

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	15972	16183
Channel Y	15900	16376
Channel Z	16167	15841

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	1.19	0.18	2.38	0.46
Channel Y	0.15	-1.39	1.24	0.47
Channel Z	0.36	-1.22	1.42	0.42

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

IMPORTANT NOTICE



USAGE OF THE DAE4

The DAE unit is a delicate, high precision instrument and requires careful treatment by the user. There are no serviceable parts inside the DAE. Special attention shall be given to the following points:

Battery Exchange: The battery cover of the DAE4 unit is fixed using a screw, over tightening the screw may cause the threads inside the DAE to wear out.

Shipping of the DAE: Before shipping the DAE to SPEAG for calibration, remove the batteries and pack the DAE in an antistatic bag. This antistatic bag shall then be packed into a larger box or container which protects the DAE from impacts during transportation. The package shall be marked to indicate that a fragile instrument is inside.

E-Stop Failures: Touch detection may be malfunctioning due to broken magnets in the E-stop. Rough handling of the E-stop may lead to damage of these magnets. Touch and collision errors are often caused by dust and dirt accumulated in the E-stop. To prevent E-stop failure, the customer shall always mount the probe to the DAE carefully and keep the DAE unit in a non-dusty environment if not used for measurements.

Repair: Minor repairs are performed at no extra cost during the annual calibration. However, SPEAG reserves the right to charge for any repair especially if rough unprofessional handling caused the defect.

DASY Configuration Files: Since the exact values of the DAE input resistances, as measured during the calibration procedure of a DAE unit, are not used by the DASY software, a nominal value of 200 MOhm is given in the corresponding configuration file.

Important Note:

Warranty and calibration is void if the DAE unit is disassembled partly or fully by the Customer.

Important Note:

Never attempt to grease or oil the E-stop assembly. Cleaning and readjusting of the E-stop assembly is allowed by certified SPEAG personnel only and is part of the annual calibration procedure.

Important Note:

To prevent damage of the DAE probe connector pins, use great care when installing the probe to the DAE. Carefully connect the probe with the connector notch oriented in the mating position. Avoid any rotational movement of the probe body versus the DAE while turning the locking nut of the connector. The same care shall be used when disconnecting the probe from the DAE.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **Tejet (Auden)**

Certificate No: DAE4-1226_May20

CALIBRATION CERTIFICATE

Object: DAE4 - SD 000 D04 BM - SN: 1226

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

Calibration date: May 15, 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
Keithley Multimeter Type 2001	SN: 0810278	03-Sep-19 (No:25949)	Sep-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	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: Eric Hainfeld Function: Laboratory Technician Signature:

Approved by: Sven Kühn Deputy Manager

Issued: May 15, 2020

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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	404.644 $\pm$ 0.02% (k=2)	404.410 $\pm$ 0.02% (k=2)	404.128 $\pm$ 0.02% (k=2)
Low Range	3.98010 $\pm$ 1.50% (k=2)	4.00441 $\pm$ 1.50% (k=2)	3.98517 $\pm$ 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	283.5 ° $\pm$ 1 °
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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	200036.25	2.48	0.00
Channel X + Input	20007.54	2.38	0.01
Channel X - Input	-20005.86	0.51	-0.00
Channel Y + Input	200033.61	-0.21	-0.00
Channel Y + Input	20003.31	-1.72	-0.01
Channel Y - Input	-20007.95	-1.52	0.01
Channel Z + Input	200035.07	1.43	0.00
Channel Z + Input	20004.81	-0.10	-0.00
Channel Z - Input	-20007.44	-1.01	0.01

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2000.93	0.16	0.01
Channel X + Input	200.14	-0.66	-0.33
Channel X - Input	-199.83	-0.71	0.36
Channel Y + Input	2000.72	0.15	0.01
Channel Y + Input	199.44	-1.19	-0.59
Channel Y - Input	-200.55	-1.29	0.65
Channel Z + Input	2000.71	0.18	0.01
Channel Z + Input	200.02	-0.61	-0.31
Channel Z - Input	-199.97	-0.66	0.33

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	5.07	2.90
	- 200	-2.74	-4.97
Channel Y	200	-8.89	-9.14
	- 200	7.09	6.94
Channel Z	200	-7.29	-7.53
	- 200	5.53	5.89

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	-	2.16	-3.66
Channel Y	200	8.16	-	3.69
Channel Z	200	9.32	5.65	-

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	16032	12468
Channel Y	15897	17438
Channel Z	16001	15611

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	-0.38	-1.14	0.42	0.38
Channel Y	-0.09	-1.14	0.85	0.39
Channel Z	-0.31	-1.86	1.00	0.41

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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Client **Sporton**

Certificate No: **EX3-3819_Apr20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3819**

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

Calibration date: **April 30, 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: 104775	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-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41496087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
			Issued: April 30, 2020
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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., $\theta \approx 0$ 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 $\theta = 0$ ($f \leq 900$ 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 E^2 -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:3819

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.46	0.41	0.46	± 10.1 %
DCP (mV) ^B	104.6	101.5	102.0	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB/ μV	C	D dB	VR mV	Max dev.	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	156.7	± 3.5 %	± 4.7 %
		Y	0.0	0.0	1.0		148.5		
		Z	0.0	0.0	1.0		139.2		

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:3819

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	113.9
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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3819

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	9.64	9.64	9.64	0.52	0.80	± 12.0 %
835	41.5	0.90	9.39	9.39	9.39	0.50	0.80	± 12.0 %
900	41.5	0.97	9.26	9.26	9.26	0.39	0.96	± 12.0 %
1750	40.1	1.37	8.43	8.43	8.43	0.34	0.80	± 12.0 %
1900	40.0	1.40	8.10	8.10	8.10	0.37	0.80	± 12.0 %
2000	40.0	1.40	7.95	7.95	7.95	0.30	0.88	± 12.0 %
2300	39.5	1.67	7.66	7.66	7.66	0.32	0.90	± 12.0 %
2450	39.2	1.80	7.42	7.42	7.42	0.38	0.90	± 12.0 %
2600	39.0	1.96	7.22	7.22	7.22	0.38	0.90	± 12.0 %
3300	38.2	2.71	6.91	6.91	6.91	0.20	1.20	± 14.0 %
3500	37.9	2.91	6.84	6.84	6.84	0.25	1.20	± 14.0 %
3700	37.7	3.12	6.75	6.75	6.75	0.25	1.25	± 14.0 %
3900	37.5	3.32	6.40	6.40	6.40	0.30	1.60	± 14.0 %
4100	37.2	3.53	6.39	6.39	6.39	0.30	1.60	± 14.0 %
4400	36.9	3.84	6.07	6.07	6.07	0.30	1.60	± 14.0 %
4600	36.7	4.04	5.98	5.98	5.98	0.30	1.70	± 14.0 %
4800	36.4	4.25	5.88	5.88	5.88	0.45	1.80	± 14.0 %
4950	36.3	4.40	5.72	5.72	5.72	0.45	1.80	± 14.0 %
5250	35.9	4.71	5.02	5.02	5.02	0.40	1.80	± 14.0 %
5600	35.5	5.07	4.56	4.56	4.56	0.40	1.80	± 14.0 %
5750	35.4	5.22	4.63	4.63	4.63	0.40	1.80	± 14.0 %

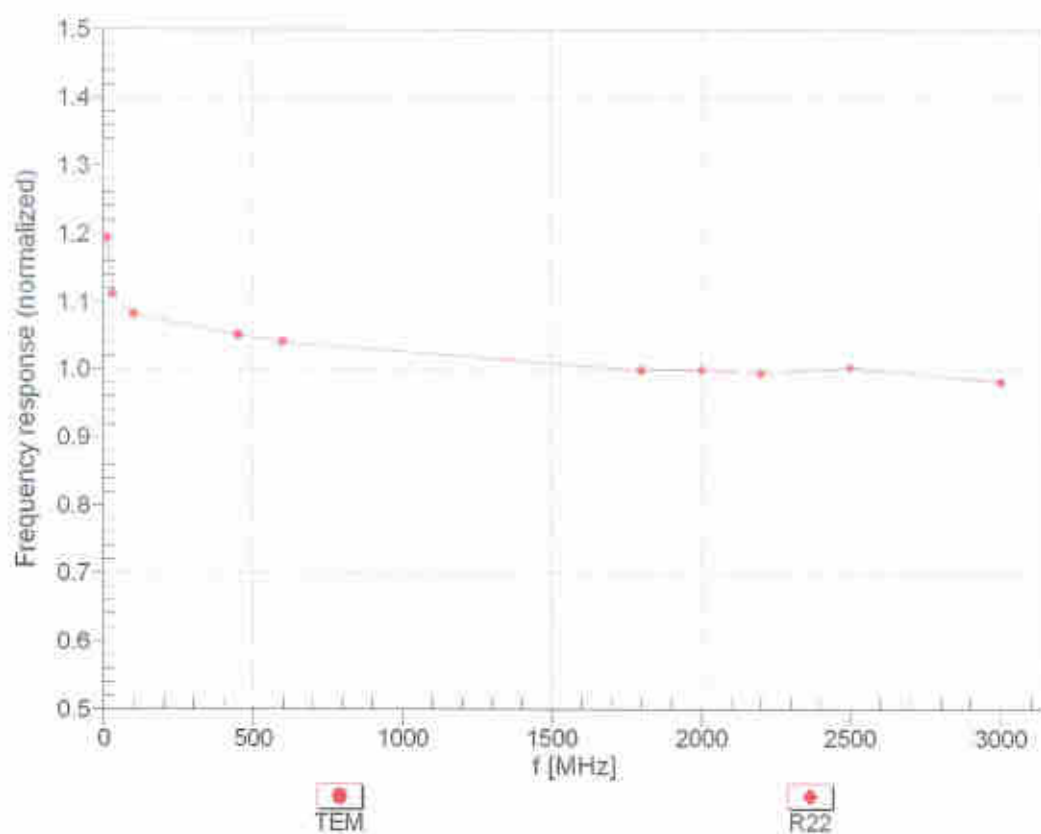
^c Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is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



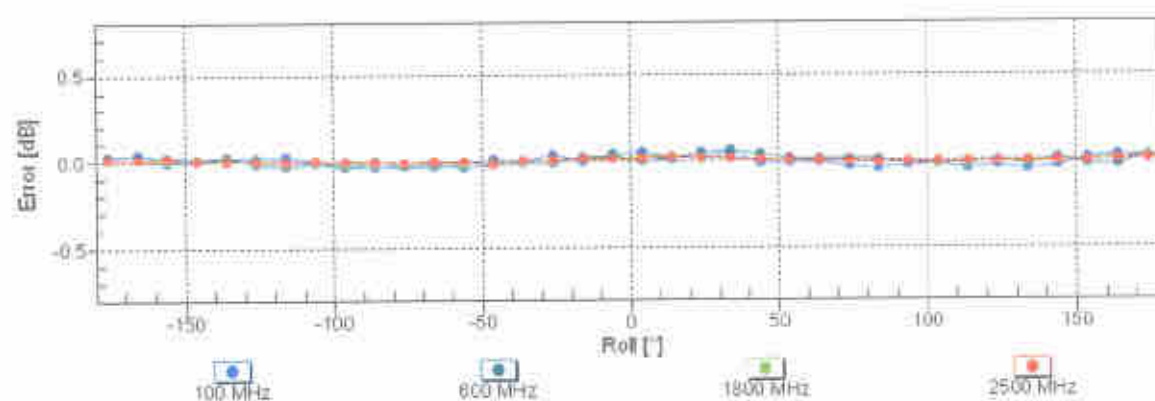
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

f=600 MHz,TEM

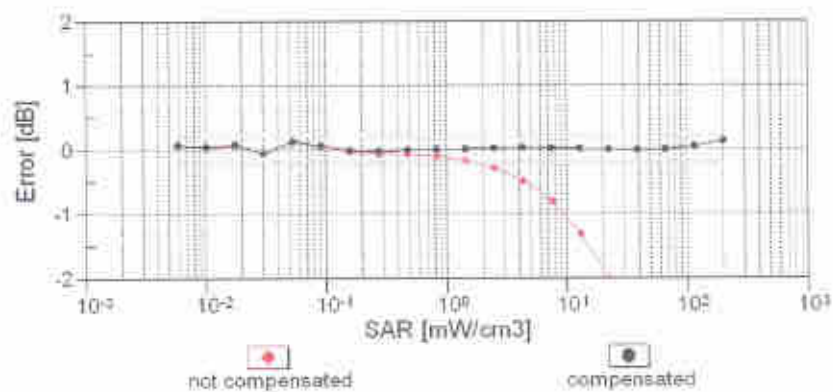
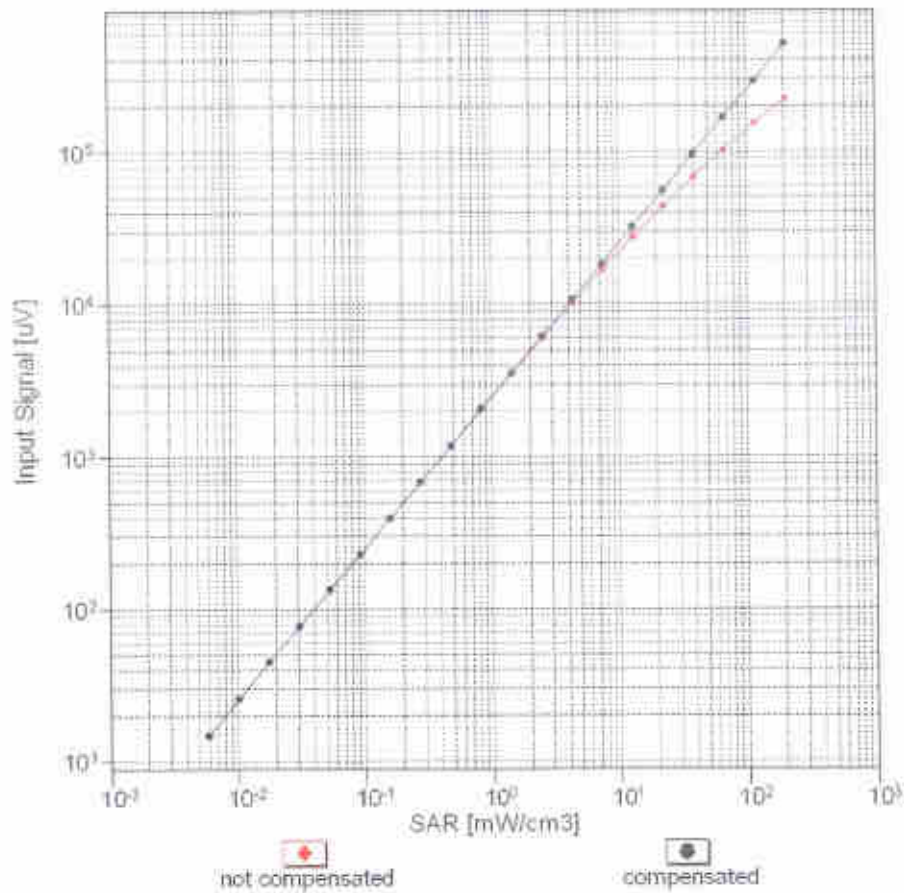


f=1800 MHz,R22



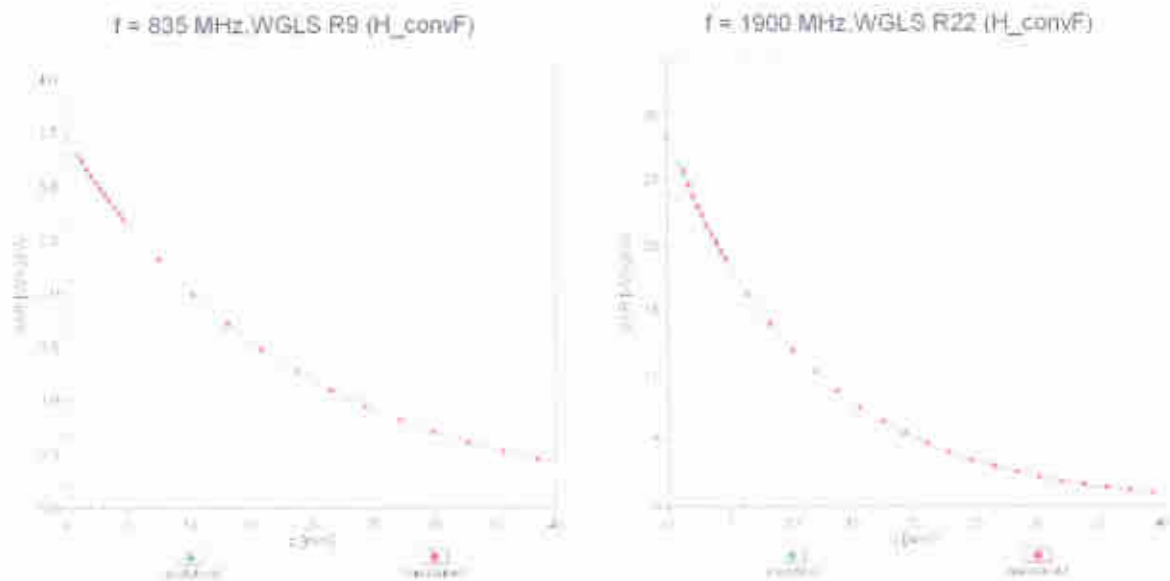
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



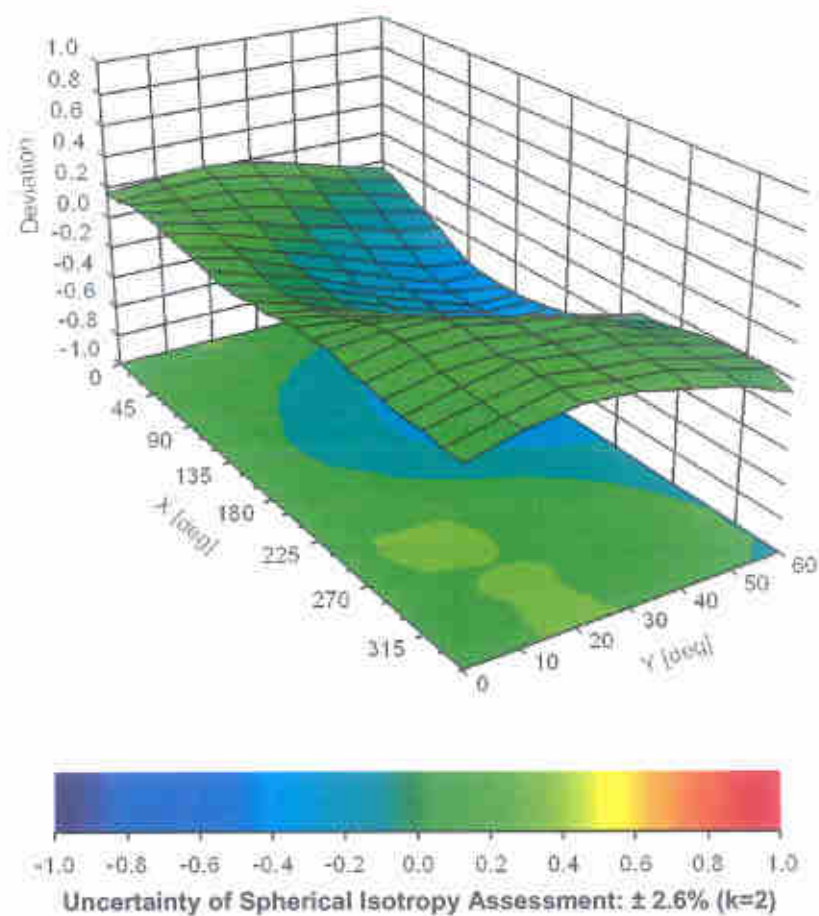
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





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Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **EX3-7576_Jan20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:7576**

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

Calibration date: **January 22, 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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	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-16)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

Calibrated by:	Name Jeton Kasrati	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature
			Issued: January 25, 2020
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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., $\theta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\theta = 0$ ($f \leq 900$ 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 E^2 -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:7576

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.48	0.63	0.63	$\pm 10.1 \%$
DCP (mV) ^B	103.8	99.8	103.6	

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 (k=2) ^E
0	CW	X	0.0	0.0	1.0	0.00	164.4	$\pm 2.7 \%$	$\pm 4.7 \%$
		Y	0.0	0.0	1.0		161.8		
		Z	0.0	0.0	1.0		164.7		

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

^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:7576**Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	112.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7576

Calibration Parameter Determined in Head Tissue Simulating Media

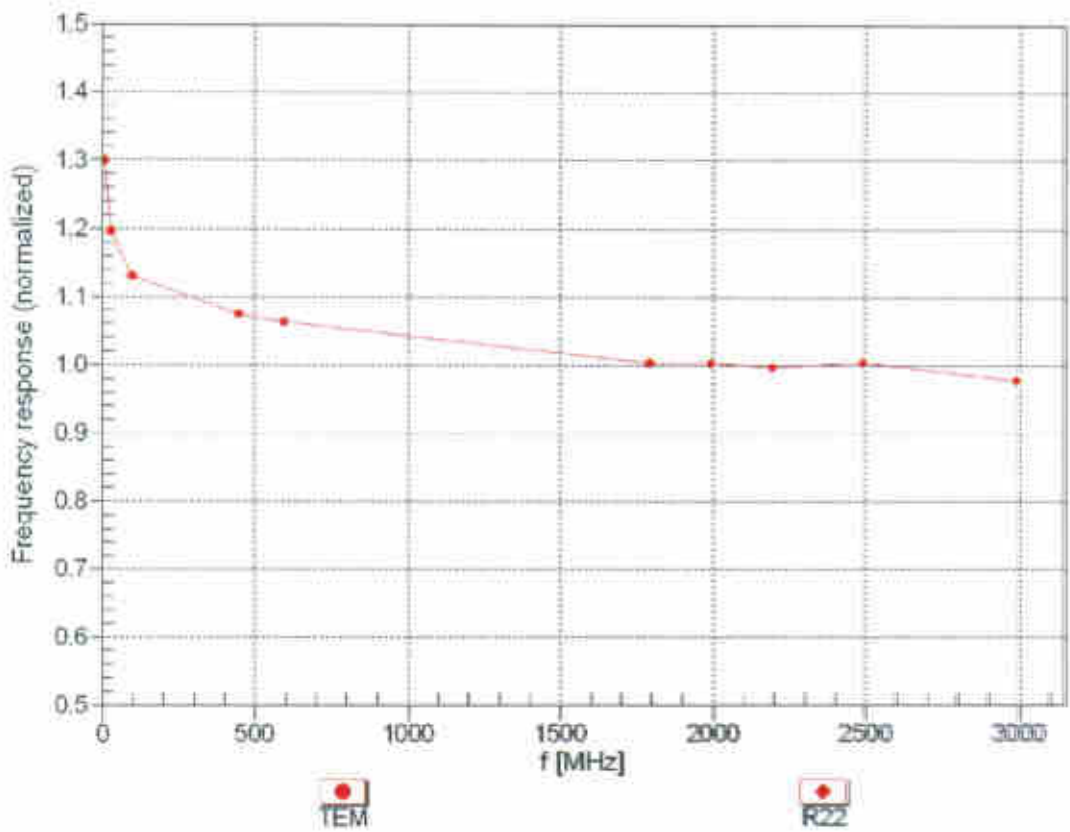
f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^o	Depth (mm) ^o	Unc (k=2)
750	41.9	0.89	10.71	10.71	10.71	0.62	0.80	± 12.0 %
835	41.5	0.90	10.45	10.45	10.45	0.46	0.94	± 12.0 %
900	41.5	0.97	10.16	10.16	10.16	0.33	1.09	± 12.0 %
1750	40.1	1.37	8.88	8.88	8.88	0.42	0.86	± 12.0 %
1900	40.0	1.40	8.58	8.58	8.58	0.38	0.86	± 12.0 %
2000	40.0	1.40	8.48	8.48	8.48	0.39	0.86	± 12.0 %
2300	39.5	1.67	8.03	8.03	8.03	0.41	0.90	± 12.0 %
2450	39.2	1.80	7.76	7.76	7.76	0.44	0.90	± 12.0 %
2600	39.0	1.96	7.47	7.47	7.47	0.41	0.96	± 12.0 %
3300	38.2	2.71	7.08	7.08	7.08	0.30	1.35	± 14.0 %
3500	37.9	2.91	6.77	6.77	6.77	0.30	1.35	± 14.0 %
3700	37.7	3.12	6.74	6.74	6.74	0.30	1.35	± 14.0 %
3900	37.5	3.32	6.56	6.56	6.56	0.40	1.40	± 14.0 %
4100	37.2	3.53	6.26	6.26	6.26	0.40	1.40	± 14.0 %
4400	36.9	3.84	6.19	6.19	6.19	0.40	1.60	± 14.0 %
4600	36.7	4.04	6.06	6.06	6.06	0.40	1.60	± 14.0 %
4800	36.4	4.25	5.89	5.89	5.89	0.40	1.80	± 14.0 %
4950	36.3	4.40	5.59	5.59	5.59	0.40	1.80	± 14.0 %
5250	35.9	4.71	5.20	5.20	5.20	0.40	1.80	± 14.0 %
5600	35.5	5.07	4.62	4.62	4.62	0.40	1.80	± 14.0 %
5750	35.4	5.22	4.83	4.83	4.83	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.

