Band 38 Ant1_DSI2&3 Down									
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)				2580	2595	2610			
20	QPSK	1	0	21.68	21.76	21.44	23	0	
20	QPSK	1	49	21.37	21.67	21.52			
20	QPSK	1	99	21.67	21.56	21.58			
20	QPSK	50	0	21.29	21.54	21.31	23	0	
20	QPSK	50	24	21.31	21.37	21.29			
20	QPSK	50	50	21.35	21.41	21.43			
20	QPSK	100	0	21.18	21.62	21.28	23	0	
20	16QAM	1	0	21.67	21.71	21.37			
20	16QAM	1	49	21.46	21.64	21.38			
20	16QAM	1	99	21.59	21.54	21.42	23	0	
20	16QAM	50	0	21.49	21.64	21.31			
20	16QAM	50	24	21.48	21.52	21.61			
20	16QAM	50	50	21.31	21.60	21.48	23	0	
20	16QAM	100	0	21.40	21.50	21.32			
20	64QAM	1	0	21.41	21.49	21.50			
20	64QAM	1	49	21.23	21.50	21.42	23	0	
20	64QAM	1	99	21.36	21.34	21.12			
20	64QAM	50	0	21.03	20.98	20.96			
20	64QAM	50	24	20.87	21.03	20.90	22.5	0.5	
20	64QAM	50	50	20.85	20.88	20.69			
20	64QAM	100	0	20.77	20.94	20.90			
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2612.5			
15	QPSK	1	0	21.60	21.66	21.40	23	0	
15	QPSK	1	37	21.42	21.67	21.63			
15	QPSK	1	74	21.58	21.52	21.55			
15	QPSK	36	0	21.44	21.56	21.25	23	0	
15	QPSK	36	20	21.14	21.42	21.49			
15	QPSK	36	39	21.50	21.56	21.40			
15	QPSK	75	0	21.23	21.31	21.09	23	0	
15	16QAM	1	0	21.66	21.58	21.45			
15	16QAM	1	37	21.58	21.50	21.21			
15	16QAM	1	74	21.56	21.57	21.38	23	0	
15	16QAM	36	0	21.48	21.59	21.42			
15	16QAM	36	20	21.64	21.56	21.42			
15	16QAM	36	39	21.50	21.72	21.40	23	0	
15	16QAM	75	0	21.55	21.64	21.33			
15	64QAM	1	0	21.42	21.54	21.43			
15	64QAM	1	37	21.13	21.45	21.47	23	0	
15	64QAM	1	74	21.26	21.25	21.24			
15	64QAM	36	0	21.04	21.05	21.05			
15	64QAM	36	20	20.97	21.00	20.92	22.5	0.5	
15	64QAM	36	39	20.83	20.97	20.72			
15	64QAM	75	0	20.86	20.99	20.75			
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2575	2595	2615			
10	QPSK	1	0	21.64	21.67	21.41	23	0	
10	QPSK	1	25	21.44	21.72	21.62			
10	QPSK	1	49	21.68	21.63	21.74			
10	QPSK	25	0	21.35	21.58	21.33	23	0	
10	QPSK	25	12	21.16	21.44	21.42			
10	QPSK	25	25	21.52	21.43	21.44			
10	QPSK	50	0	21.34	21.41	21.22	23	0	
10	16QAM	1	0	21.66	21.69	21.56			
10	16QAM	1	25	21.64	21.70	21.35			
10	16QAM	1	49	21.58	21.48	21.38	23	0	
10	16QAM	25	0	21.56	21.49	21.40			
10	16QAM	25	12	21.57	21.62	21.61			
10	16QAM	25	25	21.32	21.76	21.54	23	0	
10	16QAM	50	0	21.41	21.61	21.31			
10	64QAM	1	0	21.45	21.44	21.30			
10	64QAM	1	25	21.14	21.49	21.37	23	0	
10	64QAM	1	49	21.21	21.31	21.31			
10	64QAM	25	0	21.04	21.00	20.92			
10	64QAM	25	12	21.00	20.90	20.87	22.5	0.5	
10	64QAM	25	25	20.64	20.90	20.65			
10	64QAM	50	0	20.82	21.00	20.79			
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2572.5	2595	2617.5			
5	QPSK	1	0	21.59	21.76	21.59	23	0	
5	QPSK	1	12	21.37	21.69	21.50			
5	QPSK	1	24	21.59	21.51	21.56			
5	QPSK	12	0	21.38	21.59	21.36	23	0	
5	QPSK	12	7	21.26	21.46	21.31			
5	QPSK	12	13	21.36	21.58	21.37			
5	QPSK	25	0	21.16	21.43	21.13	23	0	
5	16QAM	1	0	21.53	21.59	21.56			
5	16QAM	1	12	21.60	21.54	21.24			
5	16QAM	1	24	21.42	21.49	21.27	23	0	
5	16QAM	12	0	21.48	21.65	21.52			
5	16QAM	12	7	21.59	21.61	21.52			
5	16QAM	12	13	21.45	21.61	21.55	23	0	
5	16QAM	25	0	21.50	21.56	21.21			
5	64QAM	1	0	21.27	21.55	21.32			
5	64QAM	1	12	21.32	21.59	21.31	23	0	
5	64QAM	1	24	21.20	21.35	21.15			
5	64QAM	12	0	20.90	21.15	20.91			
5	64QAM	12	7	21.03	20.99	20.99	22.5	0.5	
5	64QAM	12	13	20.72	21.00	20.65			
5	64QAM	25	0	20.91	20.88	20.79			

GSM1900An4 DS1 Down

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1880	1909.8		1850.2	1880	1909.8	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	24.76	24.70	24.83	25.50	15.76	15.70	15.83	16.50
GPRS 1 Tx slot	24.80	24.72	24.89	25.50	15.80	15.72	15.89	16.50
GPRS 2 Tx slots	21.87	21.93	22.24	23.00	15.87	15.93	16.24	17.00
GPRS 3 Tx slots	20.20	20.33	19.89	21.00	15.94	16.07	15.73	16.74
GPRS 4 Tx slots	19.10	19.19	19.13	20.00	16.10	16.16	16.13	17.00
EDGE 1 Tx slot	24.87	24.64	24.89	25.00	15.87	15.64	15.89	16.00
EDGE 2 Tx slots	20.27	20.13	20.38	21.00	14.27	14.13	14.38	15.00
EDGE 3 Tx slots	17.70	17.43	17.66	19.00	13.44	13.17	13.40	14.74
EDGE 4 Tx slots	15.77	15.51	15.67	17.00	12.77	12.51	12.67	14.00

GSM1900An4 DS4 Down

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1880	1909.8		1850.2	1880	1909.8	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	26.52	26.35	26.50	27.50	17.52	17.35	17.50	18.50
GPRS 1 Tx slot	26.54	26.41	26.56	27.50	17.54	17.41	17.56	18.50
GPRS 2 Tx slots	23.92	23.95	23.97	25.00	17.92	17.95	17.97	19.00
GPRS 3 Tx slots	21.76	21.82	21.95	23.00	17.50	17.66	17.69	18.74
GPRS 4 Tx slots	20.73	20.67	20.86	22.00	17.73	17.67	17.86	19.00
EDGE 1 Tx slot	25.67	25.44	25.53	27.00	16.67	16.44	16.53	18.00
EDGE 2 Tx slots	20.13	19.68	19.81	21.00	14.13	13.68	13.81	15.00
EDGE 3 Tx slots	17.25	17.48	17.27	19.00	12.99	13.22	13.01	14.74
EDGE 4 Tx slots	15.41	15.58	15.53	17.00	12.41	12.58	12.53	14.00

WCDMA II An4 DS1 Down

WCDMA IV An4 DS1 Down

WCDMA V An4 DS1 Down

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	4367	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	16.69	16.72	16.65	17.50	16.55	16.67	16.50	17.50	22.47	22.56	22.41	23.00
3GPP Rel 99	RMC 12.2Kbps	16.77	16.97	16.67	17.50	16.40	16.76	16.52	17.50	22.49	22.59	22.51	23.00
3GPP Rel 6	HSDPA Subtest-1	15.87	15.99	15.98	16.50	15.49	15.37	15.33	16.50	21.56	21.48	21.51	22.00
3GPP Rel 6	HSDPA Subtest-2	15.84	15.85	15.91	16.50	15.53	15.72	15.48	16.50	21.54	21.52	21.53	22.00
3GPP Rel 6	HSDPA Subtest-3	15.40	15.47	15.58	16.00	15.12	15.22	15.47	16.00	21.11	21.16	21.07	21.50
3GPP Rel 6	HSDPA Subtest-4	15.28	15.46	15.51	16.00	15.13	15.41	15.17	16.00	21.10	21.07	21.00	21.50
3GPP Rel 8	DC-HSDPA Subtest-1	16.00	15.85	15.94	16.50	15.64	15.38	15.71	16.50	21.58	21.40	21.43	22.00
3GPP Rel 8	DC-HSDPA Subtest-2	15.91	15.88	15.79	16.50	15.72	15.62	15.67	16.50	21.55	21.57	21.58	22.00
3GPP Rel 8	DC-HSDPA Subtest-3	15.41	15.56	15.37	16.00	15.02	15.07	15.02	16.00	21.03	21.22	21.09	21.50
3GPP Rel 8	DC-HSDPA Subtest-4	15.22	15.58	15.63	16.00	15.15	15.52	15.24	16.00	21.06	20.87	21.14	21.50
3GPP Rel 8	HSUPA Subtest-1	15.69	16.00	15.85	16.50	15.47	15.59	15.69	16.50	21.59	21.68	21.53	22.00
3GPP Rel 6	HSUPA Subtest-2	13.85	14.00	13.96	14.50	13.41	13.82	13.75	14.50	19.48	19.52	19.52	20.00
3GPP Rel 6	HSUPA Subtest-3	14.70	14.81	15.10	15.50	14.34	14.56	14.61	15.50	20.54	20.48	20.66	21.00
3GPP Rel 6	HSUPA Subtest-4	13.81	13.82	14.01	14.50	13.79	13.62	13.53	14.50	19.66	19.50	19.43	20.00
3GPP Rel 6	HSUPA Subtest-5	15.79	15.73	15.89	16.50	15.84	15.37	15.63	16.50	21.47	21.50	21.52	22.00

WCDMA II An4 DS2 Down

WCDMA IV An4 DS2 Down

WCDMA V An4 DS4 Down

Band	WCDMA II				Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
	9262	9400	9538	1312		1413	1513	1312		1413	1513		
TX Channel	9662	9800	9938		1537	1638	1738		1537	1638	1738		
Rx Channel	9662	9800	9938		1537	1638	1738		1537	1638	1738		
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		1712.4	1732.6	1752.6		
3GPP Rel 99	AMR 12.2Kbps	22.76	22.79	22.65	23.50	23.60	23.70	23.50	24.50	19.76	19.83	19.77	20.50
3GPP Rel 99	RMC 12.2Kbps	22.87	22.88	22.78	23.50	23.30	23.76	23.51	24.50	19.76	19.97	19.91	20.50
3GPP Rel 6	HSDPA Subtest-1	21.89	21.88	21.91	22.50	22.60	22.33	22.44	23.50	19.07	19.10	19.00	19.50
3GPP Rel 6	HSDPA Subtest-2	21.88	21.84	21.99	22.50	22.58	22.61	22.57	23.50	19.13	19.07	19.10	19.50
3GPP Rel 6	HSDPA Subtest-3	21.49	21.45	21.56	22.00	22.17	22.28	22.37	23.00	18.68	18.55	18.69	19.00
3GPP Rel 6	HSDPA Subtest-4	21.34	21.43	21.53	22.00	22.22	22.39	22.26	23.00	18.68	18.49	18.68	19.00
3GPP Rel 8	DC-HSDPA Subtest-1	21.91	21.87	21.97	22.50	22.67	22.43	22.65	23.50	19.21	19.09	19.06	19.50
3GPP Rel 8	DC-HSDPA Subtest-2	21.78	21.99	21.85	22.50	22.70	22.71	22.74	23.50	19.18	18.94	19.07	19.50
3GPP Rel 8	DC-HSDPA Subtest-3	21.32	21.55	21.47	22.00	21.95	22.12	22.03	23.00	18.54	18.81	18.55	19.00
3GPP Rel 8	DC-HSDPA Subtest-4	21.28	21.60	21.54	22.00	22.24	22.43	22.18	23.00	18.54	18.56	18.70	19.00
3GPP Rel 6	HSUPA Subtest-1	21.58	22.04	21.84	22.50	22.59	22.66	22.72	23.50	18.95	19.18	19.15	19.50
3GPP Rel 6	HSUPA Subtest-2	19.76	19.89	19.93	20.50	20.42	20.74	20.80	21.50	16.95	17.19	17.11	17.50
3GPP Rel 6	HSUPA Subtest-3	20.64	20.81	21.06	21.50	21.22	21.63	21.52	22.50	17.94	17.96	18.09	18.50
3GPP Rel 6	HSUPA Subtest-4	19.90	19.89	19.91	20.50	20.70	20.68	20.55	21.50	17.16	16.99	17.06	17.50
3GPP Rel 6	HSUPA Subtest-5	21.73	21.81	21.81	22.50	22.78	22.45	22.54	23.50	18.90	19.06	19.19	19.50

WCDMA II An4 DS4

	Band	WCDMA II			Tune-up Limit (dBm)
	TX Channel	9262	9400	9538	
	Rx Channel	9662	9800	9938	
	Frequency (MHz)	1852.4	1880	1907.6	
3GPP Rel 99	AMR 12.2Kbps	19.29	19.20	19.07	20.00
3GPP Rel 99	RMC 12.2Kbps	19.37	19.46	19.33	20.00
3GPP Rel 6	HSDPA Subtest-1	18.30	18.33	18.41	19.00
3GPP Rel 6	HSDPA Subtest-2	18.40	18.33	18.43	19.00
3GPP Rel 6	HSDPA Subtest-3	17.93	17.95	17.97	18.50
3GPP Rel 6	HSDPA Subtest-4	17.93	18.03	18.00	18.50
3GPP Rel 8	DC-HSDPA Subtest-1	18.46	18.41	18.59	19.00
3GPP Rel 8	DC-HSDPA Subtest-2	18.22	18.40	18.38	19.00
3GPP Rel 8	DC-HSDPA Subtest-3	17.88	18.09	18.02	18.50
3GPP Rel 8	DC-HSDPA Subtest-4	17.77	18.10	18.01	18.50
3GPP Rel 6	HSUPA Subtest-1	18.17	18.60	18.37	19.00
3GPP Rel 6	HSUPA Subtest-2	16.31	16.44	16.46	17.00
3GPP Rel 6	HSUPA Subtest-3	17.15	17.30	17.61	18.00
3GPP Rel 6	HSUPA Subtest-4	16.38	16.34	16.31	17.00
3GPP Rel 6	HSUPA Subtest-5	18.12	18.39	18.42	19.00