^o 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.

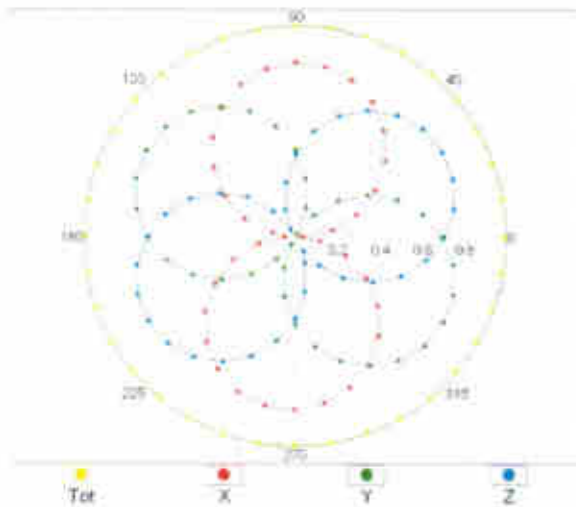
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



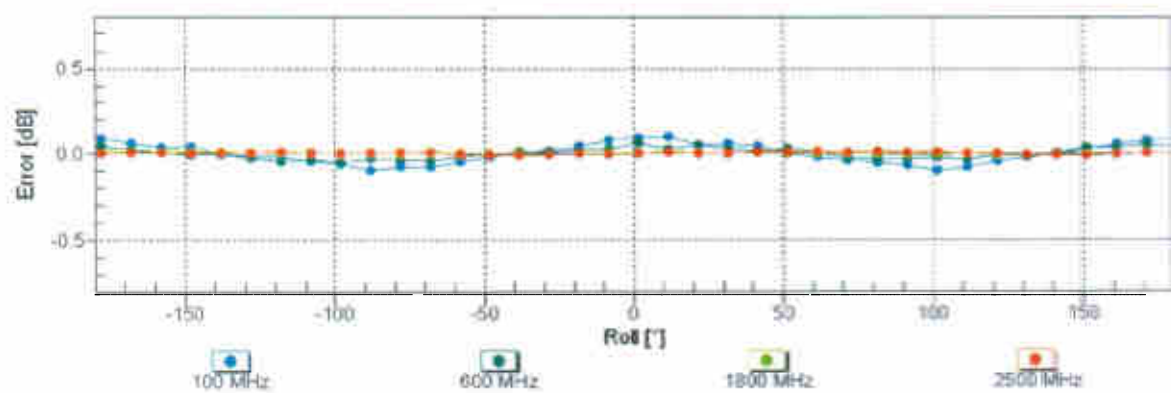
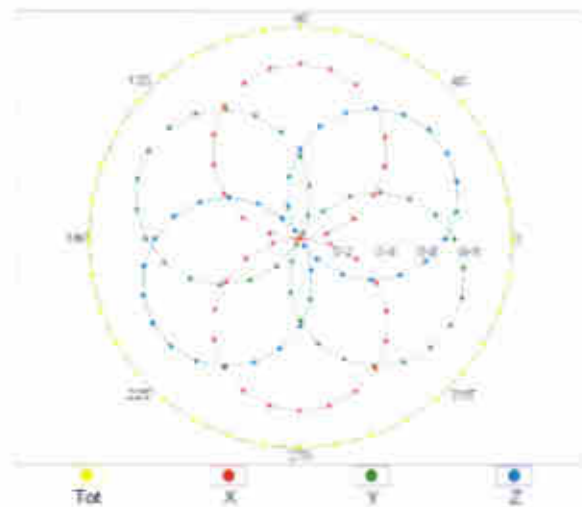
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

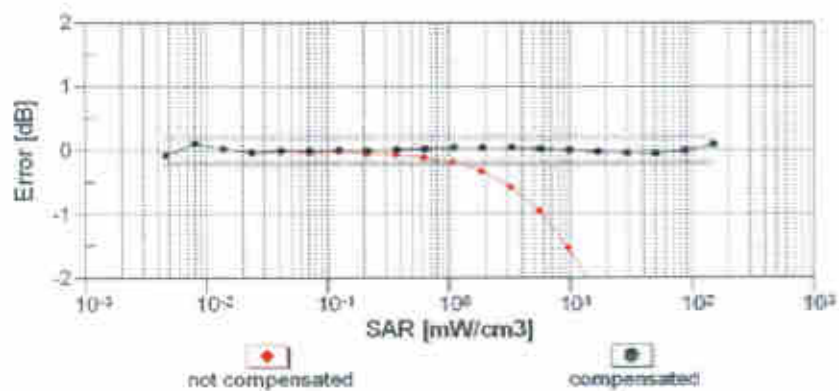
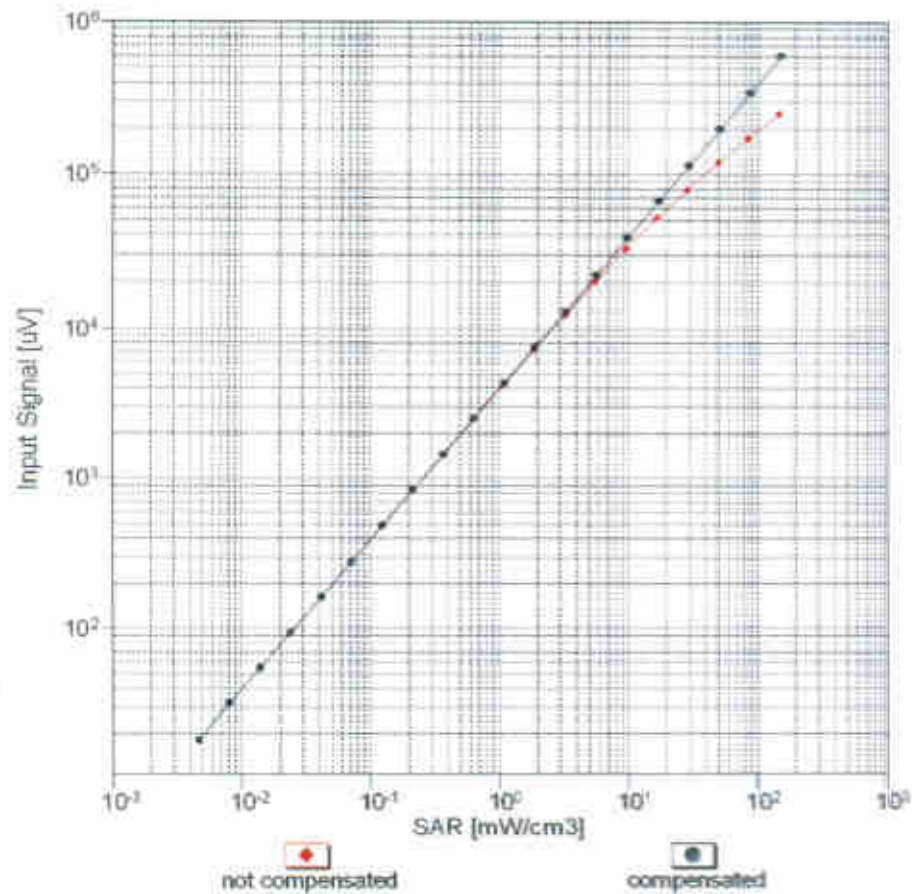
f=600 MHz,TEM



f=1800 MHz,R22

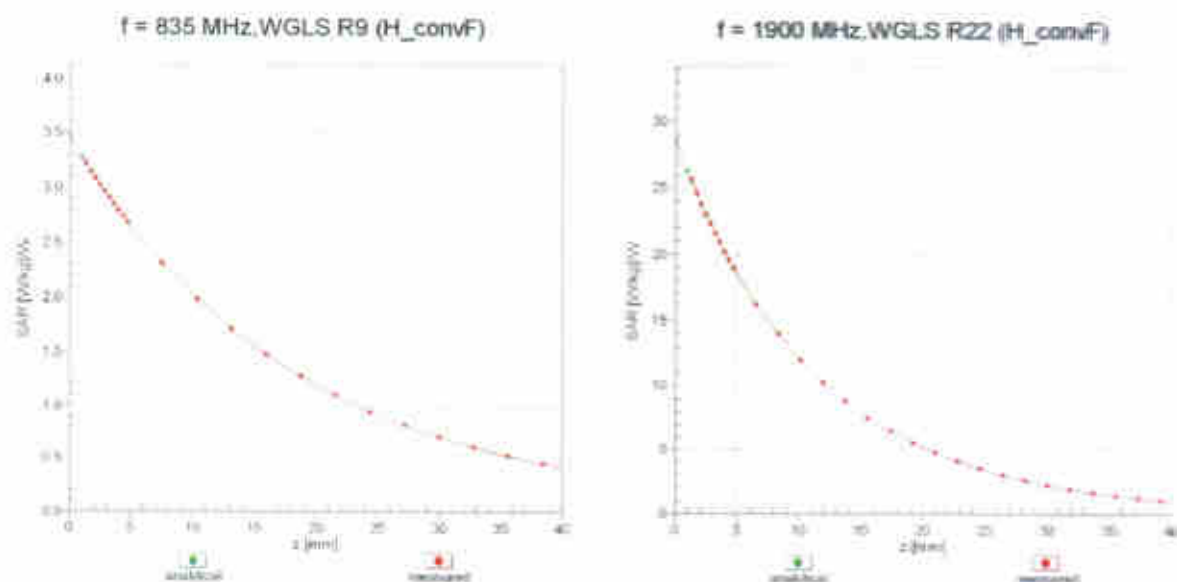
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



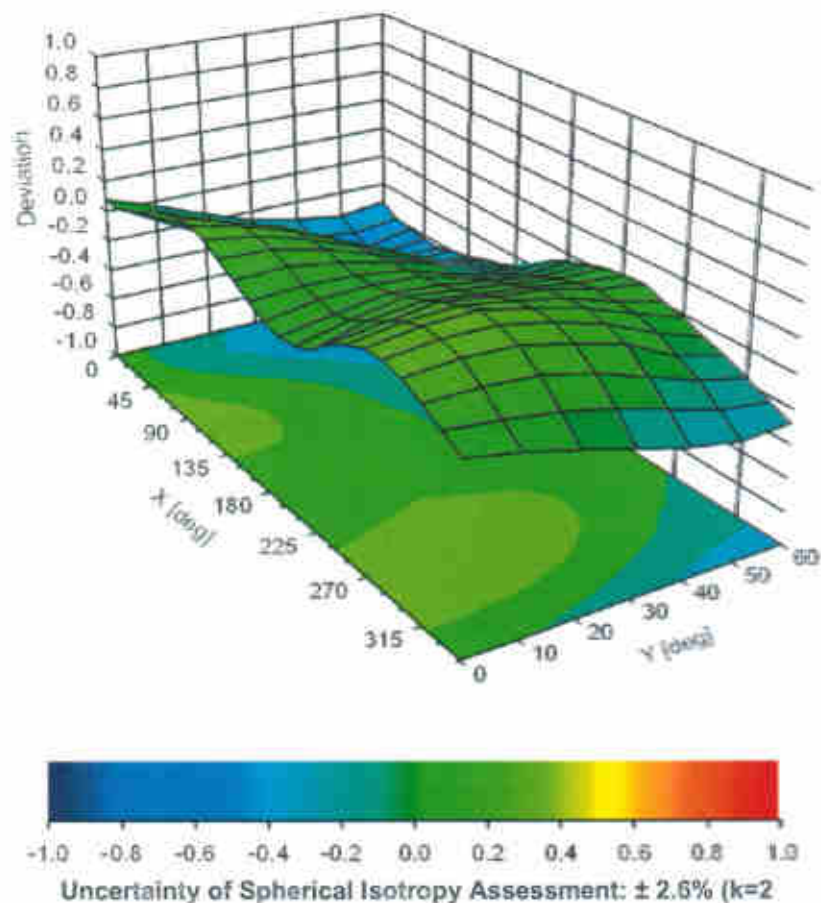
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



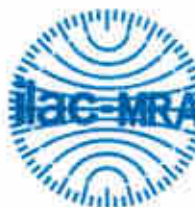
Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





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Client

Auden

Certificate No: **Z20-60166**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN : 3826**

Calibration Procedure(s) **FF-Z11-004-01**
Calibration Procedures for Dosimetric E-field Probes

Calibration date: **May 20, 2020**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	18-Jun-19(CTTL, No.J19X05125)	Jun-20
Power sensor NRP-Z91	101547	18-Jun-19(CTTL, No.J19X05125)	Jun-20
Power sensor NRP-Z91	101548	18-Jun-19(CTTL, No.J19X05125)	Jun-20
Reference 10dBAttenuator	18N50W-10dB	10-Feb-20(CTTL, No.J20X00525)	Feb-22
Reference 20dBAttenuator	18N50W-20dB	10-Feb-20(CTTL, No.J20X00526)	Feb-22
Reference Probe EX3DV4	SN 3617	30-Jan-20(SPEAG, No.EX3-3617_Jan20/2)	Jan-21
DAE4	SN 1556	4-Feb-20(SPEAG, No.DAE4-1556_Feb20)	Feb-21

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

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

Issued: May 22, 2020

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



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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 $\theta=0$ is normal to probe axis

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}: Assessed for E-field polarization $\theta=0$ ($f \leq 900\text{MHz}$ in TEM-cell; $f > 1800\text{MHz}$: waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E^2 -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 (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}; VR_{x,y,z}; A,B,C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800\text{MHz}$) and inside waveguide using analytical field distributions based on power measurements for $f > 800\text{MHz}$. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{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 $\pm 50\text{MHz}$ to $\pm 100\text{MHz}$.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).



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[Http://www.chinattl.cn](http://www.chinattl.cn)**DASY/EASY – Parameters of Probe: EX3DV4 – SN:3826****Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc ($k=2$)
Norm($\mu V/(V/m)^2$) ^A	0.48	0.41	0.36	$\pm 10.0\%$
DCP(mV) ^B	100.2	99.8	103.2	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB/ μV	C	D dB	VR mV	Unc ^E ($k=2$)
0	CW	X	0.0	0.0	1.0	0.00	160.2	$\pm 2.7\%$
		Y	0.0	0.0	1.0		141.6	
		Z	0.0	0.0	1.0		130.8	

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 4).

^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.



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DASY/EASY – Parameters of Probe: EX3DV4 – SN:3826

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)	Unct. (k=2)
750	41.9	0.89	9.37	9.37	9.37	0.40	0.80	±12.1%
835	41.5	0.90	9.12	9.12	9.12	0.17	1.26	±12.1%
900	41.5	0.97	9.10	9.10	9.10	0.18	1.30	±12.1%
1750	40.1	1.37	7.98	7.98	7.98	0.19	1.14	±12.1%
1900	40.0	1.40	7.67	7.67	7.67	0.22	1.14	±12.1%
2000	40.0	1.40	7.77	7.77	7.77	0.24	1.10	±12.1%
2300	39.5	1.67	7.35	7.35	7.35	0.51	0.73	±12.1%
2450	39.2	1.80	7.12	7.12	7.12	0.53	0.72	±12.1%
2600	39.0	1.96	6.94	6.94	6.94	0.45	0.85	±12.1%
3500	37.9	2.91	6.62	6.62	6.62	0.39	0.98	±13.3%
5250	35.9	4.71	5.09	5.09	5.09	0.45	1.30	±13.3%
5600	35.5	5.07	4.66	4.66	4.66	0.45	1.40	±13.3%
5750	35.4	5.22	4.68	4.68	4.68	0.45	1.40	±13.3%

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

^F At frequency below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ±5%. 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 the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

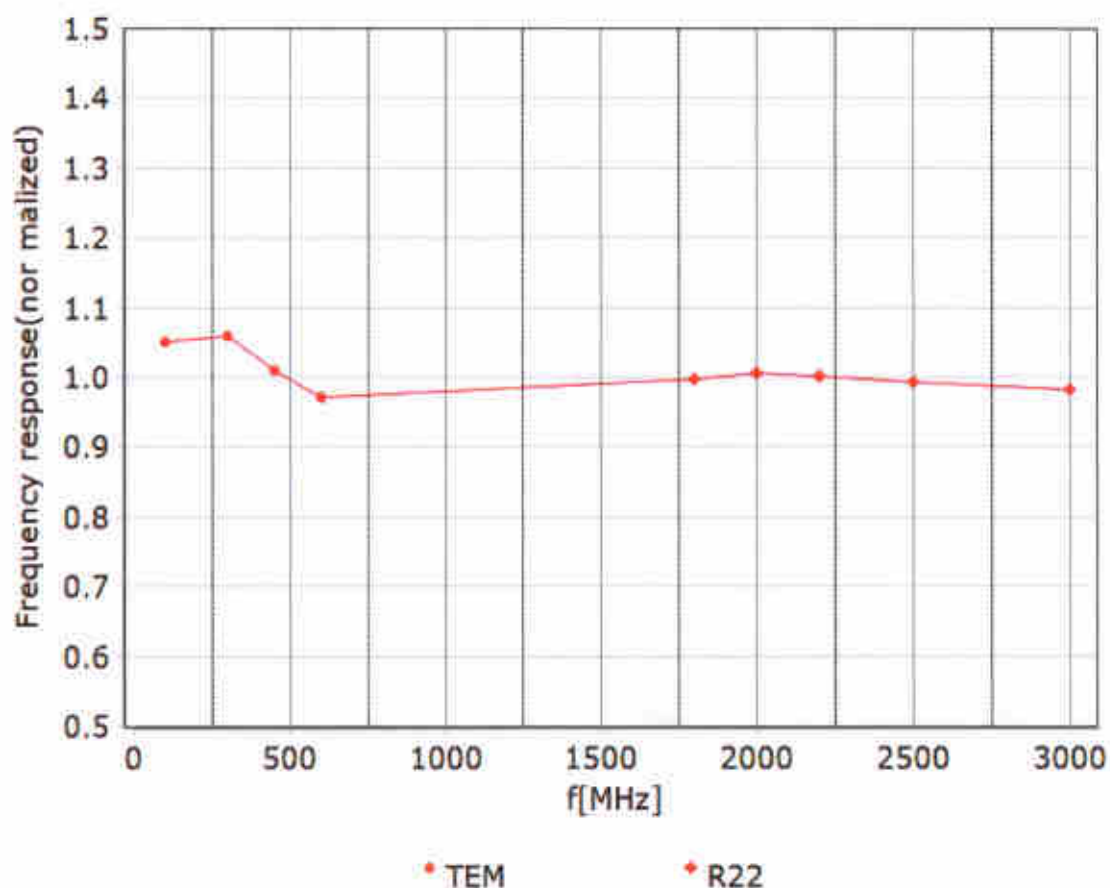


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Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