Band 2 Ant4 DSI1 Down											
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)				1860	1880	1900					
20	QPSK	1	0	16.28	16.47	16.41	17.5	0			
20	QPSK	1	49	16.18	16.36	16.40					
20	QPSK	1	99	16.08	16.18	16.30					
20	QPSK	50	0	16.36	16.43	16.24					
20	QPSK	50	24	16.26	16.29	16.33	17.5	0			
20	QPSK	50	50	16.22	16.28	16.30					
20	QPSK	100	0	16.32	16.46	16.41					
20	16QAM	1	0	16.17	16.35	16.45					
20	16QAM	1	49	16.10	16.23	16.39	17.5	0			
20	16QAM	1	99	16.20	16.34	16.41					
20	16QAM	50	0	16.34	16.32	16.42					
20	16QAM	50	24	16.37	16.17	16.44					
20	16QAM	50	50	16.34	16.40	16.46	17.5	0			
20	16QAM	100	0	16.35	16.44	16.33					
20	64QAM	1	0	16.15	16.34	16.39					
20	64QAM	1	49	16.08	16.18	16.32	17.5	0			
20	64QAM	1	99	15.94	16.30	16.37					
20	64QAM	50	0	15.97	16.11	16.27					
20	64QAM	50	24	16.15	15.98	16.19					
20	64QAM	50	50	15.85	15.97	16.18	17.5	0			
20	64QAM	100	0	16.33	16.24	16.43					
Channel											
Frequency (MHz)				1857.5	1890	1902.5			Tune-up limit (dBm)	MPR (dB)	
15	QPSK	1	0	16.34	16.38	16.32	17.5	0			
15	QPSK	1	37	16.13	16.33	16.39					
15	QPSK	1	74	16.10	16.20	16.39					
15	QPSK	36	0	16.45	16.43	16.46					
15	QPSK	36	20	16.16	16.24	16.24	17.5	0			
15	QPSK	36	39	16.28	16.38	16.38					
15	QPSK	75	0	16.24	16.44	16.38					
15	16QAM	1	0	16.17	16.30	16.43					
15	16QAM	1	37	16.08	16.21	16.31	17.5	0			
15	16QAM	1	74	16.17	16.25	16.34					
15	16QAM	36	0	16.42	16.32	16.33					
15	16QAM	36	20	16.29	16.16	16.23	17.5	0			
15	16QAM	36	39	16.36	16.33	16.42					
15	16QAM	75	0	16.28	16.34	16.24					
15	64QAM	1	0	16.15	16.28	16.30	17.5	0			
15	64QAM	1	37	16.02	16.13	16.24					
15	64QAM	1	74	15.86	16.25	16.35					
15	64QAM	36	0	16.04	16.20	16.29					
15	64QAM	36	20	16.10	16.06	16.19	17.5	0			
15	64QAM	36	39	15.81	16.01	16.10					
15	64QAM	75	0	16.38	16.31	16.46					
Channel											
Frequency (MHz)				1855	1880	1905			Tune-up limit (dBm)	MPR (dB)	
10	QPSK	1	0	16.36	16.37	16.41	17.5	0			
10	QPSK	1	25	16.16	16.46	16.41					
10	QPSK	1	49	16.07	16.17	16.28					
10	QPSK	25	0	16.29	16.42	16.39					
10	QPSK	25	12	16.32	16.22	16.39	17.5	0			
10	QPSK	25	25	16.20	16.31	16.32					
10	QPSK	50	0	16.30	16.37	16.41					
10	16QAM	1	0	16.09	16.36	16.46					
10	16QAM	1	25	16.15	16.17	16.38	17.5	0			
10	16QAM	1	49	16.29	16.26	16.42					
10	16QAM	25	0	16.27	16.32	16.44					
10	16QAM	25	12	16.33	16.13	16.43	17.5	0			
10	16QAM	25	25	16.41	16.43	16.45					
10	16QAM	50	0	16.32	16.40	16.28					
10	64QAM	1	0	16.17	16.40	16.30	17.5	0			
10	64QAM	1	25	16.18	16.27	16.37					
10	64QAM	1	49	15.99	16.21	16.30					
10	64QAM	25	0	16.03	16.19	16.34					
10	64QAM	25	12	16.15	15.94	16.25	17.5	0			
10	64QAM	25	25	15.92	16.03	16.10					
10	64QAM	50	0	16.31	16.18	16.45					
Channel											
Frequency (MHz)				1852.5	1880	1907.5			Tune-up limit (dBm)	MPR (dB)	
5	QPSK	1	0	16.32	16.45	16.46	17.5	0			
5	QPSK	1	12	16.28	16.40	16.37					
5	QPSK	1	24	16.34	16.46	16.39					
5	QPSK	12	0	16.42	16.45	16.46					
5	QPSK	12	7	16.32	16.33	16.23	17.5	0			
5	QPSK	12	13	16.30	16.21	16.32					
5	QPSK	25	0	16.27	16.43	16.39					
5	16QAM	1	0	16.23	16.37	16.41					
5	16QAM	1	12	16.12	16.31	16.42	17.5	0			
5	16QAM	1	24	16.13	16.39	16.38					
5	16QAM	12	0	16.26	16.32	16.35					
5	16QAM	12	7	16.28	16.24	16.44	17.5	0			
5	16QAM	12	13	16.32	16.40	16.41					
5	16QAM	25	0	16.34	16.42	16.39					
5	64QAM	1	0	16.10	16.34	16.29	17.5	0			
5	64QAM	1	12	16.07	16.10	16.33					
5	64QAM	1	24	15.90	16.27	16.35					
5	64QAM	12	0	16.06	16.17	16.21					
5	64QAM	12	7	16.14	16.04	16.15	17.5	0			
5	64QAM	12	13	15.92	15.98	16.10					
5	64QAM	25	0	16.40	16.27	16.45					
Channel											
Frequency (MHz)				1851.5	1880	1908.5			Tune-up limit (dBm)	MPR (dB)	
3	QPSK	1	0	16.33	16.45	16.38	17.5	0			
3	QPSK	1	8	16.15	16.42	16.40					
3	QPSK	1	14	16.42	16.30	16.28					
3	QPSK	8	0	16.32	16.33	16.32					
3	QPSK	8	4	16.36	16.31	16.40	17.5	0			
3	QPSK	8	7	16.22	16.38	16.42					
3	QPSK	15	0	16.37	16.34	16.39					
3	16QAM	1	0	16.21	16.43	16.34					
3	16QAM	1	8	16.07	16.26	16.37	17.5	0			
3	16QAM	1	14	16.22	16.32	16.40					
3	16QAM	8	0	16.28	16.27	16.33					
3	16QAM	8	4	16.27	16.18	16.37	17.5	0			
3	16QAM	8	7	16.31	16.44	16.37					
3	16QAM	15	0	16.25	16.31	16.40					
3	64QAM	1	0	16.17	16.25	16.39	17.5	0			
3	64QAM	1	8	16.07	16.15	16.41					
3	64QAM	1	14	15.88	16.34	16.45					
3	64QAM	8	0	15.98	16.01	16.27					
3	64QAM	8	4	16.12	16.06	16.26	17.5	0			
3	64QAM	8	7	15.78	15.87	16.24					
3	64QAM	15	0	16.32	16.29	16.36					
Channel											
Frequency (MHz)				18607	18900	19193			Tune-up limit (dBm)	MPR (dB)	
1.4	QPSK	1	0	16.05	16.28	16.19	17.5	0			
1.4	QPSK	1	3	16.00	16.29	16.20					
1.4	QPSK	1	5	15.88	16.17	16.19					
1.4	QPSK	3	0	16.12	16.16	16.30					
1.4	QPSK	3	1	15.96	16.31	16.27	17.5	0			
1.4	QPSK	3	3	15.95	16.25	16.24					
1.4	QPSK	6	0	16.05	16.33	16.27					
1.4	16QAM	1	0	16.26	16.34	16.46					
1.4	16QAM	1	3	16.30	16.40	16.44	17.5	0			
1.4	16QAM	1	5	16.19	16.34	16.42					
1.4	16QAM	3	0	16.17	16.14	16.26					
1.4	16QAM	3	1	16.17	16.09	16.38					
1.4	16QAM	3	3	15.99	16.10	16.18	17.5	0			
1.4	16QAM	6	0	16.18	16.19	16.25					
1.4	64QAM	1	0	16.15	16.01	16.31					
1.4	64QAM	1	3	16.04	16.12	16.28					
1.4	64QAM	1	5	16.12	16.10	16.33	17.5	0			
1.4	64QAM	3	0	16.20	16.23	16.32					
1.4	64QAM	3	1	16.20	16.09	16.28					
1.4	64QAM	3	3	16.10	16.09	16.34					
1.4	64QAM	6	0	15.93	16.05	16.30	17.5	0			

Band 4 Ant4 DSI1 Down														
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)				1720	1732.5	1745								
20	QPSK	1	0	17.11	17.25	16.99	18.5	0						
20	QPSK	1	49	16.98	16.91	17.12								
20	QPSK	1	99	16.84	16.96	16.97								
20	QPSK	50	0	16.95	17.21	17.10								
20	QPSK	50	24	17.20	17.20	17.17	18.5	0						
20	QPSK	50	50	17.07	17.16	17.13								
20	QPSK	100	0	16.93	17.19	17.08								
20	16QAM	1	0	17.02	17.06	17.00								
20	16QAM	1	49	16.87	16.88	16.98	18.5	0						
20	16QAM	1	99	16.88	16.87	16.97								
20	16QAM	50	0	16.96	17.16	16.97								
20	16QAM	50	24	17.17	17.08	17.08								
20	16QAM	50	50	17.01	17.10	16.95	18.5	0						
20	16QAM	100	0	17.03	17.15	17.24								
20	64QAM	1	0	17.07	17.08	17.24								
20	64QAM	1	49	17.10	17.24	17.15								
20	64QAM	1	99	16.99	17.06	17.10	18.5	0						
20	64QAM	50	0	17.00	17.03	17.13								
20	64QAM	50	24	17.14	17.03	17.15								
20	64QAM	50	50	17.01	17.07	17.19								
20	64QAM	100	0	17.05	17.03	17.15	18.5	0						
Channel														
Frequency (MHz)														
				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)						
Frequency (MHz)				1717.5	1732.5	1747.5								
15	QPSK	1	0	17.09	17.18	16.96	18.5	0						
15	QPSK	1	37	17.04	16.90	17.14								
15	QPSK	1	74	16.90	16.99	17.12								
15	QPSK	36	0	16.97	17.10	17.08								
15	QPSK	36	20	17.13	17.19	17.19	18.5	0						
15	QPSK	36	39	17.10	17.09	17.03								
15	QPSK	75	0	16.89	17.12	17.18								
15	16QAM	1	0	16.94	16.97	17.12								
15	16QAM	1	37	17.00	17.00	17.01	18.5	0						
15	16QAM	1	74	16.80	16.84	17.01								
15	16QAM	36	0	17.07	17.09	17.11								
15	16QAM	36	20	17.07	17.15	17.23								
15	16QAM	36	39	17.06	17.16	16.97	18.5	0						
15	16QAM	75	0	17.03	16.96	17.24								
15	64QAM	1	0	17.19	17.12	17.20								
15	64QAM	1	37	17.12	17.13	17.20								
15	64QAM	1	74	17.05	17.20	17.17	18.5	0						
15	64QAM	36	0	17.05	17.03	17.08								
15	64QAM	36	20	17.23	16.97	17.11								
15	64QAM	36	39	17.16	17.12	17.16								
15	64QAM	75	0	17.05	16.96	17.11	18.5	0						
Channel														
Frequency (MHz)														
				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)						
Frequency (MHz)				1715	1732.5	1750								
10	QPSK	1	0	17.14	17.20	16.96	18.5	0						
10	QPSK	1	25	17.04	17.07	17.04								
10	QPSK	1	49	16.92	16.84	16.98								
10	QPSK	25	0	16.95	17.12	17.13								
10	QPSK	25	12	17.10	17.17	17.21	18.5	0						
10	QPSK	25	25	16.97	17.07	17.15								
10	QPSK	50	0	16.93	17.07	17.18								
10	16QAM	1	0	17.04	17.01	17.04								
10	16QAM	1	25	16.90	16.96	16.94	18.5	0						
10	16QAM	1	49	16.78	16.99	17.05								
10	16QAM	25	0	17.07	17.16	17.10								
10	16QAM	25	12	17.09	17.17	17.10								
10	16QAM	25	25	17.10	17.17	17.00	18.5	0						
10	16QAM	50	0	17.01	16.96	17.21								
10	64QAM	1	0	17.23	17.07	17.18								
10	64QAM	1	25	17.12	17.10	17.09								
10	64QAM	1	49	17.16	17.20	17.15	18.5	0						
10	64QAM	25	0	17.13	17.13	17.09								
10	64QAM	25	12	17.16	17.01	16.99								
10	64QAM	25	25	17.15	17.00	17.13								
10	64QAM	50	0	17.16	16.93	17.09	18.5	0						
Channel														
Frequency (MHz)														
				1927.5	1937.5	2037.5	Tune-up limit (dBm)	MPR (dB)						
Frequency (MHz)				1712.5	1732.5	1752.5								
5	QPSK	1	0	17.16	17.22	17.05	18.5	0						
5	QPSK	1	12	16.85	17.00	17.14								
5	QPSK	1	24	16.85	16.98	17.12								
5	QPSK	12	0	17.08	17.19	17.02								
5	QPSK	12	7	17.04	17.21	17.09	18.5	0						
5	QPSK	12	13	16.93	17.07	17.19								
5	QPSK	25	0	16.88	17.20	17.12								
5	16QAM	1	0	17.01	17.04	17.14								
5	16QAM	1	12	16.97	17.02	16.85	18.5	0						
5	16QAM	1	24	16.81	16.83	16.99								
5	16QAM	12	0	16.90	17.23	16.96								
5	16QAM	12	7	17.21	17.23	17.21								
5	16QAM	12	13	17.03	17.05	17.01	18.5	0						
5	16QAM	25	0	17.13	16.98	17.15								
5	64QAM	1	0	17.13	17.19	17.19								
5	64QAM	1	12	17.23	17.17	17.18								
5	64QAM	1	24	17.04	17.15	17.24	18.5	0						
5	64QAM	12	0	17.01	17.19	17.12								
5	64QAM	12	7	17.13	16.98	17.15								
5	64QAM	12	13	17.11	17.13	17.13								
5	64QAM	25	0	17.07	17.01	17.05	18.5	0						
Channel														
Frequency (MHz)														
				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)						
Frequency (MHz)				1711.5	1732.5	1753.5								
3	QPSK	1	0	17.17	17.17	16.93	18.5	0						
3	QPSK	1	8	16.99	16.92	17.14								
3	QPSK	1	14	17.03	17.00	17.09								
3	QPSK	8	0	17.01	17.11	16.99								
3	QPSK	8	4	17.12	17.18	17.10	18.5	0						
3	QPSK	8	7	17.02	17.04	17.09								
3	QPSK	15	0	16.94	17.14	17.15								
3	16QAM	1	0	16.97	17.05	17.02								
3	16QAM	1	8	16.92	16.96	16.90	18.5	0						
3	16QAM	1	14	16.83	16.99	17.08								
3	16QAM	8	0	17.03	17.08	16.97								
3	16QAM	8	4	17.10	17.14	17.18								
3	16QAM	8	7	17.05	17.14	17.04	18.5	0						
3	16QAM	15	0	17.10	17.02	17.20								
3	64QAM	1	0	17.13	17.07	17.15								
3	64QAM	1	8	17.19	17.24	17.19								
3	64QAM	1	14	16.98	17.12	17.24	18.5	0						
3	64QAM	8	0	17.08	17.07	17.19								
3	64QAM	8	4	17.21	17.11	17.04								
3	64QAM	8	7	17.12	17.06	17.20								
3	64QAM	15	0	17.16	17.07	17.04	18.5							
Channel														
Frequency (MHz)														
				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)						
Frequency (MHz)				1710.7	1732.5	1754.3								
1.4	QPSK	1	0	17.24	17.12	16.87	18.5	0						
1.4	QPSK	1	3	17.00	16.81	17.21								
1.4	QPSK	1	5	17.11	16.89	17.19								
1.4	QPSK	3	0	16.94	17.08	17.21								
1.4	QPSK	3	1	17.00	17.21	17.09	18.5	0						
1.4	QPSK	3	3	17.09	17.07	17.09								
1.4	QPSK	6	0	17.15	17.03	16.93								
1.4	QPSK	6	1	16.99	17.06	17.04								
1.4	16QAM	1	3	17.23	16.84	17.07	18.5	0						
1.4	16QAM	1	5	16.85	17.15	17.07								
1.4	16QAM	3	0	16.91	17.05	17.19								
1.4	16QAM	3	1	16.98	17.08	17.04								
1.4	16QAM	3	3	17.24	17.04	16.84	18.5	0						
1.4	16QAM	6	0	17.11	16.80	17.18								
1.4	16QAM	1	0	17.07	17.00	17.21								
1.4	16QAM	1	3	16.99	17.06	17.19								
1.4	64QAM	1	5	17.14	17.16	16.92	18.5	0						
1.4	64QAM	3	0	16.99	16.86	17.19								
1.4	64QAM	3	1	17.02	16.87	17.24								
1.4	64QAM	3	3	16.99	16.98	17.15								
1.4	64QAM	6	0	17.01	17.20	17.23	18.5							