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

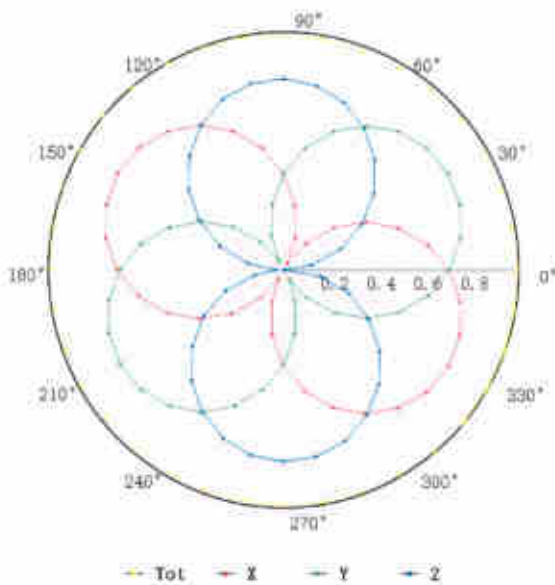


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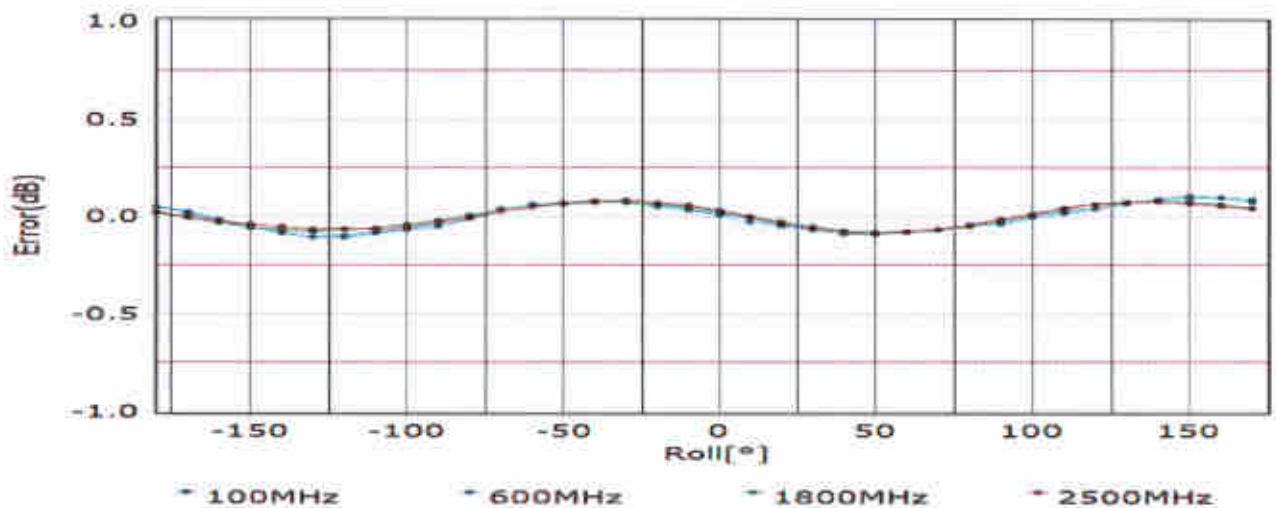
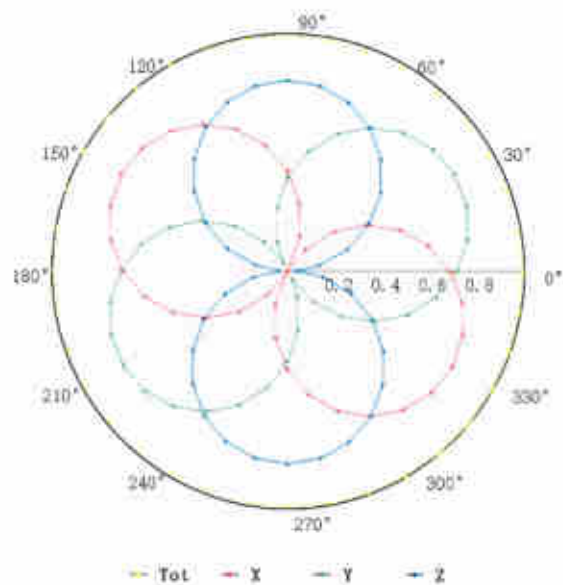
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Receiving Pattern (Φ), $\theta=0^\circ$

f=600 MHz, TEM



f=1800 MHz, R22



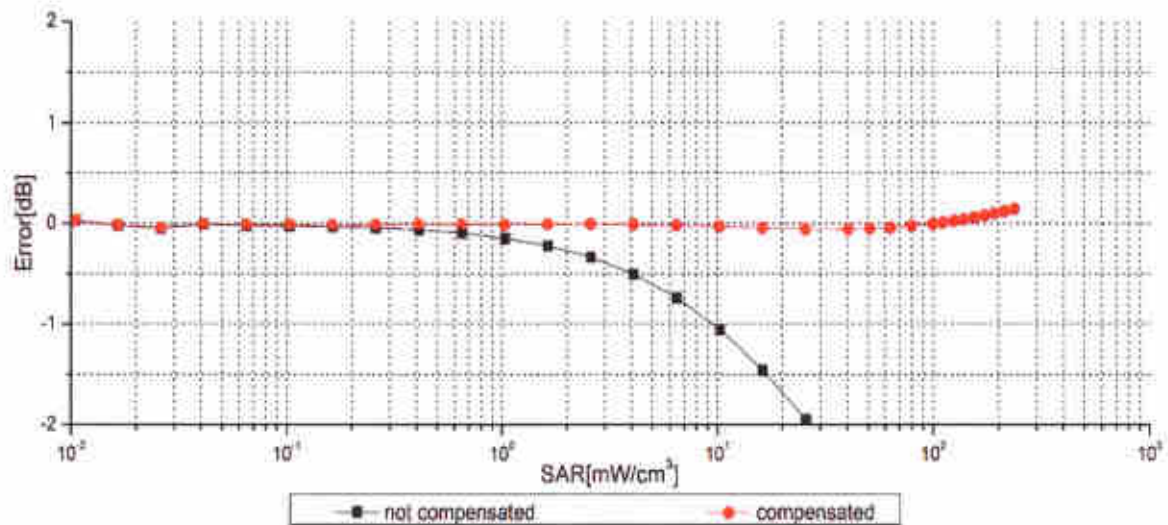
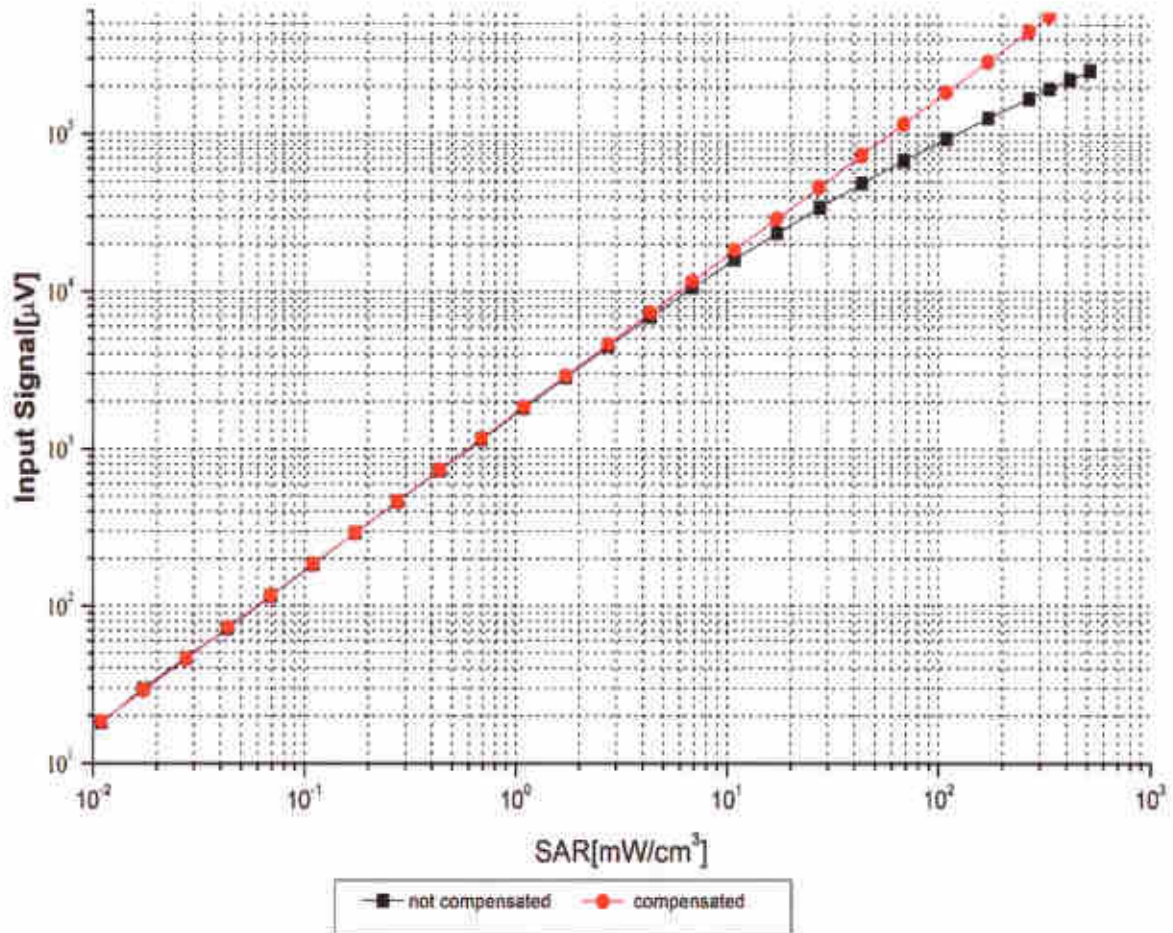
Uncertainty of Axial Isotropy Assessment: $\pm 1.2\%$ ($k=2$)



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Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell, $f = 900 \text{ MHz}$)



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



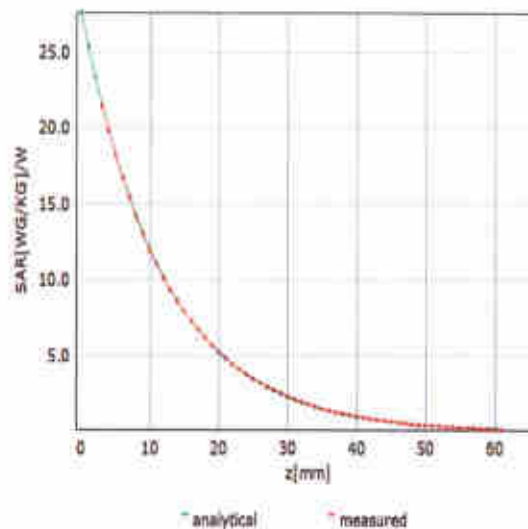
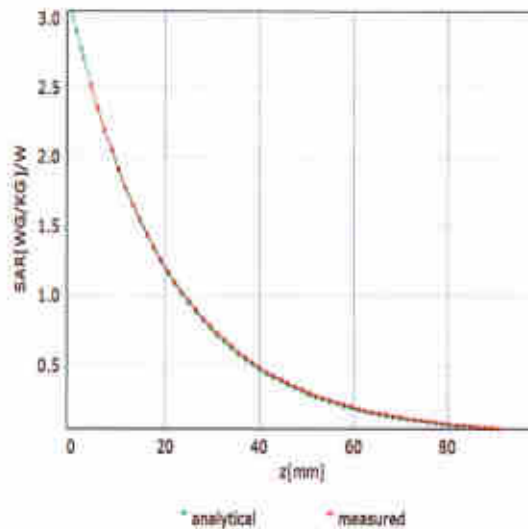
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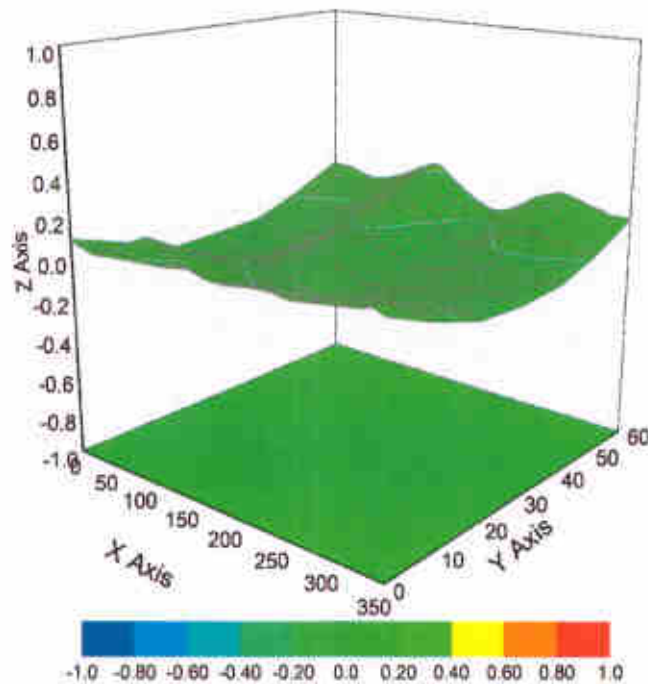
Conversion Factor Assessment

f=750 MHz,WGLS R9(H_convF)

f=1750 MHz,WGLS R22(H_convF)



Deviation from Isotropy in Liquid



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



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DASY/EASY – Parameters of Probe: EX3DV4 – SN:3826

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	51.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	10mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm



Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.



Full Power									
GSM850		Burst Average Power (dBm)			Tune-up Limit	Frame Average Power (dBm)			Tune-up Limit
TX Channel		128	189	251	(dBm)	128	189	251	(dBm)
Frequency (MHz)		824.2	836.4	848.8	(dBm)	824.2	836.4	848.8	(dBm)
GSM 1 Tx slot		32.16	32.29	32.32	33.50	23.16	23.29	23.32	24.50
GPRS 1 Tx slot		32.15	32.27	32.31	33.50	23.15	23.27	23.31	24.50
GPRS 2 Tx slots		30.32	30.40	30.02	31.50	24.32	24.40	24.02	25.50
GPRS 3 Tx slots		27.98	28.03	27.81	29.00	23.70	23.77	23.55	24.74
GPRS 4 Tx slots		25.72	25.73	25.55	26.50	22.72	22.73	22.55	23.50
EDGE 1 Tx slot		26.51	26.34	26.24	27.50	17.51	17.34	17.24	18.50
EDGE 2 Tx slots		24.38	24.31	24.22	25.50	18.38	18.31	18.22	19.50
EDGE 3 Tx slots		22.14	22.13	22.07	23.00	17.88	17.87	17.81	18.74
EDGE 4 Tx slots		20.03	20.09	19.94	21.00	17.03	17.09	16.94	18.00

GSM1900		Burst Average Power (dBm)			Tune-up Limit	Frame Average Power (dBm)			Tune-up Limit
TX Channel		512	661	810	(dBm)	512	661	810	(dBm)
Frequency (MHz)		1852.2	1822	1822.8	(dBm)	1852.2	1822	1822.8	(dBm)
GSM 1 Tx slot		29.75	29.77	29.53	30.50	20.75	20.77	20.53	21.50
GPRS 1 Tx slot		29.74	29.72	29.47	30.50	20.74	20.72	20.47	21.50
GPRS 2 Tx slots		27.75	27.62	27.71	29.00	21.75	21.82	21.71	23.00
GPRS 3 Tx slots		25.44	25.41	25.33	26.50	21.18	21.15	21.27	22.24
GPRS 4 Tx slots		23.44	23.47	23.42	24.50	20.44	20.47	20.42	21.50
EDGE 1 Tx slot		25.46	25.58	25.32	26.50	16.46	16.58	16.32	17.50
EDGE 2 Tx slots		23.29	23.52	23.38	24.50	17.29	17.52	17.38	18.50
EDGE 3 Tx slots		21.24	21.18	21.13	22.00	16.98	16.92	16.87	17.74
EDGE 4 Tx slots		19.81	19.71	19.68	21.00	16.81	16.71	16.68	18.00

Band		WCDMA 8			Tune-up Limit	WCDMA 9			Tune-up Limit	WCDMA 5			Tune-up Limit
TX Channel		9262	9400	9538	(dBm)	1312	1413	1513	(dBm)	4132	4182	4233	(dBm)
Rx Channel		9662	9800	9938	(dBm)	1537	1638	1738	(dBm)	4367	4407	4458	(dBm)
Frequency (MHz)		1852.4	1880	1907.6	(dBm)	1712.4	1732.6	1752.6	(dBm)	826.4	836.4	846.6	(dBm)
3GPP Rel 99	AMR 12.2Kbps	23.00	23.04	22.96	24.00	22.64	22.56	22.73	24.00	23.01	23.00	23.22	24.00
3GPP Rel 99	AMR 12.2Kbps	23.01	23.05	22.99	24.00	22.75	22.58	22.70	24.00	23.02	23.03	23.25	24.00
3GPP Rel 6	HSDPA Subtest-1	22.08	22.04	21.97	23.00	22.02	21.99	22.16	23.00	22.09	22.07	22.26	23.00
3GPP Rel 6	HSDPA Subtest-2	22.06	22.06	22.02	23.00	22.05	22.06	22.18	23.00	22.08	22.12	22.29	23.00
3GPP Rel 6	HSDPA Subtest-3	21.71	21.55	21.47	22.50	21.57	21.52	21.78	22.50	21.60	21.58	21.82	22.50
3GPP Rel 6	HSDPA Subtest-4	21.54	21.57	21.52	22.50	21.48	21.56	21.21	22.50	21.56	21.61	21.39	22.50
3GPP Rel 6	DC-HSDPA Subtest-1	21.92	21.87	21.80	23.00	21.94	21.99	22.09	23.00	22.02	21.87	22.13	23.00
3GPP Rel 6	DC-HSDPA Subtest-2	21.99	21.87	21.99	23.00	21.99	22.03	22.08	23.00	21.99	21.93	22.26	23.00
3GPP Rel 6	DC-HSDPA Subtest-3	21.09	21.47	21.43	22.50	21.57	21.40	21.74	22.50	21.57	21.42	21.76	22.50
3GPP Rel 6	DC-HSDPA Subtest-4	21.53	21.53	21.42	22.50	21.26	21.51	21.20	22.50	21.36	21.47	21.20	22.50
3GPP Rel 6	HSUPA Subtest-1	22.06	22.07	22.02	23.00	21.99	22.06	21.84	23.00	22.03	22.03	22.17	23.00
3GPP Rel 6	HSUPA Subtest-2	20.05	20.06	20.05	21.00	19.87	19.86	19.89	21.00	19.97	20.02	20.13	21.00
3GPP Rel 6	HSUPA Subtest-3	21.07	21.04	20.99	22.00	20.96	20.99	20.99	22.00	21.01	21.01	21.26	23.00
3GPP Rel 6	HSUPA Subtest-4	20.08	20.03	19.98	21.00	19.98	20.00	19.89	21.00	19.99	20.00	20.18	21.00
3GPP Rel 6	HSUPA Subtest-5	22.10	22.10	22.00	23.00	22.00	22.00	22.10	23.00	22.00	22.20	23.00	23.00

Band		CDMA BC3			Tune-up Limit	CDMA BC1			Tune-up Limit	CDMA BC10			Tune-up Limit
TX Channel		1013	384	777	(dBm)	25	800	1175	(dBm)	476	580	864	(dBm)
Frequency (MHz)		624.7	636.52	646.31	(dBm)	1851.25	1680	1508.75	(dBm)	817.9	820.5	823.1	(dBm)
RC1 S055		24.13	24.23	24.54	25.00	24.32	24.55	24.38	25.00	23.90	24.28	24.22	25.00
RC1 S055		24.10	24.19	24.50	25.00	24.23	24.44	24.25	25.00	23.85	24.11	24.02	25.00
RC3 S032 (F+SCH)		24.14	24.24	24.53	25.00	24.44	24.52	24.35	25.00	24.25	24.27	24.18	25.00
RC3 S032 (H+SCH)		24.08	24.15	24.47	25.00	24.42	24.39	24.22	25.00	24.01	24.24	24.11	25.00
RTAP 150.6Kbps		23.85	23.94	24.25	25.00	23.72	23.81	23.69	25.00	24.12	24.14	24.08	25.00
RTAP 400.6Kbps		23.79	23.86	24.11	25.00	23.74	23.74	23.62	25.00	24.01	24.11	24.07	25.00