Band 38 Ant4 DS11 Down									
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)				2580	2595	2610			
20	QPSK	1	0	21.07	21.18	21.16	22	0	
20	QPSK	1	49	20.92	20.90	21.02			
20	QPSK	1	99	21.02	21.02	21.15			
20	QPSK	50	0	21.02	21.11	20.81	22	0	
20	QPSK	50	24	20.98	20.77	20.81			
20	QPSK	50	50	21.02	20.89	21.00			
20	QPSK	100	0	20.91	20.95	20.84	22	0	
20	16QAM	1	0	21.08	21.13	21.12			
20	16QAM	1	49	20.94	20.85	20.90			
20	16QAM	1	99	21.03	20.91	21.10	22	0	
20	16QAM	50	0	21.11	21.16	20.69			
20	16QAM	50	24	21.02	20.67	20.79			
20	16QAM	50	50	20.92	20.83	20.96	22	0	
20	16QAM	100	0	20.98	20.97	20.92			
20	64QAM	1	0	20.86	20.89	21.03			
20	64QAM	1	49	20.98	21.08	21.10	22	0	
20	64QAM	1	99	20.87	20.97	21.02			
20	64QAM	50	0	21.07	21.12	21.12			
20	64QAM	50	24	20.96	21.07	20.80	22	0	
20	64QAM	50	50	20.80	20.71	20.76			
20	64QAM	100	0	21.11	20.94	20.90			
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2612.5	(dBm)		
15	QPSK	1	0	20.98	21.11	21.11	22	0	
15	QPSK	1	37	21.10	21.03	20.94			
15	QPSK	1	74	21.12	21.03	21.07			
15	QPSK	36	0	21.00	20.96	20.84	22	0	
15	QPSK	36	20	21.04	20.94	20.95			
15	QPSK	36	39	20.91	20.97	20.97			
15	QPSK	75	0	20.97	21.14	20.75	22	0	
15	16QAM	1	0	20.87	20.97	21.07			
15	16QAM	1	37	21.14	21.00	20.97			
15	16QAM	1	74	20.97	20.93	20.96	22	0	
15	16QAM	36	0	20.50	20.44	20.37			
15	16QAM	36	20	20.60	20.41	20.32			
15	16QAM	36	39	20.42	20.55	20.43	22	0	
15	16QAM	75	0	20.50	20.34	20.35			
15	64QAM	1	0	21.08	21.16	21.12			
15	64QAM	1	37	20.91	20.82	21.12	22	0	
15	64QAM	1	74	21.00	20.98	21.11			
15	64QAM	36	0	21.07	21.07	20.89			
15	64QAM	36	20	20.99	20.87	20.71	22	0	
15	64QAM	36	39	20.97	20.81	21.07			
15	64QAM	75	0	21.01	20.83	20.94			
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2575	2595	2615	(dBm)		
10	QPSK	1	0	21.13	21.07	21.14	22	0	
10	QPSK	1	25	20.94	20.90	20.93			
10	QPSK	1	49	21.08	21.13	21.08			
10	QPSK	25	0	20.94	20.99	20.99	22	0	
10	QPSK	25	12	21.04	20.64	20.73			
10	QPSK	25	25	20.97	20.79	21.03			
10	QPSK	50	0	21.06	21.04	21.03	22	0	
10	16QAM	1	0	20.82	20.96	21.08			
10	16QAM	1	25	20.96	21.12	21.04			
10	16QAM	1	49	21.14	20.96	21.14	22	0	
10	16QAM	25	0	21.04	20.99	20.96			
10	16QAM	25	12	20.88	21.08	20.91			
10	16QAM	25	25	20.96	21.07	20.84	22	0	
10	16QAM	50	0	20.88	20.82	20.92			
10	64QAM	1	0	21.15	21.05	21.01			
10	64QAM	1	25	20.99	21.15	21.05	22	0	
10	64QAM	1	49	21.07	21.17	20.86			
10	64QAM	25	0	20.86	21.17	20.87			
10	64QAM	25	12	21.06	20.96	20.96	22	0	
10	64QAM	25	25	20.83	20.92	21.05			
10	64QAM	50	0	21.07	20.94	21.12			
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2572.5	2595	2617.5	(dBm)		
5	QPSK	1	0	21.15	21.06	21.03	22	0	
5	QPSK	1	12	20.94	20.99	20.99			
5	QPSK	1	24	21.03	21.08	21.00			
5	QPSK	12	0	20.89	21.03	20.89	22	0	
5	QPSK	12	7	20.95	20.74	20.73			
5	QPSK	12	13	20.95	20.75	20.93			
5	QPSK	25	0	21.06	21.10	20.96	22	0	
5	16QAM	1	0	20.78	21.01	21.03			
5	16QAM	1	12	21.02	21.08	21.07			
5	16QAM	1	24	21.13	20.98	21.13	22	0	
5	16QAM	12	0	21.02	20.91	20.98			
5	16QAM	12	7	20.94	21.12	21.01			
5	16QAM	12	13	20.86	21.01	20.87	22	0	
5	16QAM	25	0	20.84	20.70	20.83			
5	64QAM	1	0	21.11	21.02	21.02			
5	64QAM	1	12	20.97	21.06	20.97	22	0	
5	64QAM	1	24	21.09	21.15	20.91			
5	64QAM	12	0	20.90	21.11	20.85			
5	64QAM	12	7	21.03	20.68	20.75	22	0	
5	64QAM	12	13	20.89	20.81	20.96			
5	64QAM	25	0	21.13	21.02	21.06			

Band 38 Ant4 DS14 Down									
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)				2580	2595	2610			
20	QPSK	1	0	23.23	23.35	23.12	24	0	
20	QPSK	1	49	23.17	23.17	23.21			
20	QPSK	1	99	22.89	22.95	22.95			
20	QPSK	50	0	23.14	23.18	23.06	24	0	
20	QPSK	50	24	23.04	22.98	23.08			
20	QPSK	50	50	23.01	22.92	23.08			
20	QPSK	100	0	23.31	23.32	23.26	24	0	
20	16QAM	1	0	23.13	23.27	23.27			
20	16QAM	1	49	23.12	23.16	23.23			
20	16QAM	1	99	23.14	23.26	23.27	23.5	0.5	
20	16QAM	50	0	22.83	22.73	22.96			
20	16QAM	50	24	22.75	22.69	22.88			
20	16QAM	50	50	23.05	22.85	22.85	23.5	0.5	
20	16QAM	100	0	22.84	22.92	22.79			
20	64QAM	1	0	22.44	22.69	22.63			
20	64QAM	1	49	22.62	22.73	22.45	23.5	0.5	
20	64QAM	1	99	22.47	22.32	22.43			
20	64QAM	50	0	21.85	21.75	21.70			
20	64QAM	50	24	21.90	21.73	21.86	22.5	1.5	
20	64QAM	50	50	21.90	21.81	21.88			
20	64QAM	100	0	21.96	21.79	21.74			
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2612.5			
15	QPSK	1	0	22.99	23.25	23.11	24	0	
15	QPSK	1	37	23.17	23.04	22.75			
15	QPSK	1	74	22.93	22.89	23.06			
15	QPSK	36	0	23.12	23.18	22.94	24	0	
15	QPSK	36	20	23.14	23.05	23.08			
15	QPSK	36	39	22.90	22.83	23.18			
15	QPSK	75	0	23.22	23.31	23.33	24	0	
15	16QAM	1	0	23.20	23.15	23.16			
15	16QAM	1	37	23.13	23.11	23.17			
15	16QAM	1	74	23.25	23.19	23.35	23.5	0.5	
15	16QAM	36	0	22.78	22.78	22.97			
15	16QAM	36	20	22.78	22.80	22.82			
15	16QAM	36	39	22.09	22.74	22.91	23.5	0.5	
15	16QAM	75	0	22.81	22.88	22.84			
15	64QAM	1	0	22.36	22.61	22.67			
15	64QAM	1	37	22.71	22.79	22.43	23.5	0.5	
15	64QAM	1	74	22.55	22.30	22.52			
15	64QAM	36	0	21.83	21.75	21.63			
15	64QAM	36	20	21.98	21.66	21.77	22.5	1.5	
15	64QAM	36	39	21.79	21.71	21.99			
15	64QAM	75	0	21.93	21.79	21.75			
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2575	2595	2615			
10	QPSK	1	0	22.83	23.24	23.07	24	0	
10	QPSK	1	25	23.04	23.14	22.93			
10	QPSK	1	49	22.94	23.05	22.87			
10	QPSK	25	0	23.11	23.18	23.16	24	0	
10	QPSK	25	12	23.14	23.09	23.12			
10	QPSK	25	25	22.95	22.89	23.19			
10	QPSK	50	0	23.27	23.29	23.29	24	0	
10	16QAM	1	0	23.10	23.35	23.21			
10	16QAM	1	25	23.23	23.09	23.27			
10	16QAM	1	49	23.08	23.27	23.18	23.5	0.5	
10	16QAM	25	0	22.74	22.71	22.90			
10	16QAM	25	12	22.67	22.81	22.93			
10	16QAM	25	25	23.10	22.74	22.95	23.5	0.5	
10	16QAM	50	0	22.74	23.01	22.81			
10	64QAM	1	0	22.52	22.64	22.54			
10	64QAM	1	25	22.65	22.72	22.45	23.5	0.5	
10	64QAM	1	49	22.45	22.22	22.44			
10	64QAM	25	0	21.85	21.64	21.70			
10	64QAM	25	12	21.83	21.85	21.79	22.5	1.5	
10	64QAM	25	25	21.79	21.92	21.84			
10	64QAM	50	0	22.03	21.77	21.62			
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2572.5	2595	2617.5			
5	QPSK	1	0	22.83	23.33	23.06	24	0	
5	QPSK	1	12	23.01	23.01	22.87			
5	QPSK	1	24	22.92	22.86	22.97			
5	QPSK	12	0	23.12	23.26	22.95	24	0	
5	QPSK	12	7	23.08	23.02	23.07			
5	QPSK	12	13	23.01	22.83	23.04			
5	QPSK	25	0	23.21	23.34	23.21	24	0	
5	16QAM	1	0	23.06	23.25	23.19			
5	16QAM	1	12	23.19	23.14	23.27			
5	16QAM	1	24	23.09	23.28	23.26	23.5	0.5	
5	16QAM	12	0	22.82	22.69	22.86			
5	16QAM	12	7	22.70	22.71	22.82			
5	16QAM	12	13	23.00	22.82	22.89	23.5	0.5	
5	16QAM	25	0	22.81	22.83	22.71			
5	64QAM	1	0	22.33	22.80	22.72			
5	64QAM	1	12	22.70	22.71	22.38	23.5	0.5	
5	64QAM	1	24	22.39	22.31	22.49			
5	64QAM	12	0	21.94	21.71	21.66			
5	64QAM	12	7	21.89	21.84	21.77	22.5	1.5	
5	64QAM	12	13	21.91	21.75	21.97			
5	64QAM	25	0	21.93	21.68	21.63			

Band 42 Ant2_DSI1 Down									
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)									
20	QPSK	1	0	18.41	18.44	18.51	19.5	0	
20	QPSK	1	49	18.23	18.15	18.31			
20	QPSK	1	99	18.21	18.32	18.19			
20	QPSK	50	0	18.02	18.05	18.37	19.5	0	
20	QPSK	50	24	17.99	18.13	17.98			
20	QPSK	50	50	18.26	18.23	18.02			
20	QPSK	100	0	18.21	18.35	18.46	19.5	0	
20	16QAM	1	0	18.02	18.04	18.25			
20	16QAM	1	49	18.06	18.16	17.98			
20	16QAM	1	99	18.01	18.14	18.35	19.5	0	
20	16QAM	50	0	17.98	17.97	18.22			
20	16QAM	50	24	17.89	18.10	18.25			
20	16QAM	50	50	18.21	17.94	18.34	19.5	0	
20	16QAM	100	0	18.03	18.26	18.16			
20	64QAM	1	0	17.88	17.91	18.25			
20	64QAM	1	49	17.94	18.04	18.21	19.5	0	
20	64QAM	1	99	18.20	18.02	18.34			
20	64QAM	50	0	18.23	17.99	18.14			
20	64QAM	50	24	18.00	18.03	18.32	19.5	0	
20	64QAM	50	50	18.28	17.96	18.41			
20	64QAM	100	0	17.95	18.34	18.20			
Channel									
Frequency (MHz)									
15	QPSK	1	0	18.25	18.20	18.50	19.5	0	
15	QPSK	1	37	18.08	18.11	18.23			
15	QPSK	1	74	18.12	18.16	18.45			
15	QPSK	36	0	18.10	18.02	18.24	19.5	0	
15	QPSK	36	20	18.00	18.10	18.24			
15	QPSK	36	39	18.07	17.97	18.27			
15	QPSK	75	0	17.85	17.89	18.00	19.5	0	
15	16QAM	1	0	17.94	18.12	18.23			
15	16QAM	1	37	17.98	18.15	18.13			
15	16QAM	1	74	17.99	17.86	18.27	19.5	0	
15	16QAM	36	0	18.11	18.05	18.13			
15	16QAM	36	20	17.85	18.03	18.15			
15	16QAM	36	39	17.99	18.09	18.14	19.5	0	
15	16QAM	75	0	18.11	17.86	18.23			
15	64QAM	1	0	17.91	18.00	18.28			
15	64QAM	1	37	17.89	17.95	18.05	19.5	0	
15	64QAM	1	74	17.97	17.96	18.00			
15	64QAM	36	0	18.32	18.14	18.39			
15	64QAM	36	20	17.86	17.94	18.26	19.5	0	
15	64QAM	36	39	18.22	18.05	18.13			
15	64QAM	75	0	18.05	18.15	18.15			
Channel									
Frequency (MHz)									
10	QPSK	1	0	18.01	17.97	18.19	19.5	0	
10	QPSK	1	25	18.06	18.01	18.07			
10	QPSK	1	49	17.97	18.04	18.11			
10	QPSK	25	0	18.08	17.98	18.28	19.5	0	
10	QPSK	25	12	17.97	18.02	18.35			
10	QPSK	25	25	18.20	18.04	18.35			
10	QPSK	50	0	18.19	17.92	18.34	19.5	0	
10	16QAM	1	0	17.98	18.02	18.19			
10	16QAM	1	25	18.01	18.13	18.26			
10	16QAM	1	49	17.97	18.03	18.44	19.5	0	
10	16QAM	25	0	17.84	17.77	18.03			
10	16QAM	25	12	17.84	17.92	18.15			
10	16QAM	25	25	17.78	18.08	18.10	19.5	0	
10	16QAM	50	0	17.97	17.83	18.22			
10	64QAM	1	0	17.94	17.85	18.03			
10	64QAM	1	25	17.82	17.89	18.18	19.5	0	
10	64QAM	1	49	18.06	17.72	18.11			
10	64QAM	25	0	17.83	17.90	18.06			
10	64QAM	25	12	17.91	17.97	18.24	19.5	0	
10	64QAM	25	25	17.89	17.96	18.20			
10	64QAM	50	0	18.03	17.86	18.24			
Channel									
Frequency (MHz)									
5	QPSK	1	0	18.01	17.93	18.29	19.5	0	
5	QPSK	1	12	17.98	18.02	18.27			
5	QPSK	1	24	17.84	18.04	18.11			
5	QPSK	12	0	18.02	17.53	17.99	19.5	0	
5	QPSK	12	7	17.91	17.96	18.01			
5	QPSK	12	13	17.93	18.15	18.28			
5	QPSK	25	0	18.07	17.69	18.04	19.5	0	
5	16QAM	1	0	17.84	18.01	18.20			
5	16QAM	1	12	17.75	17.75	18.16			
5	16QAM	1	24	18.10	17.76	18.14	19.5	0	
5	16QAM	12	0	17.82	17.87	17.86			
5	16QAM	12	7	17.75	17.84	18.07			
5	16QAM	12	13	18.02	17.90	18.14	19.5	0	
5	16QAM	25	0	18.04	18.22	18.25			
5	64QAM	1	0	17.88	17.95	17.82			
5	64QAM	1	12	17.92	17.82	18.00	19.5	0	
5	64QAM	1	24	17.84	18.22	18.30			
5	64QAM	12	0	17.75	17.97	17.90			
5	64QAM	12	7	17.74	17.86	18.00	19.5	0	
5	64QAM	12	13	17.83	17.85	18.19			
5	64QAM	25	0	18.07	18.13	18.36			