Band 2 (1900MHz Band) Part 24E																
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./ Freq. 1860	Power Middle Ch./ Freq. 1890	Power High Ch./ Freq. 1920	Tune-up limit (dBm)	MPR (dB)								
Channel																
Frequency (MHz)																
20	QPSK	1	0	22.94	22.91	22.94	24	0								
20	QPSK	1	49	22.57	22.59	22.64										
20	QPSK	1	99	22.47	22.55	22.48										
20	QPSK	50	0	21.96	21.93	21.90	23	1								
20	QPSK	50	24	21.80	21.84	21.86										
20	QPSK	50	50	21.64	21.77	21.73										
20	QPSK	100	0	21.84	21.81	21.82	23	1								
20	16QAM	1	0	22.12	22.11	22.12										
20	16QAM	1	49	22.03	22.11	22.08										
20	16QAM	1	99	21.78	21.88	21.79	22	2								
20	16QAM	50	0	20.94	20.96	20.88										
20	16QAM	50	24	20.83	20.85	20.87										
20	16QAM	50	50	20.60	20.76	20.74	22	2								
20	16QAM	100	0	20.75	20.79	20.80										
20	64QAM	1	0	21.10	20.99	20.94										
20	64QAM	1	49	20.98	20.94	20.85	22	2								
20	64QAM	1	99	20.74	20.75	20.69										
20	64QAM	50	0	19.92	19.94	19.86										
20	64QAM	50	24	19.79	19.85	19.85	21	3								
20	64QAM	50	50	19.59	19.74	19.70										
20	64QAM	100	0	19.74	19.79	19.80										
Channel																
Frequency (MHz)																
15	QPSK	1	0	22.84	22.88	22.84	24	0								
15	QPSK	1	37	22.51	22.57	22.44										
15	QPSK	1	74	22.39	22.47	22.48										
15	QPSK	36	0	21.92	21.80	21.90	23	1								
15	QPSK	36	20	21.75	21.64	21.83										
15	QPSK	36	39	21.64	21.66	21.71										
15	QPSK	75	0	21.71	21.69	21.68	23	1								
15	16QAM	1	0	22.01	22.01	22.02										
15	16QAM	1	37	21.93	22.02	21.96										
15	16QAM	1	74	21.70	21.77	21.77	22	2								
15	16QAM	36	0	20.85	20.92	20.70										
15	16QAM	36	20	20.70	20.73	20.87										
15	16QAM	36	39	20.51	20.70	20.69	22	2								
15	16QAM	75	0	20.55	20.60	20.79										
15	64QAM	1	0	20.98	20.82	20.76										
15	64QAM	1	37	20.94	20.79	20.84	21	3								
15	64QAM	1	74	20.66	20.72	20.57										
15	64QAM	36	0	19.81	19.89	19.85										
15	64QAM	36	20	19.75	19.65	19.76	21	3								
15	64QAM	36	39	19.67	19.60	19.52										
15	64QAM	75	0	19.59	19.72	19.64										
Channel																
Frequency (MHz)																
10	QPSK	1	0	22.81	22.76	22.69	24	0								
10	QPSK	1	25	22.38	22.47	22.57										
10	QPSK	1	49	22.40	22.52	22.39										
10	QPSK	25	0	21.79	21.96	21.86	23	1								
10	QPSK	25	12	21.63	21.71	21.69										
10	QPSK	25	25	21.57	21.74	21.53										
10	QPSK	50	0	21.76	21.63	21.73	23	1								
10	16QAM	1	0	21.96	22.05	22.01										
10	16QAM	1	25	21.97	22.08	21.92										
10	16QAM	1	49	21.71	21.76	21.72	22	2								
10	16QAM	25	0	20.91	20.94	20.79										
10	16QAM	25	12	20.81	20.73	20.78										
10	16QAM	25	25	20.42	20.67	20.65	22	2								
10	16QAM	50	0	20.62	20.66	20.71										
10	64QAM	1	0	20.95	20.98	20.90										
10	64QAM	1	25	20.79	20.88	20.67	22	2								
10	64QAM	1	49	20.73	20.67	20.59										
10	64QAM	25	0	19.92	19.91	19.78										
10	64QAM	25	12	19.62	19.77	19.81	21	3								
10	64QAM	25	25	19.49	19.68	19.66										
10	64QAM	50	0	19.60	19.61	19.80										
Channel																
Frequency (MHz)																
5	QPSK	1	0	22.78	22.83	22.74	24	0								
5	QPSK	1	12	22.37	22.41	22.58										
5	QPSK	1	24	22.46	22.35	22.33										
5	QPSK	12	0	21.76	21.80	21.84	23	1								
5	QPSK	12	7	21.80	21.64	21.75										
5	QPSK	12	13	21.58	21.72	21.73										
5	QPSK	25	0	21.73	21.81	21.65	23	1								
5	16QAM	1	0	22.03	21.97	22.12										
5	16QAM	1	12	22.03	22.11	22.04										
5	16QAM	1	24	21.71	21.86	21.79	22	2								
5	16QAM	12	0	20.92	20.95	20.73										
5	16QAM	12	7	20.63	20.79	20.80										
5	16QAM	12	13	20.40	20.62	20.60	22	2								
5	16QAM	25	0	20.65	20.69	20.65										
5	64QAM	1	0	21.02	20.94	20.87										
5	64QAM	1	12	20.87	20.75	20.83	22	2								
5	64QAM	1	24	20.61	20.61	20.53										
5	64QAM	12	0	19.90	19.88	19.68										
5	64QAM	12	7	19.76	19.85	19.81	21	3								
5	64QAM	12	13	19.57	19.55	19.56										
5	64QAM	25	0	19.66	19.73	19.70										
Channel																
Frequency (MHz)																
3	QPSK	1	0	22.91	22.91	22.81	24	0								
3	QPSK	1	8	22.49	22.47	22.64										
3	QPSK	1	14	22.37	22.45	22.44										
3	QPSK	8	0	21.92	21.87	21.84	23	1								
3	QPSK	8	4	21.64	21.68	21.67										
3	QPSK	8	7	21.45	21.70	21.73										
3	QPSK	15	0	21.71	21.81	21.69	23	1								
3	16QAM	1	0	22.06	21.91	22.00										
3	16QAM	1	8	21.93	22.08	22.07										
3	16QAM	1	14	21.76	21.77	21.62	22	2								
3	16QAM	8	0	20.80	20.81	20.85										
3	16QAM	8	4	20.82	20.78	20.78										
3	16QAM	8	7	20.46	20.74	20.55	22	2								
3	16QAM	15	0	20.65	20.70	20.77										
3	64QAM	1	0	21.02	20.91	20.85										
3	64QAM	1	8	20.96	20.87	20.85	22	2								
3	64QAM	1	14	20.59	20.59	20.58										
3	64QAM	8	0	19.80	19.78	19.80										
3	64QAM	8	4	19.71	19.76	19.77	21	3								
3	64QAM	8	7	19.58	19.63	19.60										
3	64QAM	15	0	19.60	19.79	19.74										
Channel																
Frequency (MHz)																
1.4	QPSK	1	0	22.80	22.72	22.67	24	0								
1.4	QPSK	1	3	22.54	22.40	22.56										
1.4	QPSK	1	5	22.41	22.44	22.28										
1.4	QPSK	3	0	22.77	22.84	22.74	24	0								
1.4	QPSK	3	1	22.51	22.54	22.73										
1.4	QPSK	3	3	22.49	22.65	22.45										
1.4	QPSK	6	0	21.80	21.68	21.82	23	1								
1.4	16QAM	1	0	21.98	22.02	21.99										
1.4	16QAM	1	3	21.93	21.92	22.00										
1.4	16QAM	1	5	21.64	21.69	21.67	23	1								
1.4	16QAM	3	0	21.80	21.67	21.61										
1.4	16QAM	3	1	21.52	21.71	21.57										
1.4	16QAM	3	3	21.47	21.68	21.48	22	2								
1.4	64QAM	1	0	21.74	20.70	20.78										
1.4	64QAM	1	3	20.99	20.90	20.88										
1.4	64QAM	1	5	20.63	20.64	20.61	22	2								
1.4	64QAM	3	0	20.72	20.74	20.72										
1.4	64QAM	3	1	20.65	20.54	20.62										
1.4	64QAM	3	3	20.33	20.90	20.51	21	3								
1.4	64QAM	6	0	21.70	19.81	19.80										



Band 7 (2600MHz Band)									
Part 27									
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				20350	21100	21350			
Frequency (MHz)				2510	2535	2560			
20	QPSK	1	0	22.97	23.21	23.25			
20	QPSK	1	49	22.89	23.24	23.30	24	0	
20	QPSK	50	0	23.06	23.25	23.46			
20	QPSK	50	24	21.91	22.31	22.30			
20	QPSK	50	50	22.04	22.39	22.42	23	1	
20	QPSK	100	0	22.01	22.22	22.32			
20	16QAM	1	0	22.40	22.58	22.18			
20	16QAM	1	49	22.31	22.62	22.59	23	1	
20	16QAM	1	99	22.39	22.39	22.75			
20	16QAM	50	0	20.91	21.31	21.24			
20	16QAM	50	24	20.52	21.26	21.37			
20	16QAM	50	50	20.94	21.26	21.44	22	2	
20	16QAM	100	0	20.99	21.29	21.32			
20	64QAM	1	0	21.31	21.67	21.58			
20	64QAM	1	49	21.12	21.40	21.55	22	2	
20	64QAM	1	99	21.16	21.72	21.65			
20	64QAM	50	0	19.91	20.21	20.29			
20	64QAM	50	24	19.95	20.38	20.38			
20	64QAM	50	50	19.96	20.33	20.27	21	3	
20	64QAM	100	0	20.00	20.24	20.34			
Channel				20625	21100	21375	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2507.5	2535	2562.5			
15	QPSK	1	0	22.71	22.85	22.87			
15	QPSK	1	37	22.72	22.93	22.86	24	0	
15	QPSK	1	74	23.05	23.40	23.43			
15	QPSK	36	0	22.06	22.44	22.36			
15	QPSK	36	20	22.10	22.43	22.43			
15	QPSK	36	39	22.03	22.37	22.42	23	1	
15	QPSK	75	0	22.07	22.42	22.43			
15	16QAM	1	0	22.38	22.79	22.89			
15	16QAM	1	37	22.37	22.79	22.89	23	1	
15	16QAM	1	74	22.38	22.81	22.85			
15	16QAM	36	0	21.09	21.51	21.42			
15	16QAM	36	20	21.12	21.47	21.41			
15	16QAM	36	39	21.02	21.37	21.47	22	2	
15	16QAM	75	0	21.05	21.42	21.43			
15	64QAM	1	0	21.30	21.60	21.78			
15	64QAM	1	37	21.18	21.61	21.49	22	2	
15	64QAM	1	74	21.33	21.57	21.68			
15	64QAM	36	0	20.08	20.47	20.41			
15	64QAM	36	20	20.14	20.45	20.43	21	3	
15	64QAM	36	39	20.01	20.31	20.47			
15	64QAM	75	0	20.02	20.44	20.41			
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2505	2535	2565			
10	QPSK	1	0	22.86	22.97	22.84			
10	QPSK	1	25	23.06	23.16	22.99	24	0	
10	QPSK	1	49	23.16	23.23	23.28			
10	QPSK	25	0	21.99	22.45	22.51			
10	QPSK	25	12	22.00	22.45	22.50	23	1	
10	QPSK	25	25	22.02	22.44	22.49			
10	QPSK	50	0	22.04	22.47	22.55			
10	16QAM	1	0	22.56	22.88	22.99			
10	16QAM	1	25	22.31	22.73	22.87	23	1	
10	16QAM	1	49	22.52	22.85	22.92			
10	16QAM	25	0	21.02	21.46	21.50			
10	16QAM	25	12	21.03	21.47	21.49	22	2	
10	16QAM	25	25	21.02	21.46	21.44			
10	16QAM	50	0	21.08	21.49	21.49			
10	64QAM	1	0	21.51	21.75	21.88			
10	64QAM	1	25	21.15	21.63	21.59	22	2	
10	64QAM	1	49	21.37	21.81	21.82			
10	64QAM	25	0	19.99	20.48	20.43			
10	64QAM	25	12	19.99	20.44	20.46	21	3	
10	64QAM	25	25	20.06	20.46	20.52			
10	64QAM	50	0	20.06	20.48	20.52			
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2502.5	2535	2567.5			
5	QPSK	1	0	22.90	22.86	22.86			
5	QPSK	1	12	22.87	22.97	23.15	24	0	
5	QPSK	1	24	22.94	23.38	23.39			
5	QPSK	12	0	21.96	22.47	22.53			
5	QPSK	12	7	22.00	22.48	22.48	23	1	
5	QPSK	12	13	21.63	22.37	22.46			
5	QPSK	25	0	21.91	22.44	22.51			
5	16QAM	1	0	22.34	22.74	22.87			
5	16QAM	1	12	22.22	22.71	22.73	23	1	
5	16QAM	1	24	22.20	22.76	22.71			
5	16QAM	12	0	21.01	21.49	21.53			
5	16QAM	12	7	21.05	21.50	21.52	22	2	
5	16QAM	12	13	20.95	21.46	21.49			
5	16QAM	25	0	20.94	21.51	21.49			
5	64QAM	1	0	21.22	21.65	21.67			
5	64QAM	1	12	21.20	21.58	21.68	22	2	
5	64QAM	1	24	21.15	21.64	21.61			
5	64QAM	12	0	20.00	20.49	20.51			
5	64QAM	12	7	20.09	20.51	20.50	21	3	
5	64QAM	12	13	19.95	20.43	20.47			
5	64QAM	25	0	19.90	20.49	20.49			

Band 12 (700MHz Low Band)									
Part 27F(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dbm)	MPR (db)	
Channel				23600	23995	23130			
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	22.87	22.90	22.93			
10	QPSK	1	25	22.56	22.59	22.46	24	0	
10	QPSK	1	49	22.86	22.82	22.89			
10	QPSK	25	0	21.77	21.68	21.60			
10	QPSK	25	12	21.75	21.67	21.56	23	1	
10	QPSK	25	25	21.58	21.61	21.66			
10	QPSK	50	0	21.78	21.51	21.72			
10	16QAM	1	0	22.12	22.10	22.03			
10	16QAM	1	25	21.83	21.78	21.81	23	1	
10	16QAM	1	49	22.02	22.06	22.04			
10	16QAM	25	0	20.79	20.54	20.59			
10	16QAM	25	12	20.70	20.64	20.59	22	2	
10	16QAM	25	25	20.58	20.64	20.66			
10	16QAM	50	0	20.78	20.55	20.73			
10	64QAM	1	0	20.94	20.94	20.97			
10	64QAM	1	25	20.69	20.69	20.79	22	2	
10	64QAM	1	49	20.96	20.99	20.99			
10	64QAM	25	0	19.77	19.55	19.56			
10	64QAM	25	12	19.71	19.62	19.56	21	3	
10	64QAM	25	25	19.60	19.58	19.65			
10	64QAM	50	0	19.73	19.54	19.64			
Channel				23035	23095	23155	Tune-up limit (dbm)	MPR (db)	
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	22.70	22.72	22.91			
5	QPSK	1	12	22.44	22.51	22.37	24	0	
5	QPSK	1	24	22.71	22.75	22.77			
5	QPSK	12	0	21.62	21.47	21.47			
5	QPSK	12	7	21.58	21.58	21.37	23	1	
5	QPSK	12	13	21.55	21.51	21.48			
5	QPSK	25	0	21.70	21.36	21.55			
5	16QAM	1	0	22.06	22.05	22.03			
5	16QAM	1	12	21.65	21.66	21.62	23	1	
5	16QAM	1	24	21.95	21.93	21.87			
5	16QAM	12	0	20.64	20.39	20.46			
5	16QAM	12	7	20.66	20.53	20.50	22	2	
5	16QAM	12	13	20.48	20.51	20.47			
5	16QAM	25	0	20.71	20.37	20.56			
5	64QAM	1	0	20.84	20.94	20.89			
5	64QAM	1	12	20.57	20.53	20.77	22	2	
5	64QAM	1	24	20.78	20.84	20.89			
5	64QAM	12	0	19.60	19.43	19.53			
5	64QAM	12	7	19.57	19.52	19.43	21	3	
5	64QAM	12	13	19.41	19.40	19.45			
5	64QAM	25	0	19.56	19.46	19.51			
Channel				23025	23095	23165	Tune-up limit (dbm)	MPR (db)	
Frequency (MHz)				700.5	707.5	714.5			
3	QPSK	1	0	22.86	22.74	22.89			
3	QPSK	1	8	22.44	22.41	22.45	24	0	
3	QPSK	1	14	22.72	22.67	22.88			
3	QPSK	8	0	21.57	21.40	21.42			
3	QPSK	8	4	21.81	21.47	21.47	23	1	
3	QPSK	8	7	21.41	21.54	21.53			
3	QPSK	15	0	21.64	21.44	21.72			
3	16QAM	1	0	22.11	22.07	21.95			
3	16QAM	1	8	21.71	21.61	21.61	23	1	
3	16QAM	1	14	21.94	21.86	22.02			
3	16QAM	8	0	20.69	20.53	20.54			
3	16QAM	8	4	20.62	20.59	20.39	22	2	
3	16QAM	8	7	20.42	20.45	20.58			
3	16QAM	15	0	20.60	20.40	20.72			
3	64QAM	1	0	20.85	20.94	20.77	22	2	
3	64QAM	1	8	20.54	20.61	20.75			
3	64QAM	1	14	20.76	20.79	20.83			
3	64QAM	8	0	19.74	19.54	19.49			
3	64QAM	8	4	19.63	19.58	19.36	21	3	
3	64QAM	8	7	19.53	19.44	19.50			
3	64QAM	15	0	19.71	19.44	19.52			
Channel				23017	23095	23173	Tune-up limit (dbm)	MPR (db)	
Frequency (MHz)				699.7	707.5	715.3			
1.4	QPSK	1	0	22.76	22.88	22.82			
1.4	QPSK	1	3	22.38	22.58	22.34	24	0	
1.4	QPSK	1	5	22.73	22.81	22.81			
1.4	QPSK	3	0	22.48	22.20	22.38			
1.4	QPSK	3	1	22.49	22.40	22.42	23	1	
1.4	QPSK	3	3	22.37	22.21	22.38			
1.4	QPSK	6	0	21.69	21.34	21.58	23	1	
1.4	16QAM	1	0	22.02	21.91	21.94			
1.4	16QAM	1	3	21.71	21.58	21.78			
1.4	16QAM	1	5	22.01	21.99	22.00			
1.4	16QAM	3	0	21.40	21.34	21.28	23	1	
1.4	16QAM	3	1	21.38	21.42	21.39			
1.4	16QAM	3	3	21.35	21.38	21.40			
1.4	16QAM	6	0	20.61	20.55	20.54	22	2	
1.4	64QAM	1	0	20.81	20.86	20.81			
1.4	64QAM	1	3	20.52	20.69	20.69			
1.4	64QAM	1	5	20.80	20.87	20.85			
1.4	64QAM	3	0	20.65	20.35	20.36	22	2	
1.4	64QAM	3	1	20.59	20.42	20.40			
1.4	64QAM	3	3	20.56	20.46	20.82			
1.4	64QAM	6	0	19.54	19.46	19.55	21	3	



Band 14 (700MHz Band)									
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				2330			Tune-up limit (dbm)	MPR (db)	
Frequency (MHz)				793					
10	QPSK	1	0		22.65		24	0	
10	QPSK	1	25		22.57				
10	QPSK	1	49		22.72				
10	QPSK	25	0		21.46		23	1	
10	QPSK	25	12		21.47				
10	QPSK	25	25		21.42				
10	QPSK	50	0		21.54		23	1	
10	16QAM	1	0		21.86				
10	16QAM	1	25		21.76				
10	16QAM	1	49		21.90		22	2	
10	16QAM	25	0		20.47				
10	16QAM	25	12		20.52				
10	16QAM	25	25		20.41		22	2	
10	16QAM	50	0		20.55				
10	64QAM	1	0		20.70				
10	64QAM	1	25		20.71		22	2	
10	64QAM	1	49		20.87				
10	64QAM	25	0		19.46				
10	64QAM	25	12		19.50		21	3	
10	64QAM	25	25		19.46				
10	64QAM	50	0		19.46				
Channel				23305	23330	23355	Tune-up limit (dbm)	MPR (db)	
Frequency (MHz)				790.5	793	795.5			
5	QPSK	1	0	22.26	22.14	22.22	24	0	
5	QPSK	1	12	22.15	22.16	22.07			
5	QPSK	1	24	22.40	22.37	22.44			
5	QPSK	12	0	21.41	21.41	21.46	23	1	
5	QPSK	12	7	21.33	21.45	21.38			
5	QPSK	12	13	21.44	21.43	21.42			
5	QPSK	25	0	21.44	21.44	21.52	23	1	
5	16QAM	1	0	21.68	21.72	21.70			
5	16QAM	1	12	21.65	21.73	21.67			
5	16QAM	1	24	21.77	21.73	21.74	22	2	
5	16QAM	12	0	20.44	20.44	20.50			
5	16QAM	12	7	20.35	20.52	20.43			
5	16QAM	12	13	20.46	20.46	20.48	22	2	
5	16QAM	25	0	20.45	20.49	20.49			
5	64QAM	1	0	20.49	20.55	20.60			
5	64QAM	1	12	20.43	20.55	20.59	22	2	
5	64QAM	1	24	20.59	20.59	20.61			
5	64QAM	12	0	19.43	19.45	19.50			
5	64QAM	12	7	19.35	19.48	19.39	21	3	
5	64QAM	12	13	19.44	19.46	19.45			
5	64QAM	25	0	19.42	19.43	19.47			

Band 17 (700MHz Band) Part 27(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				23765	23790	23800	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				710	711	711			
10	QPSK	1	0	22.85	22.93	22.88	24	0	
10	QPSK	1	25	22.84	22.77	22.74			
10	QPSK	1	49	22.81	22.76	22.79			
10	QPSK	25	0	21.70	21.74	21.66	23	1	
10	QPSK	25	12	21.67	21.63	21.59			
10	QPSK	25	25	21.64	21.54	21.64			
10	QPSK	50	0	21.65	21.66	21.65	23	1	
10	16QAM	1	0	22.13	22.07	22.06			
10	16QAM	1	25	21.80	21.84	21.87			
10	16QAM	1	49	22.05	22.08	22.05	22	2	
10	16QAM	25	0	20.66	20.63	20.63			
10	16QAM	25	12	20.59	20.65	20.58			
10	16QAM	25	25	20.62	20.57	20.62	22	2	
10	16QAM	50	0	20.61	20.60	20.59			
10	64QAM	1	0	20.98	20.97	20.96			
10	64QAM	1	25	20.71	20.70	20.82	22	2	
10	64QAM	1	49	20.99	20.91	20.86			
10	64QAM	25	0	19.66	19.63	19.63			
10	64QAM	25	12	19.59	19.66	19.61	21	3	
10	64QAM	25	25	19.64	19.57	19.49			
10	64QAM	50	0	19.62	19.57	19.56			
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				709.5	710	710.5			
5	QPSK	1	0	22.75	22.82	22.78	24	0	
5	QPSK	1	12	22.55	22.47	22.42			
5	QPSK	1	24	22.57	22.46	22.48			
5	QPSK	12	0	21.53	21.54	21.53	23	1	
5	QPSK	12	7	21.65	21.53	21.51			
5	QPSK	12	13	21.58	21.58	21.53			
5	QPSK	25	0	21.65	21.62	21.51	23	1	
5	16QAM	1	0	21.88	21.83	21.87			
5	16QAM	1	12	21.85	21.77	21.80			
5	16QAM	1	24	21.92	21.84	21.77	22	2	
5	16QAM	12	0	20.55	20.58	20.54			
5	16QAM	12	7	20.63	20.52	20.49			
5	16QAM	12	13	20.58	20.57	20.55	22	2	
5	16QAM	25	0	20.64	20.59	20.50			
5	64QAM	1	0	20.75	20.69	20.71			
5	64QAM	1	12	20.69	20.59	20.66	22	2	
5	64QAM	1	24	20.69	20.71	20.63			
5	64QAM	12	0	19.57	19.56	19.48			
5	64QAM	12	7	19.62	19.55	19.51	21	3	
5	64QAM	12	13	19.62	19.58	19.53			
5	64QAM	25	0	19.63	19.59	19.46			