Band 42 Ant2_DS4 Down									
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)									
20	QPSK	1	0	19.17	19.23	19.48	20.5	0	
20	QPSK	1	49	19.18	19.08	19.38			
20	QPSK	1	99	19.29	19.31	19.15			
20	QPSK	50	0	18.83	18.83	19.25	20.5	0	
20	QPSK	50	24	18.90	18.94	19.13			
20	QPSK	50	50	19.03	19.02	19.20			
20	QPSK	100	0	18.88	19.02	19.12	20.5	0	
20	16QAM	1	0	19.05	18.84	19.08			
20	16QAM	1	49	19.15	18.87	19.29			
20	16QAM	1	99	19.08	18.89	19.11	20.5	0	
20	16QAM	50	0	18.88	19.12	19.13			
20	16QAM	50	24	19.07	19.06	19.07			
20	16QAM	50	50	18.98	19.09	19.28	20.5	0	
20	16QAM	100	0	19.20	18.97	19.22			
20	64QAM	1	0	18.95	18.97	19.24			
20	64QAM	1	49	18.99	19.13	19.25	20.5	0	
20	64QAM	1	99	19.15	18.83	19.15			
20	64QAM	50	0	18.86	18.93	19.14			
20	64QAM	50	24	19.02	19.10	19.26	20.5	0	
20	64QAM	50	50	18.94	18.91	19.26			
20	64QAM	100	0	19.02	19.02	19.12			
Channel									
Frequency (MHz)									
15	QPSK	1	0	42.165	42.990	43.015	20.5	0	
15	QPSK	1	0	34.65	35.00	35.425			
15	QPSK	1	37	19.16	19.09	19.45			
15	QPSK	1	74	19.10	19.04	19.26	20.5	0	
15	QPSK	1	111	19.05	19.16	19.09			
15	QPSK	36	0	18.56	18.69	18.99			
15	QPSK	36	20	18.77	18.82	18.91	20.5	0	
15	QPSK	36	39	18.85	18.63	19.02			
15	QPSK	75	0	18.91	18.97	19.04			
15	16QAM	1	0	18.80	18.89	18.91	20.5	0	
15	16QAM	1	37	19.01	18.84	19.20			
15	16QAM	1	74	19.02	18.79	19.02			
15	16QAM	36	0	18.63	19.08	18.95	20.5	0	
15	16QAM	36	20	18.88	18.82	18.83			
15	16QAM	36	39	18.82	19.02	19.11			
15	16QAM	75	0	19.01	18.77	19.01	20.5	0	
15	64QAM	1	0	18.80	18.77	19.09			
15	64QAM	1	37	18.95	18.90	19.18			
15	64QAM	1	74	19.09	18.85	19.39	20.5	0	
15	64QAM	36	0	18.76	18.89	19.03			
15	64QAM	36	20	18.91	18.94	19.00			
15	64QAM	36	39	18.89	18.88	19.14	20.5	0	
15	64QAM	75	0	18.83	18.85	18.85			
Channel									
Frequency (MHz)									
10	QPSK	1	0	19.18	19.18	19.39	20.5	0	
10	QPSK	1	24	19.02	19.11	19.18			
10	QPSK	1	49	19.03	19.08	19.07			
10	QPSK	25	0	18.91	18.62	18.99	20.5	0	
10	QPSK	25	12	18.89	18.94	18.96			
10	QPSK	25	25	18.83	18.75	19.08			
10	QPSK	50	0	18.89	18.89	18.94	20.5	0	
10	16QAM	1	0	18.83	18.94	18.94			
10	16QAM	1	25	18.88	18.93	19.14			
10	16QAM	1	49	18.93	18.85	18.90	20.5	0	
10	16QAM	25	0	18.70	18.93	19.18			
10	16QAM	25	12	18.90	18.90	18.80			
10	16QAM	25	25	18.82	19.05	19.11	20.5	0	
10	16QAM	50	0	18.80	18.71	19.01			
10	64QAM	1	0	18.87	18.78	19.13			
10	64QAM	1	25	19.00	19.02	19.16	20.5	0	
10	64QAM	1	49	18.98	18.81	18.90			
10	64QAM	25	0	18.64	18.81	19.08			
10	64QAM	25	12	18.81	18.89	18.90	20.5	0	
10	64QAM	25	25	18.93	18.85	19.03			
10	64QAM	50	0	18.71	19.03	18.86			
Channel									
Frequency (MHz)									
5	QPSK	0	0	34.625	35.000	35.425	20.5	0	
5	QPSK	1	12	18.98	19.19	19.18			
5	QPSK	1	24	19.03	19.00	19.19			
5	QPSK	12	0	18.91	18.80	18.87	20.5	0	
5	QPSK	12	7	18.86	18.96	19.05			
5	QPSK	12	13	18.87	18.94	19.15			
5	QPSK	25	0	19.02	19.78	19.95	20.5	0	
5	16QAM	1	0	18.75	18.67	19.06			
5	16QAM	1	12	19.06	18.82	19.04			
5	16QAM	1	24	18.91	18.87	18.95	20.5	0	
5	16QAM	12	0	18.89	19.27	18.94			
5	16QAM	12	7	18.95	18.96	18.90			
5	16QAM	12	13	18.86	18.11	19.17	20.5	0	
5	16QAM	25	0	18.89	18.63	19.00			
5	64QAM	1	64QAM	18.80	18.79	19.17			
5	64QAM	1	12	18.98	19.06	19.11	20.5	0	
5	64QAM	1	24	18.88	18.89	18.86			
5	64QAM	12	0	18.73	18.75	19.13			
5	64QAM	12	7	18.82	18.94	19.03	20.5	0	
5	64QAM	12	13	19.02	19.02	19.07			
5	64QAM	25	0	18.67	18.94	18.76			

Uplink CA Power

Ant2		Default power								Tune up Power (dBm)	
CA_42C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)	
			RB Size	RB offset	RB Size	RB offset					
42190	42388	QPSK	1	99	1	0	1	0	24.37	25.5	
42590	42788	QPSK	1	0	1	99	2	0	23.87	25.5	
42590	42792	QPSK	1	0	1	99	2	0	24.79	25.5	
42190	42388	QPSK	1	49	50	0	1	0	23.34	24.5	
42590	42788	QPSK	50	0	1	49	2	0	23.01	24.5	
42590	42792	QPSK	50	0	1	49	2	0	23.75	24.5	

Ant2		DSI1								Tune up Power (dBm)	
CA_42C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)	
			RB Size	RB offset	RB Size	RB offset					
42190	42388	QPSK	1	99	1	0	1	0	18.32	19.5	
42590	42788	QPSK	1	0	1	99	2	0	18.31	19.5	
42590	42792	QPSK	1	0	1	99	2	0	18.42	19.5	
42190	42388	QPSK	1	49	50	0	1	0	17.99	19.5	
42590	42788	QPSK	50	0	1	49	2	0	18.01	19.5	
42590	42792	QPSK	50	0	1	49	2	0	18.25	19.5	

Ant3		DS11&2&Default power								Tune up Power (dBm)	
CA 42C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)	
			RB Size	RB offset	RB Size	RB offset					
42190	42388	QPSK	1	99	1	0	1	0	23.78	25	
42590	42788	QPSK	1	0	1	99	2	0	23.65	25	
42590	42792	QPSK	1	0	1	99	2	0	24.69	25	

Ant5		DS11&2&Default power								Tune up Power (dBm)	
CA_42C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)	
			RB Size	RB offset	RB Size	RB offset					
42190	42388	QPSK	1	99	1	0	1	0	23.18	25	
42590	42788	QPSK	1	0	1	99	2	0	23.24	25	
42590	42792	QPSK	1	0	1	99	2	0	24.07	25	
42190	42388	QPSK	1	49	50	0	1	0	22.38	24	
42590	42788	QPSK	50	0	1	49	2	0	22.43	24	
42590	42792	QPSK	50	0	1	49	2	0	22.89	24	