Band 25 (1900MHz Band)									
Part 24E									
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				26140	1860	26500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1860	2630	1905			
20	QPSK	1	0	22.80	22.76	22.93	24	0	
20	QPSK	1	49	22.60	22.74	22.70			
20	QPSK	1	99	22.51	22.61	22.65			
20	QPSK	50	0	21.83	21.77	21.86	23	1	
20	QPSK	50	24	21.80	21.75	21.79			
20	QPSK	50	50	21.74	21.69	21.69			
20	QPSK	100	0	21.79	21.79	21.88	23	1	
20	16QAM	1	0	22.10	22.03	22.05			
20	16QAM	1	49	21.95	22.06	21.98			
20	16QAM	1	99	21.52	21.77	21.48	22	2	
20	16QAM	50	0	20.82	20.74	20.76			
20	16QAM	50	24	20.77	20.75	20.81			
20	16QAM	50	50	20.74	20.69	20.73	22	2	
20	16QAM	100	0	20.77	20.70	20.76			
20	64QAM	1	0	20.98	20.94	21.05			
20	64QAM	1	49	20.89	20.93	20.90	22	2	
20	64QAM	1	99	20.57	20.67	20.54			
20	64QAM	50	0	19.90	19.87	19.89			
20	64QAM	50	24	19.89	19.83	19.85	21	3	
20	64QAM	50	50	19.84	19.76	19.83			
20	64QAM	100	0	19.87	19.82	19.87			
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1857.5	1860	1907.5			
15	QPSK	1	0	22.76	22.74	22.63	24	0	
15	QPSK	1	37	22.55	22.65	22.67			
15	QPSK	1	74	22.44	22.42	22.49			
15	QPSK	36	0	21.71	21.71	21.67	23	1	
15	QPSK	36	20	21.69	21.58	21.61			
15	QPSK	36	39	21.73	21.66	21.60			
15	QPSK	75	0	21.61	21.66	21.71	23	1	
15	16QAM	1	0	21.95	22.00	21.98			
15	16QAM	1	37	21.83	21.93	21.90			
15	16QAM	1	74	21.35	21.58	21.42	22	2	
15	16QAM	36	0	20.80	20.63	20.76			
15	16QAM	36	20	20.66	20.56	20.74			
15	16QAM	36	39	20.71	20.50	20.73	22	2	
15	16QAM	75	0	20.82	20.86	20.85			
15	64QAM	1	0	20.92	20.88	21.00			
15	64QAM	1	37	20.79	20.78	20.72	22	2	
15	64QAM	1	74	20.55	20.62	20.47			
15	64QAM	36	0	19.73	19.74	19.73			
15	64QAM	36	20	19.88	19.94	19.69	21	3	
15	64QAM	36	39	19.75	19.74	19.82			
15	64QAM	75	0	19.84	19.75	19.82			
Channel				26500	26340	26650	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1855	1860	1910			
10	QPSK	1	0	22.66	22.58	22.68	24	0	
10	QPSK	1	25	22.45	22.71	22.58			
10	QPSK	1	49	22.46	22.45	22.58			
10	QPSK	25	0	21.65	21.63	21.69	23	1	
10	QPSK	25	12	21.61	21.52	21.60			
10	QPSK	25	25	21.61	21.63	21.57			
10	QPSK	50	0	21.62	21.78	21.70	23	1	
10	16QAM	1	0	21.98	22.02	21.94			
10	16QAM	1	25	21.75	22.03	21.90			
10	16QAM	1	49	21.46	21.61	21.40	22	2	
10	16QAM	25	0	20.88	20.81	20.83			
10	16QAM	25	12	20.83	20.72	20.89			
10	16QAM	25	25	20.81	20.53	20.61	22	2	
10	16QAM	50	0	20.59	20.54	20.61			
10	64QAM	1	0	20.94	20.86	21.03			
10	64QAM	1	25	20.76	20.90	20.73	22	2	
10	64QAM	1	49	20.95	20.92	20.92			
10	64QAM	25	0	19.71	19.87	19.87			
10	64QAM	25	12	19.81	19.82	19.82	21	3	
10	64QAM	25	25	19.67	19.68	19.81			
10	64QAM	50	0	19.87	19.73	19.73			
Channel				26505	26340	26665	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1852.5	1860	1912.5			
5	QPSK	1	0	22.75	22.68	22.80	24	0	
5	QPSK	1	12	22.54	22.72	22.62			
5	QPSK	1	24	22.31	22.49	22.48			
5	QPSK	12	0	21.71	21.67	21.69	23	1	
5	QPSK	12	7	21.66	21.64	21.67			
5	QPSK	12	13	21.74	21.65	21.63			
5	QPSK	25	0	21.61	21.78	21.67	23	1	
5	16QAM	1	0	21.96	22.01	21.98			
5	16QAM	1	12	21.95	22.04	21.93			
5	16QAM	1	24	21.41	21.65	21.32	22	2	
5	16QAM	12	0	20.65	20.63	20.68			
5	16QAM	12	7	20.77	20.75	20.77			
5	16QAM	12	13	20.74	20.57	20.70	22	2	
5	16QAM	25	0	20.77	20.74	20.74			
5	64QAM	1	0	20.97	20.76	20.80			
5	64QAM	1	12	20.61	20.83	20.75	22	2	
5	64QAM	1	24	20.45	20.48	20.48			
5	64QAM	12	0	19.89	19.83	19.77			
5	64QAM	12	7	19.77	19.65	19.71	21	3	
5	64QAM	12	13	19.76	19.76	19.84			
5	64QAM	25	0	19.77	19.64	19.69			
Channel				26555	26340	26675	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1851.5	1860	1913.5			
3	QPSK	1	0	22.61	22.65	22.82	24	0	
3	QPSK	1	8	22.40	22.65	22.59			
3	QPSK	1	14	22.45	22.59	22.48			
3	QPSK	8	0	21.82	21.82	21.81	23	1	
3	QPSK	8	4	21.71	21.55	21.59			
3	QPSK	8	7	21.55	21.69	21.49			
3	QPSK	15	0	21.76	21.64	21.73	23	1	
3	16QAM	1	0	21.96	21.99	21.93			
3	16QAM	1	8	21.85	21.98	21.83			
3	16QAM	1	14	21.39	21.77	21.29	22	2	
3	16QAM	8	0	20.74	20.56	20.62			
3	16QAM	8	4	20.57	20.69	20.66			
3	16QAM	8	7	20.54	20.64	20.64	22	2	
3	16QAM	15	0	20.60	20.68	20.67			
3	64QAM	1	0	20.97	20.89	20.98			
3	64QAM	1	8	20.83	20.33	20.88	22	2	
3	64QAM	1	14	20.52	20.44	20.51			
3	64QAM	8	0	19.71	19.82	19.71			
3	64QAM	8	4	19.80	19.73	19.68	21	3	
3	64QAM	8	7	19.64	19.65	19.67			
3	64QAM	15	0	19.77	19.74	19.84			
Channel				26557	26340	26683	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1850.7	1860	1914.3			
1.4	QPSK	1	0	22.74	22.67	22.73	24	0	
1.4	QPSK	1	3	22.62	22.67	22.58			
1.4	QPSK	1	5	22.31	22.47	22.62			
1.4	QPSK	3	0	22.52	22.65	22.51	24	0	
1.4	QPSK	3	1	22.52	22.49	22.53			
1.4	QPSK	3	3	22.56	22.46	22.45			
1.4	QPSK	6	0	21.66	21.61	21.68	23	1	
1.4	16QAM	1	0	22.07	21.83	22.02			
1.4	16QAM	1	3	21.91	22.01	21.84			
1.4	16QAM	1	5	21.41	21.77	21.41	23	1	
1.4	16QAM	3	0	21.60	21.62	21.55			
1.4	16QAM	3	1	21.56	21.52	21.55			
1.4	16QAM	3	3	21.46	21.38	21.48	22	2	
1.4	64QAM	1	0	20.84	20.57	20.58			
1.4	64QAM	1	3	20.89	20.76	20.78			
1.4	64QAM	1	5	20.44	20.58	20.36	22	2	
1.4	64QAM	3	0	20.76	20.98	20.73			
1.4	64QAM	3	1	20.59	20.71	20.74			
1.4	64QAM	3	3	20.85	20.86	20.67	21	3	
1.4	64QAM	6	0	19.69	19.62	19.78			



Band 26 for FCC (only on channel required)										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low		Power High		Tune-up limit (dBm)	MPR (dB)	
				Ch. / Freq.	Ch. / Freq.	Ch. / Freq.	Ch. / Freq.			
Channel				26765	26865	26965				
Frequency (MHz)				821.5	831.5	841.5				
15	QPSK	1	0	22.46	22.74	22.95	24	0		
15	QPSK	1	37	22.47	22.43	22.75				
15	QPSK	1	74	23.05	23.08	23.07				
15	QPSK	36	0	21.72	21.75	21.71	23	1		
15	QPSK	36	20	21.57	21.54	21.66				
15	QPSK	36	39	21.46	21.48	21.67				
15	QPSK	75	0	21.63	21.68	21.67	23	1		
15	16QAM	1	0	21.95	21.97	22.26				
15	16QAM	1	37	21.68	21.74	21.92				
15	16QAM	1	74	22.40	22.26	22.38	22	2		
15	16QAM	36	0	20.67	20.67	20.93				
15	16QAM	36	20	20.54	20.53	20.65				
15	16QAM	36	39	20.43	20.40	20.56	22	2		
15	16QAM	75	0	20.61	20.59	20.74				
15	64QAM	1	0	20.89	20.90	21.09				
15	64QAM	1	37	20.47	20.60	20.71	22	2		
15	64QAM	1	74	21.11	21.13	21.10				
15	64QAM	36	0	19.73	19.69	19.91				
15	64QAM	36	20	19.58	19.55	19.67	21	3		
15	64QAM	36	39	19.47	19.44	19.62				
15	64QAM	75	0	19.58	19.60	19.73				
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)		
Frequency (MHz)				819	831.5	844				
10	QPSK	1	0	22.46	22.60	22.95	24	0		
10	QPSK	1	25	22.47	22.37	22.67				
10	QPSK	1	49	22.86	22.96	23.00				
10	QPSK	25	0	21.53	21.60	21.85	23	1		
10	QPSK	25	12	21.44	21.50	21.62				
10	QPSK	25	25	21.27	21.25	21.57				
10	QPSK	50	0	21.52	21.49	21.61	23	1		
10	16QAM	1	0	21.85	21.91	22.17				
10	16QAM	1	25	21.59	21.67	21.86				
10	16QAM	1	49	22.29	22.10	22.30	22	2		
10	16QAM	25	0	20.52	20.65	20.82				
10	16QAM	25	12	20.43	20.46	20.46				
10	16QAM	25	25	20.26	20.40	20.39	22	2		
10	16QAM	50	0	20.48	20.57	20.63				
10	64QAM	1	0	20.70	20.81	20.89				
10	64QAM	1	25	20.41	20.60	20.66	22	2		
10	64QAM	1	49	20.91	21.09	21.02				
10	64QAM	25	0	19.66	19.66	19.79				
10	64QAM	25	12	19.52	19.47	19.48	21	3		
10	64QAM	25	25	19.37	19.26	19.52				
10	64QAM	50	0	19.40	19.54	19.57				
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)		
Frequency (MHz)				816.5	831.5	846.5				
5	QPSK	1	0	22.60	22.66	22.94	24	0		
5	QPSK	1	12	22.43	22.42	22.56				
5	QPSK	1	24	22.95	23.06	23.03				
5	QPSK	12	0	21.61	21.53	21.76	23	1		
5	QPSK	12	7	21.43	21.41	21.65				
5	QPSK	12	13	21.32	21.24	21.46				
5	QPSK	25	0	21.56	21.58	21.68	23	1		
5	16QAM	1	0	21.88	21.91	22.07				
5	16QAM	1	12	21.56	21.60	21.76				
5	16QAM	1	24	22.23	22.25	22.36	22	2		
5	16QAM	12	0	20.66	20.58	20.74				
5	16QAM	12	7	20.39	20.48	20.55				
5	16QAM	12	13	20.25	20.33	20.47	22	2		
5	16QAM	25	0	20.44	20.59	20.56				
5	64QAM	1	0	20.82	20.88	21.05				
5	64QAM	1	12	20.40	20.60	20.61	22	2		
5	64QAM	1	24	20.94	21.03	21.03				
5	64QAM	12	0	19.66	19.56	19.80				
5	64QAM	12	7	19.44	19.48	19.50	21	3		
5	64QAM	12	13	19.41	19.31	19.50				
5	64QAM	25	0	19.47	19.50	19.57				
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)		
Frequency (MHz)				815.5	831.5	847.5				
3	QPSK	1	0	22.46	22.62	22.83	24	0		
3	QPSK	1	8	22.45	22.32	22.74				
3	QPSK	1	14	22.95	22.92	22.94				
3	QPSK	8	0	21.56	21.65	21.75	23	1		
3	QPSK	8	4	21.44	21.42	21.50				
3	QPSK	8	7	21.39	21.43	21.40				
3	QPSK	15	0	21.53	21.50	21.60	23	1		
3	16QAM	1	0	21.86	21.90	22.11				
3	16QAM	1	8	21.66	21.58	21.91				
3	16QAM	1	14	22.33	22.26	22.28	22	2		
3	16QAM	8	0	20.53	20.52	20.84				
3	16QAM	8	4	20.46	20.39	20.48				
3	16QAM	8	7	20.32	20.30	20.52	22	2		
3	16QAM	15	0	20.61	20.40	20.69				
3	64QAM	1	0	20.81	20.81	21.00				
3	64QAM	1	8	20.45	20.59	20.59	22	2		
3	64QAM	1	14	21.04	21.07	20.96				
3	64QAM	8	0	19.67	19.53	19.76				
3	64QAM	8	4	19.52	19.37	19.54	21	3		
3	64QAM	8	7	19.36	19.44	19.42				
3	64QAM	15	0	19.39	19.54	19.71				
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)		
Frequency (MHz)				814.7	831.5	848.3				
1.4	QPSK	1	0	22.49	22.61	22.80	24	0		
1.4	QPSK	1	3	22.32	22.32	22.75				
1.4	QPSK	1	5	23.05	23.07	22.88				
1.4	QPSK	3	0	22.42	22.53	22.74	23	1		
1.4	QPSK	3	1	22.29	22.34	22.47				
1.4	QPSK	3	3	22.35	22.26	22.49				
1.4	QPSK	6	0	21.63	21.42	21.67	23	1		
1.4	16QAM	1	0	21.82	21.81	22.22				
1.4	16QAM	1	3	21.60	21.60	21.92				
1.4	16QAM	1	5	22.35	22.11	22.27	23	1		
1.4	16QAM	3	0	21.53	21.36	21.70				
1.4	16QAM	3	1	21.24	21.39	21.38				
1.4	16QAM	3	3	21.13	21.23	21.36	22	2		
1.4	16QAM	6	0	20.50	20.45	20.62				
1.4	64QAM	1	0	20.69	20.94	20.97				
1.4	64QAM	1	3	20.36	20.54	20.62	22	2		
1.4	64QAM	1	5	20.94	21.10	20.95				
1.4	64QAM	3	0	20.49	20.47	20.66				
1.4	64QAM	3	1	20.42	20.34	20.37	21	3		
1.4	64QAM	3	3	20.27	20.29	20.34				
1.4	64QAM	6	0	19.45	19.55	19.69				



Band 66										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dbm)	MPR (db)		
Channel				133012	133322	133512	Tune-up limit (dbm)	MPR (db)		
Frequency (MHz)				1745	1765	1770				
20	QPSK	1	0	22.81	22.67	22.89	24	0		
20	QPSK	1	49	22.58	22.65	22.88				
20	QPSK	1	99	22.73	23.08	23.36				
20	QPSK	50	0	21.57	21.64	21.70	23	1		
20	QPSK	50	24	21.61	21.70	21.74				
20	QPSK	50	50	21.58	21.90	22.08				
20	QPSK	100	0	21.67	21.79	21.97	23	1		
20	16QAM	1	0	21.90	21.84	21.71				
20	16QAM	1	49	21.97	22.12	22.03				
20	16QAM	1	99	22.07	22.08	22.10	22	2		
20	16QAM	50	0	20.56	20.81	20.61				
20	16QAM	50	24	20.61	21.00	20.78				
20	16QAM	50	50	20.58	21.11	20.90	22	2		
20	16QAM	100	0	20.60	20.97	20.73				
20	64QAM	1	0	20.78	20.78	20.61				
20	64QAM	1	49	20.66	20.99	20.87	22	2		
20	64QAM	1	99	20.95	21.08	21.10				
20	64QAM	50	0	19.56	19.79	19.62				
20	64QAM	50	24	19.60	19.97	19.76	21	3		
20	64QAM	50	50	19.56	20.12	19.88				
20	64QAM	100	0	19.58	19.93	19.74				
Channel				133047	133232	133297	Tune-up limit (dbm)	MPR (db)		
Frequency (MHz)				1771.5	1785	1790				
15	QPSK	1	0	22.54	22.99	22.88	24	0		
15	QPSK	1	37	22.36	22.93	22.77				
15	QPSK	1	74	22.64	22.91	23.14				
15	QPSK	36	0	21.70	21.93	21.86	23	1		
15	QPSK	36	20	21.55	21.95	21.90				
15	QPSK	36	39	21.54	22.02	21.93				
15	QPSK	75	0	21.59	21.91	21.87	23	1		
15	16QAM	1	0	22.25	22.22	22.24				
15	16QAM	1	37	21.89	22.13	22.22				
15	16QAM	1	74	21.89	22.23	22.44	22	2		
15	16QAM	36	0	20.64	20.91	20.83				
15	16QAM	36	20	20.52	20.95	20.87				
15	16QAM	36	39	20.52	21.02	20.91	22	2		
15	16QAM	75	0	20.61	20.97	20.88				
15	64QAM	1	0	21.09	21.19	21.04		22	2	
15	64QAM	1	37	20.58	20.91	20.91				
15	64QAM	1	74	20.83	21.21	21.22	21	3		
15	64QAM	36	0	19.69	19.92	19.86				
15	64QAM	36	20	19.55	19.93	19.89				
15	64QAM	36	39	19.55	20.05	19.96	21	3		
15	64QAM	75	0	19.56	19.95	19.88				
Channel				133022	133232	133302	Tune-up limit (dbm)	MPR (db)		
Frequency (MHz)				1771.5	1785	1775				
10	QPSK	1	0	22.62	22.94	23.06	24	0		
10	QPSK	1	25	22.67	23.10	22.96				
10	QPSK	1	49	23.02	23.02	23.17				
10	QPSK	25	0	21.75	22.00	21.97	23	1		
10	QPSK	25	12	21.78	22.10	22.08				
10	QPSK	25	25	21.77	22.30	22.20				
10	QPSK	50	0	21.77	22.10	22.04	23	1		
10	16QAM	1	0	21.69	21.62	21.61				
10	16QAM	1	25	21.98	22.31	22.33				
10	16QAM	1	49	22.31	22.16	22.31	22	2		
10	16QAM	25	0	20.76	21.06	20.97				
10	16QAM	25	12	20.75	21.17	21.07				
10	16QAM	25	25	20.72	21.32	21.14	22	2		
10	16QAM	50	0	20.76	21.15	21.01				
10	64QAM	1	0	20.33	20.58	20.49		22	2	
10	64QAM	1	25	20.75	21.19	21.12				
10	64QAM	1	49	21.21	21.11	21.05	21	3		
10	64QAM	25	0	19.75	20.05	19.98				
10	64QAM	25	12	19.78	20.16	20.07				
10	64QAM	25	25	19.75	20.34	20.22	21	3		
10	64QAM	50	0	19.74	20.13	20.01				
Channel				131997	133232	133267	Tune-up limit (dbm)	MPR (db)		
Frequency (MHz)				1771.5	1785	1777.5				
5	QPSK	1	0	22.66	23.06	23.07	24	0		
5	QPSK	1	12	22.77	23.10	23.04				
5	QPSK	1	24	22.67	23.16	23.01				
5	QPSK	12	0	21.83	22.09	22.16	23	1		
5	QPSK	12	7	21.79	22.05	22.11				
5	QPSK	12	13	21.69	22.05	22.09				
5	QPSK	25	0	21.82	22.10	22.10	23	1		
5	16QAM	1	0	22.31	22.45	22.40				
5	16QAM	1	12	22.02	22.27	22.36				
5	16QAM	1	24	22.05	22.47	22.37	22	2		
5	16QAM	12	0	20.85	21.18	21.17				
5	16QAM	12	7	20.81	21.13	21.12				
5	16QAM	12	13	20.69	21.14	21.10	22	2		
5	16QAM	25	0	20.82	21.13	21.12				
5	64QAM	1	0	21.12	21.35	21.29		22	2	
5	64QAM	1	12	20.90	21.24	21.18				
5	64QAM	1	24	20.84	21.32	21.28	21	3		
5	64QAM	12	0	19.87	20.20	20.19				
5	64QAM	12	7	19.85	20.16	20.12				
5	64QAM	12	13	19.72	20.12	20.08	21	3		
5	64QAM	25	0	19.83	20.14	20.11				
Channel				131987	133232	133267	Tune-up limit (dbm)	MPR (db)		
Frequency (MHz)				1771.5	1785	1777.5				
3	QPSK	1	0	22.75	23.12	23.11	24	0		
3	QPSK	1	8	22.76	23.10	23.06				
3	QPSK	1	14	22.70	23.07	23.04				
3	QPSK	8	0	21.82	22.10	22.11	23	1		
3	QPSK	8	4	21.81	22.11	22.12				
3	QPSK	8	7	21.76	22.07	22.09				
3	QPSK	15	0	21.77	22.05	22.06	23	1		
3	16QAM	1	0	22.16	22.42	22.45				
3	16QAM	1	8	22.16	22.40	22.43				
3	16QAM	1	14	22.11	22.36	22.43	22	2		
3	16QAM	8	0	20.83	21.13	21.14				
3	16QAM	8	4	20.87	21.16	21.17				
3	16QAM	8	7	20.81	21.10	21.13	22	2		
3	16QAM	15	0	20.80	21.12	21.11				
3	64QAM	1	0	20.95	21.29	21.31		22	2	
3	64QAM	1	8	20.95	21.24	21.26				
3	64QAM	1	14	20.89	21.25	21.20				
3	64QAM	8	0	19.86	20.17	20.13	21	3		
3	64QAM	8	4	19.85	20.16	20.18				
3	64QAM	8	7	19.80	20.14	20.13				
3	64QAM	15	0	19.79	20.11	20.10	21	3		
Channel				131979	133232	133265				
Frequency (MHz)				1770.7	1785	1773.3				
1.4	QPSK	1	0	22.92	23.05	23.04	24	0		
1.4	QPSK	1	3	22.74	23.09	23.11				
1.4	QPSK	1	5	22.75	23.05	23.04				
1.4	QPSK	3	0	22.79	23.09	23.07	23	1		
1.4	QPSK	3	1	22.79	23.12	23.17				
1.4	QPSK	3	3	22.74	23.11	23.12				
1.4	QPSK	6	0	21.69	21.97	22.02	23	1		
1.4	16QAM	1	0	22.08	22.35	22.38				
1.4	16QAM	1	3	22.14	22.37	22.45		23	1	
1.4	16QAM	1	5	22.05	22.33	22.39				
1.4	16QAM	3	0	21.75	22.02	22.11				
1.4	16QAM	3	1	21.82	22.04	22.17	22	2		
1.4	16QAM	3	3	21.76	22.25	22.38				
1.4	64QAM	1	0	20.89	21.21	21.24				
1.4	64QAM	1	3	20.89	21.20	21.23	22	2		
1.4	64QAM	1	5	20.87	21.22	21.23				
1.4	64QAM	3	0	20.84	21.19	21.18				
1.4	64QAM	3	1	20.92	21.22	21.25	22	2		
1.4	64QAM	3	3	20.83	21.18	21.16				
1.4	64QAM	6	0	19.74	20.05	20.09				

Band 38(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. Freq.	Power Midle Ch. Freq.	Power High Ch. Freq.	Tune-up limit (dbm)	MPR (db)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	22.92	22.76	22.85	24	0	
20	QPSK	1	49	22.24	22.88	22.81			
20	QPSK	1	99	22.19	22.88	22.82			
20	QPSK	50	0	22.12	22.04	21.82			
20	QPSK	50	24	22.26	22.10	22.11	23	1	
20	QPSK	50	50	22.25	21.11	22.07			
20	QPSK	100	0	21.97	21.81	22.11			
20	16QAM	1	0	21.95	21.69	21.76			
20	16QAM	1	49	22.07	21.90	21.81	23	1	
20	16QAM	1	99	22.01	21.81	21.96			
20	16QAM	50	0	21.16	21.10	21.11			
20	16QAM	50	24	21.30	20.91	20.93			
20	16QAM	50	50	21.12	20.92	21.06	22	2	
20	16QAM	100	0	20.93	20.98	21.09			
20	64QAM	1	0	20.70	20.50	20.55			
20	64QAM	1	49	20.99	20.47	20.49			
20	64QAM	1	99	20.93	20.55	20.52	21	3	
20	64QAM	50	0	19.81	19.72	19.71			
20	64QAM	50	24	20.06	19.74	19.87			
20	64QAM	50	50	20.05	19.74	19.89			
20	64QAM	100	0	20.15	20.02	20.05			
Channel									
Frequency (MHz)									
15	QPSK	1	0	22.825	22.655	22.775	24	0	
15	QPSK	1	37	22.79	22.42	22.74			
15	QPSK	1	74	23.17	22.96	23.07			
15	QPSK	36	0	22.05	21.92	22.03			
15	QPSK	36	20	22.22	22.02	22.09	23	1	
15	QPSK	36	39	22.19	22.02	22.06			
15	QPSK	75	0	22.17	21.96	22.05			
15	16QAM	1	0	21.96	21.86	21.88			
15	16QAM	1	37	22.17	21.87	21.70	23	1	
15	16QAM	1	74	22.17	21.85	22.01			
15	16QAM	36	0	21.05	20.92	21.05			
15	16QAM	36	20	21.02	20.99	21.05			
15	16QAM	36	39	21.70	21.00	21.01	22	2	
15	16QAM	75	0	21.16	20.99	21.01			
15	64QAM	1	0	20.69	20.56	20.69			
15	64QAM	1	37	20.70	20.40	20.51			
15	64QAM	1	74	20.96	20.64	20.71	22	2	
15	64QAM	36	0	20.17	20.06	20.12			
15	64QAM	36	20	20.34	20.13	20.18			
15	64QAM	36	39	20.34	20.13	20.18			
15	64QAM	75	0	20.25	20.07	20.10	21	3	
15	64QAM	75	25	20.25	20.07	20.16			
15	64QAM	100	0	20.25	20.07	20.16			
15	64QAM	100	25	20.25	20.07	20.16			
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.19	22.98	23.13	24	0	
10	QPSK	1	25	23.04	23.03	23.25			
10	QPSK	1	49	23.28	23.07	23.22			
10	QPSK	25	0	22.38	22.22	22.24			
10	QPSK	25	12	22.31	22.01	22.01	23	1	
10	QPSK	25	25	22.47	22.18	22.26			
10	QPSK	50	0	21.97	21.88	21.86			
10	16QAM	1	0	22.40	22.22	22.26			
10	16QAM	1	25	22.35	22.07	22.05	23	1	
10	16QAM	1	49	22.48	22.16	22.19			
10	16QAM	25	0	21.32	20.90	20.97			
10	16QAM	25	12	21.03	20.98	21.03			
10	16QAM	25	25	21.20	21.02	21.09	22	2	
10	16QAM	50	0	21.12	20.83	21.26			
10	64QAM	1	25	21.24	20.95	21.21			
10	64QAM	1	49	20.93	20.88	20.91			
10	64QAM	25	0	20.34	19.92	20.23	21	3	
10	64QAM	25	12	20.07	20.02	20.16			
10	64QAM	25	25	20.43	20.17	20.27			
10	64QAM	50	0	20.12	19.86	20.03			
Channel									
Frequency (MHz)									
5	QPSK	1	0	23.14	23.05	23.03	24	0	
5	QPSK	1	12	23.03	22.95	22.86			
5	QPSK	1	24	23.14	22.88	23.06			
5	QPSK	12	0	22.39	22.02	22.15			
5	QPSK	12	7	22.32	22.07	22.17	23	1	
5	QPSK	12	13	21.59	22.00	21.59			
5	QPSK	25	0	22.04	21.90	22.04			
5	16QAM	1	0	22.29	22.11	22.25			
5	16QAM	1	12	22.10	21.85	22.20	22	2	
5	16QAM	1	24	22.06	22.06	22.05			
5	16QAM	12	0	21.07	21.16	21.14			
5	16QAM	12	7	21.09	21.06	21.10			
5	16QAM	12	13	21.08	20.99	21.06	22	2	
5	16QAM	25	0	21.38	21.06	21.16			
5	64QAM	1	0	21.02	20.64	20.88			
5	64QAM	1	12	20.97	20.76	20.79			
5	64QAM	1	24	21.05	20.80	21.03	22	2	
5	64QAM	12	0	20.44	20.02	20.17			
5	64QAM	12	7	20.15	20.06	20.04			
5	64QAM	12	13	20.15	20.06	20.09			
5	64QAM	25	0	20.40	20.02	20.14	21	3	

Band 41 (2.6G Band)										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Co. / Ch. Freq.	Power Low Mid Co. / Ch. Freq.	Power Mid Co. / Ch. Freq.	Power High Mid Co. / Ch. Freq.	Power High Co. / Ch. Freq.	Tune-up limit (dbm)	MPR (db)
Channel										
Frequency (MHz)										
20	QPSK	1	0	2505	2505	2503	2505	2505	25	0
20	QPSK	1	49	2281	2282	2286	2282	2282		
20	QPSK	1	99	2327	2327	2327	2327	2327	24	1
20	QPSK	50	0	2285	2285	2288	2276	2302		
20	QPSK	50	24	2280	2302	2286	2280	2306	24	1
20	QPSK	50	50	2276	2293	2277	2280	2285		
20	QPSK	100	0	2276	2301	2277	2280	2285	24	1
20	16QAM	1	0	2272	2281	2269	2236	2289		
20	16QAM	1	49	2291	2287	2274	2276	2289	24	1
20	16QAM	1	99	2234	2221	2214	2222	2281		
20	16QAM	50	0	2187	2206	2170	2180	2206	23	2
20	16QAM	50	24	2183	2210	2190	2184	2202		
20	16QAM	50	50	2181	2186	2180	2183	2186	23	2
20	16QAM	100	0	2173	2192	2171	2177	2202		
20	64QAM	1	0	2136	2149	2107	2111	2134	23	2
20	64QAM	1	49	2146	2182	2139	2144	2182		
20	64QAM	1	99	2123	2107	2115	2121	2141	22	3
20	64QAM	50	0	2080	2102	2065	2075	2102		
20	64QAM	50	24	2087	2103	2085	2086	2106	22	3
20	64QAM	50	50	2074	2085	2076	2074	2094		
20	64QAM	100	0	2076	2096	2072	2072	2093	20	4
Channel										
Frequency (MHz)										
15	QPSK	1	0	2502.5	2503.3	2502	2503.8	2503.5	Tune-up limit (dbm)	MPR (db)
15	QPSK	1	37	2330	2340	2320	2334	2338	25	0
15	QPSK	1	74	2330	2334	2333	2330	2333		
15	QPSK	36	0	2286	2319	2271	2272	2297	24	1
15	QPSK	36	20	2289	2318	2290	2290	2299		
15	QPSK	36	39	2298	2318	2295	2297	2296	24	1
15	QPSK	75	0	2283	2312	2279	2277	2298		
15	16QAM	1	0	2248	2248	2218	2202	2234	24	1
15	16QAM	1	37	2248	2239	2223	2232	2265		
15	16QAM	1	74	2217	2188	2205	2209	2238	23	2
15	16QAM	36	0	2180	2212	2169	2168	2199		
15	16QAM	36	20	2183	2212	2181	2190	2201	23	2
15	16QAM	36	39	2191	2212	2189	2197	2209		
15	16QAM	75	0	2182	2212	2182	2177	2200	22	3
15	16QAM	75	20	2189	2128	2123	2105	2151		
15	64QAM	1	37	2134	2124	2129	2107	2122	23	2
15	64QAM	1	74	2138	2125	2126	2102	2103		
15	64QAM	36	0	2070	2102	2062	2081	2096	22	3
15	64QAM	36	20	2082	2106	2084	2085	2095		
15	64QAM	36	39	2086	2105	2087	2084	2093	22	3
15	64QAM	75	0	2075	2104	2076	2079	2095		
Channel										
Frequency (MHz)										
10	QPSK	1	0	2504	2504	2503	2505	2505	Tune-up limit (dbm)	MPR (db)
10	QPSK	1	25	2376	2384	2376	2380	2386	25	0
10	QPSK	1	49	2276	2286	2276	2279	2284		
10	QPSK	25	0	2278	2278	2280	2285	2295	24	1
10	QPSK	25	12	2292	2319	2299	2295	2305		
10	QPSK	25	12	2290	2319	2295	2294	2302	24	1
10	QPSK	50	0	2283	2312	2287	2282	2303		
10	16QAM	1	0	2291	2306	2272	2286	2308	24	1
10	16QAM	1	25	2292	2297	2295	2293	2304		
10	16QAM	1	49	2288	2303	2288	2292	2303	23	2
10	16QAM	25	0	2180	2223	2195	2197	2207		
10	16QAM	25	12	2192	2220	2201	2200	2207	23	2
10	16QAM	25	26	2190	2214	2197	2198	2205		
10	16QAM	50	0	2183	2214	2195	2194	2202	23	2
10	64QAM	1	0	2146	2165	2131	2142	2170		
10	64QAM	1	25	2135	2163	2145	2147	2160	23	2
10	64QAM	1	49	2143	2160	2145	2146	2163		
10	64QAM	25	0	2080	2125	2087	2094	2101	22	3
10	64QAM	25	12	2090	2119	2100	2107	2107		
10	64QAM	25	26	2089	2116	2099	2102	2105	22	3
10	64QAM	50	0	2078	2112	2099	2091	2101		
Channel										
Frequency (MHz)										
5	QPSK	1	0	2503.7	2504.4	2503	2505	2505	Tune-up limit (dbm)	MPR (db)
5	QPSK	1	12	2359	2390	2332	2387	2334	25	0
5	QPSK	1	24	2363	2388	2360	2391	2385		
5	QPSK	12	0	2287	2300	2274	2273	2282	24	1
5	QPSK	12	7	2304	2302	2275	2278	2280		
5	QPSK	12	13	2297	2290	2272	2268	2280	24	1
5	QPSK	25	0	2288	2305	2280	2283	2299		
5	16QAM	1	0	2301	2324	2293	2293	2299	23	2
5	16QAM	1	12	2323	2318	2280	2298	2294		
5	16QAM	1	24	2299	2301	2285	2292	2296	23	2
5	16QAM	12	0	2178	2211	2187	2183	2197		
5	16QAM	12	7	2180	2192	2168	2167	2181	23	2
5	16QAM	12	13	2175	2203	2181	2180	2192		
5	64QAM	1	0	2177	2200	2179	2179	2190	22	3
5	64QAM	1	5	2159	2190	2164	2170	2191		
5	64QAM	1	12	2161	2178	2143	2140	2148	22	3
5	64QAM	1	24	2148	2165	2165	2165	2176		
5	64QAM	12	0	2104	2146	2117	2115	2127	22	3
5	64QAM	12	7	2101	2129	2109	2108	2119		
5	64QAM	12	13	2082	2130	2109	2108	2119	22	3
5	64QAM	25	0	2065	2128	2107	2106	2106		



Reduced Power Mode for P-Sensor On

GSM1900	Buried Average Power (dBm)			Tune-up Limit (dBm)	Buried Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1860	1909.8	(dBm)	1850.2	1860	1909.8	(dBm)
GSM 1 Tx slot	22.89	23.00	22.76	24.00	13.99	14.00	13.76	15.00
GPRS 1 Tx slot	22.97	22.95	22.70	24.00	13.97	13.95	13.70	15.00
GPRS 3 Tx slots	20.06	21.05	20.84	22.50	14.98	15.05	14.94	16.50
GPRS 3 Tx slots	18.67	18.64	18.76	20.00	14.41	14.38	14.50	15.74
GPRS 8 Tx slots	16.67	16.70	16.65	18.00	13.67	13.70	13.65	15.00
EDGE 1 Tx slot	18.69	18.81	18.55	20.00	9.69	9.81	9.55	11.00
EDGE 2 Tx slots	18.52	18.75	18.61	18.00	10.52	10.75	10.61	12.00
EDGE 3 Tx slots	14.47	14.41	14.36	15.50	10.21	10.15	10.10	11.24
EDGE 4 Tx slots	13.54	13.44	13.41	14.50	10.54	10.44	10.41	11.50

Band	WCDMA 6			Tune-up Limit (dBm)	WCDMA 4			Tune-up Limit (dBm)	WCDMA 5			Tune-up Limit (dBm)	
	5262	5400	5538		4312	4413	4513		4152	4182	4233		
Rx Channel	5662	5690	5638	(dBm)	1537	1538	1733	(dBm)	4327	4409	4458	(dBm)	
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		526.4	836.4	846.6		
3GPP Rel 99	AMR 12.2Kbps	14.30	14.34	14.26	15.50	13.44	13.36	13.53	15.50	21.87	21.86	22.08	23.00
3GPP Rel 99	RMC 12.2Kbps	14.31	14.45	14.42	15.50	14.05	13.88	14.09	15.50	21.88	21.89	22.15	23.00
3GPP Rel 6	HSDPA Subtest-1	13.14	13.14	13.12	14.50	12.82	12.79	12.96	14.50	20.95	20.93	21.12	22.00
3GPP Rel 6	HSDPA Subtest-2	13.16	13.16	13.12	14.50	12.85	12.88	12.98	14.50	20.94	20.98	21.15	22.00
3GPP Rel 6	HSDPA Subtest-3	12.31	12.65	12.57	14.00	12.37	12.32	12.58	14.00	20.46	20.44	20.68	21.50
3GPP Rel 6	HSDPA Subtest-4	12.64	12.67	12.62	14.00	12.26	12.36	12.01	14.00	20.42	20.47	20.25	21.50
3GPP Rel 6	DC-HSDPA Subtest-1	13.02	13.07	12.90	14.50	12.74	12.79	12.89	14.50	20.98	20.75	20.99	22.00
3GPP Rel 6	DC-HSDPA Subtest-2	13.09	12.97	13.09	14.50	12.79	12.83	12.88	14.50	20.85	20.79	21.12	22.00
3GPP Rel 6	DC-HSDPA Subtest-3	12.19	12.57	12.53	14.00	12.37	12.20	12.54	14.00	20.43	20.28	20.62	21.50
3GPP Rel 6	DC-HSDPA Subtest-4	12.63	12.63	12.52	14.00	12.06	12.31	12.00	14.00	20.22	20.33	20.06	21.50
3GPP Rel 6	HSPA Subtest-1	13.16	13.17	13.12	14.50	12.79	12.86	12.64	14.50	20.89	20.89	21.03	22.00
3GPP Rel 6	HSPA Subtest-2	11.15	11.16	11.15	12.50	10.67	10.66	10.69	12.50	18.83	18.88	18.99	20.00
3GPP Rel 6	HSPA Subtest-3	12.17	12.14	12.09	13.50	11.76	11.79	11.79	13.50	19.87	19.87	20.00	21.00
3GPP Rel 6	HSPA Subtest-4	11.15	11.18	11.16	12.50	10.78	10.80	10.69	12.50	18.85	18.86	19.04	20.00
3GPP Rel 6	HSPA Subtest-5	13.20	13.20	13.10	14.50	12.80	12.80	12.90	14.50	20.86	20.86	21.08	22.00

Band	CDMA BC1			Tune-up Limit (dBm)
	26	800	1175	
TX Channel	1851.25	1890	1908.75	(dBm)
RC1 SO55	16.39	16.42	16.33	17.00
RC1 SO65	16.21	16.31	16.17	17.00
RC3 SO32 (F+SOH)	16.31	16.39	16.22	17.00
RC3 SO32 (F+SOH)	16.29	16.26	16.19	17.00
RTAP 153.6Kbps	15.59	15.68	15.56	17.00
RETAP 4968Hz	15.61	15.61	15.58	17.00