Ant6		DSI1&2&Default power								Tune up Power (dBm)	
CA_42C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)	
			RB Size	RB offset	RB Size	RB offset					
42190	42388	QPSK	1	99	1	0	1	0	22.34	24	
42590	42788	QPSK	1	0	1	99	2	0	22.7	24	
42590	42792	QPSK	1	0	1	99	2	0	23.72	24	
42190	42388	QPSK	1	49	50	0	1	0	21.28	23	
42590	42788	QPSK	50	0	1	49	2	0	21.72	23	
42590	42792	QPSK	50	0	1	49	2	0	22.81	23	



Ant2 DSI4

Tune up Power (dBm)

CA_42C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
42190	42388	QPSK	1	99	1	0	1	0	17.03	20.5
42590	42788	QPSK	1	0	1	99	2	0	19.13	20.5
42990	42792	QPSK	1	0	1	99	2	0	19.32	20.5

Ant2 DSI2

Tune up Power (dBm)

CA_42C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
42190	42388	QPSK	1	99	1	0	1	0	22.08	23.5
42590	42788	QPSK	1	0	1	99	2	0	22.15	23.5
42990	42792	QPSK	1	0	1	99	2	0	22.45	23.5
42190	42388	QPSK	1	49	50	0	1	0	22.04	23.5
42590	42788	QPSK	50	0	1	49	2	0	22.01	23.5
42990	42792	QPSK	50	0	1	49	2	0	22.07	23.5



Downlink CA Power

CA List	PCC								SCC				Power	
	LTE	Ant	BW	UL	UL	Mod.	UL#	UL	LTE	BW	DL	DL	With CA	Without CA
	Band		(MHz)	Freq.	Channel		RB	RB	Band	(MHz)	Freq.	Channel	Tx. Power	Tx. Power
				(MHz)				Offset			(MHz)		(dBm)	(dBm)
CA_42C	Band 42	Ant 2	20M	3540	42990	QPSK	1	0	Band 42	20M	3520.2	42792	24.71	24.83
	Band 42	Ant 3	20M	3540	42990	QPSK	1	0	Band 42	20M	3520.2	42792	24.63	24.74
	Band 42	Ant 5	20M	3540	42990	QPSK	1	0	Band 42	20M	3520.2	42792	24.03	24.14
	Band 42	Ant 6	20M	3540	42990	QPSK	1	0	Band 42	20M	3520.2	42792	23.77	23.83

WLAN/Bluetooth Power

Receiver Off						Receiver on		
2.4GHz WLAN						Art 7		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
2.4GHz WLAN	802.11b 1Mbps	1	2412	17.50	18.50	18.50	17.50	100.00
		6	2437	17.30	18.50	18.25	17.50	
		11	2462	17.40	18.50	18.42	17.50	
	802.11g 6Mbps	1	2412	16.10	17.00		17.00	98.28
		6	2437	15.90	17.00		17.00	
		11	2462	16.00	17.00		17.00	
	802.11n-HT20 MCS0	1	2412	14.70	15.50	Not Required	15.50	98.16
		6	2437	14.50	15.50		15.50	
		11	2462	14.60	15.50		15.50	
	802.11n-HT40 MCS0	3	2422	11.60	12.50		12.50	94.93
		6	2437	11.40	12.50		12.50	
		9	2452	11.70	12.50		12.50	

Receiver Off						Art 7		
5.2GHz WLAN						Art 7		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %			
5.2GHz WLAN	802.11a 6Mbps	36	5180	13.77	15.00		98.28	
		44	5220	15.06	16.00			
		48	5240	15.36	15.50			
	802.11n-HT20 MCS0	36	5180	14.09	15.00		98.16	
		44	5220	15.19	16.00			
		48	5240	15.09	16.00			
	802.11n-HT40 MCS0	38	5190	14.89	16.00		96.32	
		46	5230	15.02	16.00			
		35	5180	14.05	15.00			
	802.11ac-VHT20 MCS0	44	5220	15.09	16.00		98.16	
		46	5240	14.99	16.00			
		38	5190	14.75	16.00			
	802.11ac-VHT40 MCS0	46	5230	14.94	16.00		96.32	
	802.11ac-VHT80 MCS0	42	5210	14.00	15.00		92.77	

Receiver Off						Art 7		
5.3GHz WLAN						Art 7		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %			
5.3GHz WLAN	802.11a 6Mbps	52	5260	15.01	16.00		98.28	
		60	5300	13.86	15.00			
		64	5320	13.56	14.50			
	802.11n-HT20 MCS0	52	5260	15.35	16.00		98.16	
		60	5300	15.02	16.00			
		64	5320	13.98	15.00			
	802.11n-HT40 MCS0	54	5270	15.25	16.50		96.32	
		62	5310	14.70	16.00			
		52	5260	15.25	16.00			
	802.11ac-VHT20 MCS0	60	5300	14.92	16.00		98.16	
		64	5320	13.96	15.00			
		54	5270	15.17	16.00			
	802.11ac-VHT40 MCS0	62	5310	14.68	16.00		96.32	
	802.11ac-VHT80 MCS0	58	5290	14.02	15.00		92.77	

Receiver Off						Receiver on		
5.5GHz WLAN						Art 7		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.06	16.00		15.00	98.28
		116	5580	14.80	16.00		15.00	
		140	5700	15.36	16.00		15.00	
		144	5720	15.16	16.00		15.00	
	802.11n-HT20 MCS0	100	5500	15.10	16.00		15.00	98.16
		116	5580	15.03	16.00		15.00	
		140	5700	15.12	16.00		15.00	
		144	5720	15.06	16.00		15.00	
	802.11n-HT40 MCS0	102	5510	15.13	16.00		15.00	96.32
		110	5550	15.14	16.00		15.00	
		134	5670	15.17	16.00		15.00	
		142	5710	15.14	16.00		15.00	
	802.11ac-VHT20 MCS0	100	5500	15.00	16.00		15.00	98.16
		116	5580	14.96	16.00		15.00	
		140	5700	15.02	16.00		15.00	
		144	5720	15.06	16.00		15.00	
	802.11ac-VHT40 MCS0	102	5510	15.05	16.00		15.00	96.32
		110	5550	15.06	16.00		15.00	
		134	5670	15.09	16.00		15.00	
		142	5710	15.06	16.00		15.00	
	802.11ac-VHT80 MCS0	106	5530	14.15	15.00	14.15	15.00	92.77
		122	5610	13.99	15.00	13.99	15.00	
		138	5690	14.03	15.00	14.03	15.00	
							15.00	

Receiver Off						Art 7		
5.8GHz WLAN						Art 7		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %			
5.8GHz WLAN	802.11a 6Mbps	149	5745	14.23	15.00		98.28	
		157	5785	13.77	15.00			
		165	5825	14.19	15.00			
	802.11n-HT20 MCS0	149	5745	13.99	15.00		98.16	
		157	5785	14.01	15.00			
		165	5825	14.00	15.00			
	802.11n-HT40 MCS0	151	5755	14.05	15.00		96.31	
		159	5795	14.06	15.00			
		149	5745	13.95	15.00			
	802.11ac-VHT20 MCS0	157	5785	14.00	15.00		97.79	
		165	5825	13.98	15.00			
		151	5755	14.01	15.00			
	802.11ac-VHT40 MCS0	159	5795	14.03	15.00		96.32	
	802.11ac-VHT80 MCS0	155	5775	13.16	14.50		92.79	

BT BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	Ch 00	2402	8.72	8.27	8.53
	Ch 39	2441	8.99	8.62	8.58
	Ch 76	2480	8.94	8.69	8.50
	Tune-up Limit		10.5	10.5	10.5

BT LE

Mode	Channel	Frequency (MHz)	Average power (dBm)		Tune-up Limit
			GB/G		
LE	Ch 00	2402	4.91		6.00
	Ch 19	2440	6.19		7.00
	Ch 39	2480	6.48		7.50

BT LE v5.0

Mode	Channel	Frequency (MHz)	Average power (dBm)		Tune-up Limit
LE	Ch 00	2402	5.12		6.00
	Ch 19	2440	6.23		7.00
	Ch 39	2480	6.68		7.50