Band 2 (1800MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Channel	Power Low Ch. Freq.	Power Middle Ch. Freq.	Power High Ch. Freq.	Turn-up limit (dBm)	MPR (dB)
Channel									
Frequency (MHz)									
20	QPSK	1	0	14.97	14.85	14.89			
20	QPSK	1	49	14.66	14.70	14.59			
20	QPSK	1	99	14.43	14.53	14.41			
20	QPSK	50	0	14.88	14.88	14.88			
20	QPSK	50	24	14.84	14.84	14.81			
20	QPSK	50	50	14.63	14.75	14.74			
20	QPSK	100	0	14.77	14.77	14.62			
20	16QAM	1	0	15.54	15.36	15.36			
20	16QAM	1	49	15.27	15.22	15.15			
20	16QAM	1	99	14.90	14.97	14.92			
20	16QAM	50	0	14.99	14.91	14.92			
20	16QAM	50	24	14.86	14.85	14.91			
20	16QAM	50	50	14.63	14.72	14.75			
20	16QAM	100	0	14.79	14.77	14.82			
20	64QAM	1	0	15.15	15.11	14.99			
20	64QAM	1	49	15.00	14.93	14.91			
20	64QAM	1	99	14.70	14.74	14.68			
20	64QAM	50	0	14.94	14.93	14.89			
20	64QAM	50	24	14.83	14.83	14.89			
20	64QAM	50	50	14.62	14.75	14.72			
20	64QAM	100	0	14.82	14.78	14.80			
Channel									
Frequency (MHz)									
15	QPSK	1	0	15.04	15.10	15.03			
15	QPSK	1	37	14.42	14.51	14.49			
15	QPSK	1	74	14.95	14.97	15.02			
15	QPSK	36	0	14.90	14.87	14.87			
15	QPSK	36	20	14.81	14.84	14.88			
15	QPSK	36	39	14.78	14.83	14.87			
15	QPSK	75	0	14.81	14.76	14.87			
15	16QAM	1	0	15.54	15.51	15.55			
15	16QAM	1	37	15.40	15.34	15.32			
15	16QAM	1	74	15.37	15.40	15.35			
15	16QAM	36	0	14.91	14.89	14.85			
15	16QAM	36	20	14.86	14.81	14.98			
15	16QAM	36	39	14.77	14.82	14.84			
15	16QAM	75	0	14.80	14.79	14.87			
15	64QAM	1	0	15.28	15.26	15.29			
15	64QAM	1	37	14.98	14.96	14.89			
15	64QAM	1	74	15.05	15.27	15.05			
15	64QAM	36	0	14.92	14.87	14.89			
15	64QAM	36	20	14.74	14.80	14.87			
15	64QAM	36	39	14.79	14.81	14.80			
15	64QAM	75	0	14.79	14.79	14.89			
Channel									
Frequency (MHz)									
10	QPSK	1	0	15.17	15.07	15.02			
10	QPSK	1	25	14.89	14.86	14.93			
10	QPSK	1	49	14.97	14.86	15.02			
10	QPSK	25	0	15.11	14.94	15.02			
10	QPSK	25	12	15.07	14.96	15.03			
10	QPSK	25	25	15.04	15.07	15.05			
10	QPSK	50	0	15.06	14.98	15.03			
10	16QAM	1	0	15.52	15.50	15.45			
10	16QAM	1	25	15.35	15.38	15.39			
10	16QAM	1	49	15.43	15.37	15.41			
10	16QAM	25	0	15.02	14.93	15.02			
10	16QAM	25	12	15.07	14.95	15.05			
10	16QAM	25	25	15.03	14.88	15.01			
10	16QAM	50	0	15.07	14.93	14.98			
10	64QAM	1	0	15.29	15.34	15.20			
10	64QAM	1	25	15.27	15.21	15.12			
10	64QAM	1	49	15.29	15.28	15.21			
10	64QAM	25	0	15.08	14.91	15.03			
10	64QAM	25	12	15.09	14.95	15.02			
10	64QAM	25	25	15.01	14.92	15.07			
10	64QAM	50	0	15.07	14.95	14.96			
Channel									
Frequency (MHz)									
5	QPSK	1	0	15.15	15.06	15.14			
5	QPSK	1	12	14.87	14.89	14.84			
5	QPSK	1	24	14.97	14.89	14.95			
5	QPSK	12	0	15.07	15.06	15.06			
5	QPSK	12	7	15.11	15.02	15.05			
5	QPSK	12	13	15.07	14.93	15.03			
5	QPSK	25	0	15.06	15.00	15.08			
5	16QAM	1	0	15.45	15.42	15.41			
5	16QAM	1	12	15.35	15.38	15.40			
5	16QAM	1	24	15.33	15.22	15.31			
5	16QAM	12	0	15.08	15.10	15.09			
5	16QAM	12	7	15.16	14.99	15.07			
5	16QAM	12	13	15.06	14.99	15.02			
5	16QAM	25	0	15.07	14.98	15.01			
5	64QAM	1	0	15.33	15.26	15.32			
5	64QAM	1	12	15.20	15.11	15.15			
5	64QAM	1	24	15.27	15.15	15.13			
5	64QAM	12	0	15.09	15.03	15.08			
5	64QAM	12	7	15.10	14.99	15.05			
5	64QAM	12	13	15.05	14.96	15.04			
5	64QAM	25	0	15.06	14.96	15.07			
Channel									
Frequency (MHz)									
3	QPSK	1	0	15.02	14.96	15.04			
3	QPSK	1	8	14.90	14.92	14.96			
3	QPSK	1	14	14.86	14.83	14.89			
3	QPSK	8	0	14.97	14.94	15.00			
3	QPSK	8	4	15.03	14.96	15.00			
3	QPSK	8	7	14.93	14.89	14.94			
3	QPSK	15	0	14.97	14.94	14.97			
3	16QAM	1	0	15.26	15.20	15.30			
3	16QAM	1	8	15.30	15.21	15.26			
3	16QAM	1	14	15.06	15.15	15.18			
3	16QAM	8	0	15.05	15.04	15.07			
3	16QAM	8	4	15.09	15.04	15.06			
3	16QAM	8	7	15.01	15.01	15.02			
3	16QAM	15	0	15.01	14.95	14.99			
3	64QAM	1	0	15.07	15.18	15.23			
3	64QAM	1	8	15.15	15.14	15.11			
3	64QAM	1	14	15.01	14.97	15.11			
3	64QAM	8	0	15.01	15.00	15.07			
3	64QAM	8	4	15.05	14.98	15.02			
3	64QAM	8	7	14.99	14.98	14.96			
3	64QAM	15	0	14.96	14.90	15.00			
Channel									
Frequency (MHz)									
1.4	QPSK	1	0	14.94	14.92	14.95			
1.4	QPSK	1	3	14.99	14.97	15.02			
1.4	QPSK	1	5	14.95	14.85	14.93			
1.4	QPSK	3	0	14.85	14.89	14.92			
1.4	QPSK	3	1	15.00	15.01	15.00			
1.4	QPSK	3	3	14.93	14.87	14.93			
1.4	QPSK	6	0	14.90	14.88	14.95			
1.4	16QAM	1	0	15.37	15.29	15.22			
1.4	16QAM	1	3	15.23	15.24	15.26			
1.4	16QAM	1	5	15.22	15.21	15.23			
1.4	16QAM	3	0	14.98	14.98	15.01			
1.4	16QAM	3	1	15.04	15.04	15.05			
1.4	16QAM	3	3	15.00	14.90	14.96			
1.4	16QAM	6	0	14.94	14.99	15.00			
1.4	64QAM	1	0	15.03	15.09	15.17			
1.4	64QAM	1	3	15.02	15.05	15.27			
1.4	64QAM	1	5	15.06	15.10	15.09			
1.4	64QAM	3	0	15.01	15.05	15.08			
1.4	64QAM	3	1	15.08	15.12	15.11			
1.4	64QAM	3	3	15.05	15.00	15.02			
1.4	64QAM	6	0	14.96	14.97	14.96			

Band 4 (AWS Band) Part 27L (only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Channel	Power Low Ch. Freq.	Power Middle Ch. Freq.	Power High Ch. Freq.	Turn-up limit (dBm)	MPR (dB)
Channel									
Frequency (MHz)									
20	QPSK	1	0	15.30	15.37	15.41			
20	QPSK	1	49	15.20	15.35	15.56			
20	QPSK	1	99	15.14	15.65	15.94			
20	QPSK	50	0	15.38	15.30	15.23			
20	QPSK	50	24	15.34	15.40	15.80			
20	QPSK	50	50	15.19	15.47	15.71			
20	QPSK	100	0	15.01	15.45	15.94			
20	16QAM	1	0	15.39	15.32	15.44			
20	16QAM	1	49	15.31	15.60	15.88			
20	16QAM	1	99	15.24	15.63	15.88			
20	16QAM	50	0	14.96	15.07	15.21			
20	16QAM	50	24	14.96	15.08	15.32			
20	16QAM	50	50	14.80	15.03	15.39			
20	16QAM	100	0	14.86	15.06	15.29			
20	64QAM	1	0	15.13	15.12	15.29			
20	64QAM	1	49	15.02	15.30	15.42			

Band 25 (1900MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. Freq.	Power Mode Ch. Freq.	Power High Ch. Freq.	Tune-up limt (dBm)	MPR (dB)	
Channel				26140	26340	26590	Tune-up limt (dBm)	MPR (dB)	
Frequency (MHz)				1865	1880	1905			
20	QPSK	1	0	14.37	14.36	14.83	16	0	
20	QPSK	1	49	14.36	14.33	14.35			
20	QPSK	1	99	14.35	14.42	14.33	16	0	
20	QPSK	50	0	14.47	14.34	14.51			
20	QPSK	50	24	14.49	14.37	14.45	16	0	
20	QPSK	50	50	14.41	14.30	14.39			
20	QPSK	100	0	14.40	14.33	14.51	16	0	
20	16QAM	1	0	14.81	14.69	14.81			
20	16QAM	1	49	14.81	14.70	14.79	16	0	
20	16QAM	1	99	14.28	14.41	14.24			
20	16QAM	50	0	14.47	14.35	14.47	16	0	
20	16QAM	50	24	14.46	14.38	14.48			
20	16QAM	50	50	14.42	14.31	14.43	16	0	
20	16QAM	100	0	14.41	14.31	14.50			
20	64QAM	1	0	14.71	14.53	14.60	16	0	
20	64QAM	1	49	14.54	14.38	14.50			
20	64QAM	1	99	14.22	14.15	14.38	16	0	
20	64QAM	50	0	14.50	14.37	14.48			
20	64QAM	50	24	14.48	14.38	14.46	16	0	
20	64QAM	50	50	14.37	14.29	14.44			
20	64QAM	100	0	14.41	14.32	14.44	Tune-up limt (dBm)	MPR (dB)	
Channel				26115	26340	26515			
Frequency (MHz)				1867.5	1880	1897.5	Tune-up limt (dBm)	MPR (dB)	
15	QPSK	1	0	14.30	14.28	14.27			
15	QPSK	1	37	14.27	14.23	14.23	16	0	
15	QPSK	1	74	14.43	14.41	14.28			
15	QPSK	36	0	14.52	14.44	14.53	16	0	
15	QPSK	36	20	14.54	14.44	14.52			
15	QPSK	36	39	14.58	14.50	14.58	16	0	
15	QPSK	75	0	14.55	14.44	14.59			
15	16QAM	1	0	14.77	14.73	14.73	16	0	
15	16QAM	1	37	14.75	14.76	14.75			
15	16QAM	1	74	14.75	14.76	14.25	16	0	
15	16QAM	36	0	14.55	14.41	14.50			
15	16QAM	36	20	14.56	14.43	14.52	16	0	
15	16QAM	36	39	14.58	14.50	14.59			
15	16QAM	75	0	14.51	14.43	14.56	16	0	
15	64QAM	1	0	14.70	14.62	14.69			
15	64QAM	1	37	14.68	14.46	14.56	16	0	
15	64QAM	1	74	14.60	14.53	14.35			
15	64QAM	36	0	14.53	14.43	14.57	16	0	
15	64QAM	36	20	14.54	14.41	14.53			
15	64QAM	36	39	14.58	14.49	14.65	16	0	
15	64QAM	75	0	14.50	14.43	14.61			
Channel				26590	26340	26540	Tune-up limt (dBm)	MPR (dB)	
Frequency (MHz)				1855	1880	1910			
10	QPSK	1	0	14.40	14.41	14.48	16	0	
10	QPSK	1	25	14.34	14.42	14.47			
10	QPSK	1	49	14.57	14.59	14.44	16	0	
10	QPSK	25	0	14.46	14.56	14.55			
10	QPSK	25	12	14.50	14.57	14.53	16	0	
10	QPSK	25	25	14.47	14.54	14.60			
10	QPSK	50	0	14.49	14.58	14.59	16	0	
10	16QAM	1	0	14.74	14.83	14.81			
10	16QAM	1	25	14.53	14.65	14.62	16	0	
10	16QAM	1	49	14.75	14.83	14.53			
10	16QAM	25	0	14.47	14.56	14.53	16	0	
10	16QAM	25	12	14.47	14.55	14.53			
10	16QAM	25	25	14.45	14.56	14.59	16	0	
10	16QAM	50	0	14.48	14.58	14.59			
10	64QAM	1	0	14.59	14.62	14.65	16	0	
10	64QAM	1	25	14.35	14.37	14.42			
10	64QAM	1	49	14.61	14.65	14.25	16	0	
10	64QAM	25	0	14.45	14.57	14.63			
10	64QAM	25	12	14.47	14.60	14.56	16	0	
10	64QAM	25	25	14.47	14.58	14.64			
10	64QAM	50	0	14.48	14.56	14.59	Tune-up limt (dBm)	MPR (dB)	
Channel				26055	26340	26605			
Frequency (MHz)				1852.5	1880	1912.5	Tune-up limt (dBm)	MPR (dB)	
5	QPSK	1	0	14.30	14.41	14.49			
5	QPSK	1	12	14.35	14.49	14.52	16	0	
5	QPSK	1	24	14.38	14.48	14.44			
5	QPSK	12	0	14.48	14.57	14.57	16	0	
5	QPSK	12	7	14.45	14.56	14.56			
5	QPSK	12	13	14.43	14.51	14.51	16	0	
5	QPSK	25	0	14.48	14.55	14.54			
5	16QAM	1	0	14.63	14.75	14.77	16	0	
5	16QAM	1	12	14.47	14.57	14.56			
5	16QAM	1	24	14.54	14.60	14.47	16	0	
5	16QAM	12	0	14.52	14.61	14.59			
5	16QAM	12	7	14.48	14.53	14.57	16	0	
5	16QAM	12	13	14.44	14.54	14.54			
5	16QAM	25	0	14.47	14.54	14.57	16	0	
5	64QAM	1	0	14.65	14.79	14.78			
5	64QAM	1	12	14.53	14.57	14.65	16	0	
5	64QAM	1	24	14.55	14.63	14.57			
5	64QAM	12	0	14.51	14.60	14.63	16	0	
5	64QAM	12	7	14.47	14.56	14.60			
5	64QAM	12	13	14.45	14.57	14.56	16	0	
5	64QAM	25	0	14.47	14.55	14.57			
Channel				26605	26340	26675	Tune-up limt (dBm)	MPR (dB)	
Frequency (MHz)				1851.5	1880	1913.5			
3	QPSK	1	0	14.40	14.48	14.47	16	0	
3	QPSK	1	8	14.39	14.49	14.48			
3	QPSK	1	14	14.34	14.44	14.48	16	0	
3	QPSK	8	0	14.44	14.52	14.53			
3	QPSK	8	4	14.44	14.55	14.57	16	0	
3	QPSK	8	7	14.40	14.51	14.54			
3	QPSK	15	0	14.40	14.52	14.53	16	0	
3	16QAM	1	0	14.42	14.70	14.68			
3	16QAM	1	8	14.58	14.69	14.64	16	0	
3	16QAM	1	14	14.53	14.58	14.62			
3	16QAM	8	0	14.47	14.56	14.55	16	0	
3	16QAM	8	4	14.46	14.59	14.59			
3	16QAM	8	7	14.44	14.54	14.54	16	0	
3	16QAM	15	0	14.43	14.54	14.57			
3	64QAM	1	0	14.62	14.59	14.71	16	0	
3	64QAM	1	8	14.56	14.65	14.68			
3	64QAM	1	14	14.57	14.59	14.62	16	0	
3	64QAM	8	0	14.46	14.56	14.56			
3	64QAM	8	4	14.46	14.67	14.57	16	0	
3	64QAM	8	7	14.40	14.51	14.56			
3	64QAM	15	0	14.44	14.54	14.53	Tune-up limt (dBm)	MPR (dB)	
Channel				26047	26340	26685			
Frequency (MHz)				1850.7	1880	1914.3	Tune-up limt (dBm)	MPR (dB)	
1.4	QPSK	1	0	14.35	14.50	14.45			
1.4	QPSK	1	3	14.38	14.52	14.48	16	0	
1.4	QPSK	1	5	14.37	14.44	14.44			
1.4	QPSK	3	0	14.37	14.46	14.47	16	0	
1.4	QPSK	3	1	14.42	14.53	14.50			
1.4	QPSK	3	3	14.36	14.49	14.45	16	0	
1.4	QPSK	3	5	14.38	14.42	14.45			
1.4	QPSK	3	7	14.68	14.72	14.77	16	0	
1.4	16QAM	1	3	14.49	14.52	14.65			
1.4	16QAM	1	5	14.39	14.49	14.61	16	0	
1.4	16QAM	3	0	14.40	14.54	14.49			
1.4	16QAM	3	1	14.43	14.51	14.45	16	0	
1.4	16QAM	6	0	14.40	14.53	14.55			
1.4	16QAM	6	0	14.40	14.53	14.55	16	0	
1.4	16QAM	6	0	14.40	14.53	14.55			
1.4	64QAM	1	3	14.56	14.71	14.65	16	0	
1.4	64QAM	1	5	14.50	14.69	14.60			
1.4	64QAM	3	0	14.50	14.60	14.66	16	0	
1.4	64QAM	3	1	14.58	14.68	14.68			
1.4	64QAM	3	3	14.48	14.52	14.62	16	0	
1.4	64QAM	6	0	14.37	14.50	14.46			

Band 30											
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)											
10	QPSK	1	0		20.25		21	0			
10	QPSK	1	25		19.83						
10	QPSK	1	49		20.17						
10	QPSK	25	0		19.92		21	0			
10	QPSK	25	12		19.96						
10	QPSK	25	25		20.10						
10	QPSK	50	0		20.01		21	0			
10	16QAM	1	0		20.13						
10	16QAM	1	25		20.19						
10	16QAM	1	49		20.13		21	0			
10	16QAM	25	0		19.93						
10	16QAM	25	12		19.95						
10	16QAM	25	25		20.04		21	0			
10	16QAM	50	0		19.90						
10	64QAM	1	0		20.19		21	0			
10	64QAM	1	25		20.07						
10	64QAM	1	49		20.17						
10	64QAM	25	0		19.92		21	0			
10	64QAM	25	12		19.91						
10	64QAM	25	25		20.05						
10	64QAM	50	0		19.92		21	0			
Channel											
Frequency (MHz)											
2768.5 2771.0 2773.5											
5	QPSK	1	0	20.07	19.95	19.89	21	0			
5	QPSK	1	12	19.84	19.90	19.93					
5	QPSK	1	24	19.85	19.95	19.96					
5	QPSK	12	7	19.89	19.93	20.03	21	0			
5	QPSK	12	13	19.90	19.89	20.00					
5	QPSK	25	0	19.87	19.95	20.03					
5	16QAM	1	0	20.16	20.25	20.19	21	0			
5	16QAM	1	12	20.14	20.20	20.20					
5	16QAM	1	24	20.11	20.20	20.18					
5	16QAM	12	0	20.07	19.96	19.94	21	0			
5	16QAM	12	7	19.94	19.93	20.06					
5	16QAM	12	13	19.89	19.90	20.03					
5	16QAM	25	0	19.91	19.93	20.05	21	0			
5	64QAM	1	0	20.20	20.12	20.17					
5	64QAM	1	12	19.97	20.07	20.15					
5	64QAM	1	24	20.05	20.17	20.16	21	0			
5	64QAM	12	0	20.07	19.95	19.94					
5	64QAM	12	7	19.93	19.92	20.03					
5	64QAM	12	13	19.92	19.89	20.02	21	0			
5	64QAM	25	0	19.88	19.92	20.03					

Band 66											
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power Middle Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)			
Channel											
Frequency (MHz)											
1720 1745 1770											
20	QPSK	1	0	15.26	15.68	15.70	16.5	0			
20	QPSK	1	49	15.31	15.60	15.71					
20	QPSK	1	99	15.32	15.73	15.96					
20	QPSK	50	0	15.13	15.07	15.83	16.5	0			
20	QPSK	50	24	15.19	15.19	15.76					
20	QPSK	50	50	15.28	15.65	15.81					
20	QPSK	100	0	15.24	15.69	15.77	16.5	0			
20	16QAM	1	0	15.21	15.31	15.78					
20	16QAM	1	49	15.23	15.47	15.95					
20	16QAM	1	99	15.51	15.59	15.91	16.5	0			
20	16QAM	50	0	15.85	15.05	15.80					
20	16QAM	50	24	15.88	15.18	15.77					
20	16QAM	50	50	15.88	15.26	15.83	16.5	0			
20	16QAM	100	0	15.85	15.14	15.89					
20	64QAM	1	0	15.03	15.14	15.65					
20	64QAM	1	49	15.17	15.24	15.85	16.5	0			
20	64QAM	1	99	15.41	15.93	15.77					
20	64QAM	50	0	15.79	15.01	15.60					
20	64QAM	50	24	15.84	15.16	15.72	16.5	0			
20	64QAM	50	50	15.85	15.25	15.82					
20	64QAM	100	0	15.88	15.14	15.70					
Channel											
Frequency (MHz)											
1717.5 1745 1777.5											
15	QPSK	1	0	15.20	15.47	15.50	16.5	0			
15	QPSK	1	37	15.17	15.91	15.66					
15	QPSK	1	74	15.19	15.50	15.90					
15	QPSK	36	0	15.16	15.18	15.84	16.5	0			
15	QPSK	36	20	15.84	15.19	15.84					
15	QPSK	36	39	15.87	15.22	15.96					
15	QPSK	75	0	15.85	15.18	15.83	16.5	0			
15	16QAM	1	0	15.61	15.67	15.99					
15	16QAM	1	37	15.21	15.50	15.88					
15	16QAM	1	74	15.40	15.89	15.87	16.5	0			
15	16QAM	36	0	15.94	15.18	15.82					
15	16QAM	36	20	15.85	15.19	15.85					
15	16QAM	36	39	15.85	15.20	15.85	16.5	0			
15	16QAM	75	0	15.87	15.18	15.83					
15	64QAM	1	0	15.42	15.52	15.85					
15	64QAM	1	37	15.17	15.22	15.95	16.5	0			
15	64QAM	1	74	15.20	15.67	15.94					
15	64QAM	36	0	15.16	15.20	15.84					
15	64QAM	36	20	15.22	15.20	15.83	16.5	0			
15	64QAM	36	39	15.26	15.23	15.85					
15	64QAM	75	0	15.28	15.16	15.84					
Channel											
Frequency (MHz)											
1715 1745 1775											
10	QPSK	1	0	15.20	15.30	15.70	16.5	0			
10	QPSK	1	25	15.23	15.27	15.90					
10	QPSK	1	49	15.36	15.84	15.72					
10	QPSK	25	0	15.05	15.31	15.71	16.5	0			
10	QPSK	25	12	15.08	15.38	15.80					
10	QPSK	25	25	15.10	15.34	15.65					
10	QPSK	50	0	15.05	15.37	15.88	16.5	0			
10	16QAM	1	0	15.24	15.53	15.81					
10	16QAM	1	25	15.32	15.61	15.73					
10	16QAM	1	49	15.21	15.79	15.66	16.5	0			
10	16QAM	25	0	15.06	15.31	15.64					
10	16QAM	25	12	15.09	15.39	15.70					
10	16QAM	25	25	15.05	15.53	15.78	16.5	0			
10	16QAM	50	0	15.08	15.36	15.66					
10	64QAM	1	0	15.42	15.52	15.85					
10	64QAM	1	25	15.27	15.30	15.65	16.5	0			
10	64QAM	1	49	15.20	15.42	15.90					
10	64QAM	25	0	15.26	15.20	15.84					
10	64QAM	25	12	15.22	15.20	15.83	16.5	0			
10	64QAM	25	25	15.26	15.21	15.85					
10	64QAM	50	0	15.30	15.16	15.84					
Channel											
Frequency (MHz)											
1717.5 1745 1777.5											
5	QPSK	1	0	15.10	15.32	15.86	16.5	0			
5	QPSK	1	12	15.19	15.25	15.71					
5	QPSK	1	24	15.25	15.37	15.89					
5	QPSK	12	0	15.11	15.39	15.77	16.5	0			
5	QPSK	12	7	15.07	15.33	15.73					
5	QPSK	12	13	15.07	15.31	15.71					
5	QPSK	25	0	15.10	15.37	15.74	16.5	0			
5	16QAM	1	0	15.49	15.72	15.83					
5	16QAM	1	12	15.29	15.54	15.65					
5	16QAM	1	24	15.27	15.68	15.65	16.5	0			
5	16QAM	12	0	15.15	15.40	15.81					
5	16QAM	12	7	15.11	15.34	15.72					
5	16QAM	12	13	15.22	15.33	15.75	16.5	0			
5	16QAM	25	0	15.13	15.30	15.74					
5	64QAM	1	0	15.37	15.62	15.65					
5	64QAM	1	12	15.21	15.47	15.81	16.5	0			
5	64QAM	1	24	15.17	15.61	15.86					
5	64QAM	12	0	15.16	15.40	15.82					
5	64QAM	12	7	15.16	15.36	15.75	16.5	0			
5	64QAM	12	13	15.38	15.33	15.72					
5	64QAM	25	0	15.10	15.35	15.73					
Channel											
Frequency (MHz)											
1715.5 1745 1778.5											
3	QPSK	1	0	15.14	15.21	15.82	16.5	0			
3	QPSK	1	8	15.28	15.28	15.95					
3	QPSK	1	14	15.19	15.23	15.93					
3	QPSK	8	0	15.64	15.34	15.92	16.5	0			
3	QPSK	8	4	15.60	15.34	15.93					
3	QPSK	8	7	15.55	15.30	15.88					
3	QPSK	15	0	15.54	15.30	15.89	16.5	0			
3	16QAM	1	0	15.34	15.68	15.84					
3	16QAM	1	8	15.30	15.28	15.92					
3	16QAM	1	14	15.34	15.69	15.90	16.5	0			
3	16QAM	8	0	15.11	15.38	15.87					
3	16QAM	8	4	15.13	15.38	15.81					
3	16QAM	8	7	15.08	15.38	15.85	16.5	0			
3	16QAM	15	0	15.07	15.32	15.91					
3	64QAM	1	0	15.26	15.65	15.92					
3	64QAM	1	8	15.19	15.47	15.87	16.5	0			
3	64QAM	1	14	15.23	15.45	15.82					
3	64QAM	8	0	15.12	15.38	15.76					
3	64QAM	8	4	15.10	15.36	15.87	16.5	0			
3	64QAM	8	7	15.07	15.37	15.81					
3	64QAM	15	0	15.05	15.31	15.92					
Channel											
Frequency (MHz)											
1710.7 1745 1779.3											
1.4	QPSK	1	0	15.08	15.20	15.80	16.5	0			
1.4	QPSK	1	3	15.04	15.29	15.91					
1.4	QPSK	1	5	15.26	15.25	15.94					
1.4	QPSK	3	0	15.19	15.29	15.89	16.5	0			
1.4	QPSK	3	1	15.18	15.33	15.94					
1.4	QPSK	3	3	15.18	15.28	15.87					
1.4	QPSK	3	5	15.39	15.29	15.87	16.5	0			
1.4	16QAM	1	0	15.29	15.62	15.92					
1.4	16QAM	1	3	15.40	15.64	15.89					
1.4	16QAM	1	5	15.30	15.51	15.92	16.5	0			
1.4	16QAM	3	0	15.09	15.33	15.95					
1.4	16QAM	3	1	15.16	15.37	15.87					
1.4	16QAM	3	3	15.17	15.32	15.89	16.5	0			
1.4	16QAM	6	0	15.04	15.35	15.80					
1.4	64QAM	1	0	15.18	15.47	15.84					
1.4	64QAM	1	3	15.16	15.50	15.86	16.5	0			
1.4	64QAM	1	5	15.20	15.47	15.79					
1.4	64QAM	3	0	15.14	15.39	15.77					
1.4	64QAM	3	1	15.21	15.45	15.89	16.5	0			
1.4	64QAM	3	3	15.15	15.38	15.81					
1.4	64QAM	6	0	15.06	15.28	15.88					

Band 38(only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	19.03	18.79	18.83	20	0	
20	QPSK	1	49	19.26	19.06	19.09			
20	QPSK	1	99	19.09	19.08	19.20			
20	QPSK	50	0	19.09	18.93	19.01			
20	QPSK	50	24	19.29	19.04	19.14	20	0	
20	QPSK	50	50	19.29	19.06	19.18			
20	QPSK	100	0	19.04	19.03	19.12			
20	16QAM	1	0	18.92	18.90	19.06			
20	16QAM	1	49	19.11	19.18	19.01	20	0	
20	16QAM	1	99	19.22	19.10	18.92			
20	16QAM	50	0	18.96	18.99	18.96			
20	16QAM	50	24	19.07	19.05	18.96			
20	16QAM	50	50	19.10	19.00	19.26	20	0	
20	16QAM	100	0	19.22	19.05	19.16			
20	64QAM	1	0	18.63	18.39	18.67			
20	64QAM	1	49	18.79	18.58	18.62			
20	64QAM	1	99	18.74	18.53	18.58	20	0	
20	64QAM	50	0	19.03	18.80	19.11			
20	64QAM	50	24	19.26	18.94	19.14			
20	64QAM	50	50	19.24	18.93	18.93			
20	64QAM	100	0	19.20	18.86	18.89	20	0	
Channel									
Frequency (MHz)									
15	QPSK	1	0	18.91	18.87	18.92	20	0	
15	QPSK	1	37	18.87	18.72	18.74			
15	QPSK	1	74	19.22	18.97	19.15			
15	QPSK	36	0	18.98	19.02	19.02			
15	QPSK	36	20	19.28	19.09	19.11	20	0	
15	QPSK	36	39	19.15	19.09	19.20			
15	QPSK	75	0	19.27	19.01	19.14			
15	16QAM	1	0	19.07	18.93	18.96			
15	16QAM	1	37	19.18	19.01	18.95	20	0	
15	16QAM	1	74	19.10	18.98	18.93			
15	16QAM	36	0	18.92	18.78	18.88			
15	16QAM	36	20	19.08	18.86	18.97			
15	16QAM	36	39	19.40	18.85	19.18	20	0	
15	16QAM	75	0	19.28	19.05	19.16			
15	64QAM	1	0	18.70	18.54	18.51			
15	64QAM	1	37	19.03	18.84	19.00			
15	64QAM	1	74	18.96	18.63	18.93	20	0	
15	64QAM	36	0	18.97	18.78	19.01			
15	64QAM	36	20	19.14	18.87	19.11			
15	64QAM	36	39	19.10	18.85	19.11			
15	64QAM	75	0	19.27	19.02	19.17	20	0	
Channel									
Frequency (MHz)									
10	QPSK	1	0	19.23	19.03	19.26	20	0	
10	QPSK	1	25	19.19	18.99	18.97			
10	QPSK	1	49	19.40	19.12	19.20			
10	QPSK	25	0	19.15	19.16	19.11			
10	QPSK	25	12	19.30	19.02	19.09	20	0	
10	QPSK	25	25	19.41	19.17	19.32			
10	QPSK	50	0	19.18	19.09	19.27			
10	16QAM	1	0	19.31	19.16	19.32			
10	16QAM	1	25	19.29	19.01	19.08	20	0	
10	16QAM	1	49	19.38	19.23	19.26			
10	16QAM	25	0	19.27	19.19	19.06			
10	16QAM	25	12	19.12	18.94	19.22			
10	16QAM	25	25	19.36	19.09	19.26	20	0	
10	16QAM	50	0	19.30	18.94	19.20			
10	64QAM	1	0	19.07	18.68	18.95			
10	64QAM	1	25	18.71	18.94	18.71			
10	64QAM	1	49	18.98	18.76	18.79	20	0	
10	64QAM	25	0	19.09	18.91	19.01			
10	64QAM	25	12	19.24	19.18	19.24			
10	64QAM	25	25	19.43	19.03	19.21			
10	64QAM	50	0	19.07	18.91	19.09	20	0	
Channel									
Frequency (MHz)									
5	QPSK	1	0	19.18	18.94	19.25	20	0	
5	QPSK	1	12	19.05	18.76	19.05			
5	QPSK	1	24	19.08	19.02	18.99			
5	QPSK	12	0	19.31	19.16	19.09			
5	QPSK	12	7	19.21	19.11	19.22	20	0	
5	QPSK	12	13	19.29	19.04	19.13			
5	QPSK	25	0	19.35	19.08	19.14			
5	16QAM	1	0	19.23	19.14	19.24			
5	16QAM	1	12	19.14	18.97	19.17	20	0	
5	16QAM	1	24	19.21	18.96	19.14			
5	16QAM	12	0	19.20	19.08	19.19			
5	16QAM	12	7	19.28	18.90	19.21			
5	16QAM	12	13	19.30	18.93	19.23	20	0	
5	16QAM	25	0	19.19	19.10	19.09			
5	64QAM	1	0	19.11	18.66	18.68			
5	64QAM	1	12	18.85	18.90	18.79			
5	64QAM	1	24	18.96	18.71	18.80	20	0	
5	64QAM	12	0	19.32	19.21	19.12			
5	64QAM	12	7	19.34	19.05	19.28			
5	64QAM	12	13	19.12	19.07	19.16			
5	64QAM	25	0	19.41	18.89	19.31	20	0	

Band 41 (2.6G Band)										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel										
Frequency (MHz)										
20	QPSK	1	0	19.39	19.68	19.31	19.25	19.52	21	0
20	QPSK	1	49	19.58	19.73	19.50	19.59	19.53		
20	QPSK	1	99	19.31	19.46	19.25	19.22	19.51		
20	QPSK	50	0	19.42	19.68	19.26	19.40	19.63		
20	QPSK	50	24	19.58	19.80	19.55	19.60	19.65	21	0
20	QPSK	50	50	19.37	19.53	19.34	19.39	19.56		
20	QPSK	100	0	19.36	19.54	19.33	19.40	19.50		
20	16QAM	1	0	19.16	19.39	19.06	19.02	19.45		
20	16QAM	1	49	19.32	19.33	19.36	19.34	19.65	21	0
20	16QAM	1	99	19.01	19.13	19.23	19.03	19.42		
20	16QAM	50	0	19.47	19.74	19.25	19.50	19.64		
20	16QAM	50	24	19.49	19.74	19.41	19.67	19.71		
20	16QAM	50	50	19.35	19.60	19.37	19.46	19.60	21	0
20	16QAM	100	0	19.29	19.55	19.30	19.32	19.61		
20	64QAM	1	0	19.43	19.15	19.59	19.68	19.16		
20	64QAM	1	49	19.16	19.33	19.04	19.09	19.36		
20	64QAM	1	99	19.35	19.32	19.15	19.40	19.29	21	0
20	64QAM	50	0	19.40	19.67	19.20	19.33	19.62		
20	64QAM	50	24	19.47	19.67	19.36	19.37	19.64		
20	64QAM	50	50	19.28	19.46	19.30	19.35	19.56		
20	64QAM	100	0	19.33	19.59	19.37	19.37	19.62	21	0
Channel										
Frequency (MHz)										
15	QPSK	1	0	19.20	19.39	19.20	19.30	19.58	21	0
15	QPSK	1	37	19.35	19.14	19.50	19.02	19.38		
15	QPSK	1	74	19.28	19.07	19.34	19.38	19.59		
15	QPSK	36	0	19.48	19.70	19.32	19.32	19.63		
15	QPSK	36	20	19.54	19.75	19.48	19.53	19.60	21	0
15	QPSK	36	39	19.67	19.80	19.55	19.60	19.59		
15	QPSK	75	0	19.45	19.72	19.36	19.35	19.53		
15	16QAM	1	0	19.08	19.15	19.58	19.14	19.61	21	0
15	16QAM	1	37	19.04	19.26	19.47	19.07	19.44		
15	16QAM	1	74	19.30	19.39	19.18	19.25	19.50		
15	16QAM	36	0	19.44	19.69	19.20	19.28	19.55		
15	16QAM	36	20	19.53	19.69	19.39	19.48	19.54	21	0
15	16QAM	36	39	19.57	19.68	19.48	19.55	19.52		
15	16QAM	75	0	19.45	19.74	19.40	19.44	19.54		
15	64QAM	1	0	19.36	19.19	19.53	19.28	19.26	21	0
15	64QAM	1	37	19.42	19.10	19.12	19.12	19.61		
15	64QAM	1	74	19.54	19.20	19.08	19.07	19.21		
15	64QAM	36	0	19.31	19.62	19.19	19.20	19.56	21	0
15	64QAM	36	20	19.41	19.67	19.39	19.44	19.50		
15	64QAM	36	39	19.45	19.61	19.37	19.49	19.52		
15	64QAM	75	0	19.39	19.68	19.33	19.37	19.55		
Channel										
Frequency (MHz)										
10	QPSK	1	0	19.48	19.77	19.91	19.55	19.65	21	0
10	QPSK	1	25	19.50	19.50	19.52	19.52	19.63		
10	QPSK	1	49	19.40	19.72	19.49	19.45	19.39		
10	QPSK	25	0	19.36	19.77	19.50	19.54	19.39		
10	QPSK	25	12	19.55	19.82	19.63	19.63	19.52	21	0
10	QPSK	25	19	19.45	19.76	19.53	19.54	19.47		
10	QPSK	50	0	19.46	19.77	19.49	19.54	19.37		
10	16QAM	1	0	19.38	19.78	19.26	19.38	19.46	21	0
10	16QAM	1	25	19.36	19.70	19.45	19.50	19.43		
10	16QAM	1	49	19.33	19.67	19.40	19.47	19.48		
10	16QAM	25	0	19.40	19.49	19.56	19.54	19.44	21	0
10	16QAM	25	12	19.58	19.81	19.67	19.68	19.43		
10	16QAM	25	25	19.50	19.83	19.61	19.67	19.46		
10	16QAM	50	0	19.43	19.78	19.48	19.56	19.45	21	0
10	64QAM	1	0	19.02	19.32	19.01	19.13	19.15		
10	64QAM	1	25	19.07	19.31	19.08	19.14	19.01		
10	64QAM	1	49	19.08	19.30	19.04	19.06	19.14		
10	64QAM	25	0	19.34	19.83	19.54	19.55	19.45	21	0
10	64QAM	25	12	19.51	19.89	19.60	19.64	19.47		
10	64QAM	25	25	19.49	19.79	19.51	19.56	19.51		
10	64QAM	50	0	19.39	19.76	19.51	19.54	19.44	21	0
Channel										
Frequency (MHz)										
5	QPSK	1	0	24.95	25.43	25.93	26.40	26.75	21	0
5	QPSK	1	12	25.27	25.57	25.35	25.55	25.30		
5	QPSK	1	24	25.30	25.64	25.40	25.36	25.21		
5	QPSK	12	0	19.45	19.85	19.57	19.52	19.41		
5	QPSK	12	7	19.50	19.84	19.56	19.55	19.44	21	0
5	QPSK	12	13	19.41	19.82	19.53	19.60	19.39		
5	QPSK	25	0	19.39	19.80	19.39	19.39	19.61		
5	16QAM	1	0	19.48	19.82	19.53	19.54	19.44	21	0
5	16QAM	1	12	19.53	19.82	19.64	19.64	19.44		
5	16QAM	1	24	19.44	19.77	19.50	19.48	19.37		
5	16QAM	12	0	19.42	19.74	19.52	19.54	19.41	21	0
5	16QAM	12	7	19.42	19.71	19.48	19.51	19.37		
5	16QAM	12	13	19.36	19.69	19.48	19.49	19.38		
5	16QAM	25	0	19.42	19.81	19.56	19.56	19.44	21	0
5	64QAM	1	0	19.22	19.72	19.16	19.16	19.10		
5	64QAM	1	12	19.17	19.28	19.21	19.20	19.09		
5	64QAM	1	24	19.56	19.11	19.11	19.14	19.07	21	0
5	64QAM	12	0	19.51	19.89	19.61	19.60	19.44		
5	64QAM	12	7	19.48	19.80	19.60	19.62	19.42		
5	64QAM	12	13	19.45	19.78	19.58	19.58	19.43	21	0
5	64QAM	25	0	19.46	19.80	19.57	19.58	19.38		



Reduced Power Mode for Hotspot On

GSM1900	Burnt Average Power (dBm)			Turn-up Limit (dBm)	Turned Average Power (dBm)			Turn-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1850.2	1860	1909.8	1850.2	1860	1909.8		
Frequency (MHz)	21.42	21.43	21.19	22.50	12.42	12.43	12.19	13.50
GSM 1 Tx slot	21.40	21.38	21.13	22.50	12.40	12.38	12.13	13.50
GPRS 1 Tx slot	19.71	20.15	19.77	21.00	13.71	14.15	13.77	15.00
GPRS 3 Tx slots	17.40	17.31	17.49	18.50	13.14	13.05	13.23	14.24
GPRS 8 Tx slots	15.49	15.43	15.38	16.50	12.45	12.43	12.38	13.50
EDGE 1 Tx slot	17.12	17.24	16.98	18.50	8.12	8.24	7.98	9.50
EDGE 2 Tx slots	15.25	15.48	15.34	16.50	9.25	9.48	9.34	10.50
EDGE 3 Tx slots	13.20	13.11	13.09	14.00	8.94	8.85	8.83	9.74
EDGE 4 Tx slots	11.87	11.77	11.74	13.00	8.87	8.77	8.74	10.00

Band	WCDMA 6			Turn-up Limit (dBm)	WCDMA 4			Turn-up Limit (dBm)	WCDMA 5			Turn-up Limit (dBm)	
	TX Channel	9262	9400		9538	1312	1413		1513	4132	4182		4233
RX Channel	9462	9490	9438	9637	9638	9832	1732		4327	4409	4458		
Frequency (MHz)	1852.4	1880	1907.6	1712.4	1732.6	1752.6			526.4	536.4	546.6		
3GPP Rel 99	AMR 12.2Kbps	12.65	12.69	12.61	14.00	12.48	12.40	12.57	14.00	21.87	21.86	22.08	23.00
3GPP Rel 99	RMC 12.2Kbps	12.66	12.70	12.64	14.00	12.59	12.42	12.63	14.00	21.88	21.89	22.15	23.00
3GPP Rel 6	HSDPA Subtest-1	11.69	11.63	11.62	13.00	11.82	11.80	12.00	13.00	20.95	20.93	21.12	22.00
3GPP Rel 6	HSDPA Subtest-2	11.71	11.71	11.67	13.00	11.89	11.90	12.02	13.00	20.94	20.98	21.15	22.00
3GPP Rel 6	HSDPA Subtest-3	10.86	11.20	11.12	12.50	11.41	11.36	11.62	12.50	20.46	20.44	20.68	21.50
3GPP Rel 6	HSDPA Subtest-4	11.19	11.22	11.17	12.50	11.30	11.40	11.05	12.50	20.42	20.47	20.25	21.50
3GPP Rel 6	DC-HSDPA Subtest-1	11.57	11.45	11.62	13.00	11.79	11.83	11.93	13.00	20.98	20.75	20.99	22.00
3GPP Rel 6	DC-HSDPA Subtest-2	11.64	11.52	11.64	13.00	11.83	11.87	11.92	13.00	20.85	20.79	21.12	22.00
3GPP Rel 6	DC-HSDPA Subtest-3	10.74	11.12	11.08	12.50	11.41	11.24	11.58	12.50	20.43	20.28	20.62	21.50
3GPP Rel 6	DC-HSDPA Subtest-4	11.18	11.16	11.07	12.50	11.10	11.35	11.04	12.50	20.22	20.33	20.06	21.50
3GPP Rel 6	HSPA Subtest-1	11.71	11.72	11.67	13.00	11.63	11.90	11.68	13.00	20.89	20.89	21.03	22.00
3GPP Rel 6	HSPA Subtest-2	9.70	9.71	9.70	11.00	9.71	9.70	9.73	11.00	18.83	18.88	18.99	20.00
3GPP Rel 6	HSPA Subtest-3	10.72	10.69	10.64	12.00	10.80	10.83	10.83	12.00	19.87	19.87	20.00	21.00
3GPP Rel 6	HSPA Subtest-4	9.73	9.68	9.63	11.00	9.82	9.84	9.73	11.00	18.85	18.86	19.04	20.00
3GPP Rel 6	HSPA Subtest-5	11.75	11.75	11.65	13.00	11.84	11.84	11.94	13.00	20.86	20.86	21.08	22.00

Band	CDMA BC1			Turn-up Limit (dBm)
	26	809	1175	
TX Channel	1851.25	1890	1908.75	
Frequency (MHz)	14.55	14.78	14.59	15.50
RC1 SOSS	14.46	14.67	14.49	15.50
RC3 SOSS (F+SOH)	14.67	14.75	14.58	15.50
RC3 SOSS (F+SOH)	14.65	14.62	14.45	15.50
RTAP 153.6Kbps	13.95	14.04	13.92	15.50
RETAP 4968Hz	13.97	13.97	13.85	15.50

Band 2 (1900MHz Band) Part 24E												
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq. 18700	Power Middle Ch./Freq. 18900	Power High Ch./Freq. 19100	Turn-up limit (dBm)	MPR (dB)				
Channel												
Frequency (MHz)												
20	QPSK	1	0	12.67	12.45	12.41	13.5	0				
20	QPSK	1	49	12.44	12.38	12.31						
20	QPSK	1	99	12.33	12.25	12.11						
20	QPSK	50	0	12.52	12.47	12.43	13.5	0				
20	QPSK	50	24	12.42	12.37	12.41						
20	QPSK	50	50	12.16	12.26	12.24						
20	QPSK	100	0	12.31	12.31	12.36	13.5	0				
20	16QAM	1	0	12.59	12.58	12.57						
20	16QAM	1	49	12.48	12.43	12.45						
20	16QAM	1	99	12.41	12.63	12.54	13.5	0				
20	16QAM	50	0	12.52	12.44	12.43						
20	16QAM	50	24	12.39	12.39	12.47						
20	16QAM	50	50	12.16	12.27	12.25	13.5	0				
20	16QAM	100	0	12.32	12.30	12.39						
20	64QAM	1	0	12.59	12.65	12.57						
20	64QAM	1	49	12.49	12.48	12.36	13.5	0				
20	64QAM	1	99	12.34	12.23	12.21						
20	64QAM	50	0	12.52	12.46	12.38						
20	64QAM	50	24	12.38	12.36	12.38	13.5	0				
20	64QAM	50	50	12.17	12.25	12.25						
20	64QAM	100	0	12.31	12.32	12.35						
Channel												
Frequency (MHz)												
15	QPSK	1	0	12.65	12.41	12.49	13.5	0				
15	QPSK	1	37	12.18	11.99	12.31						
15	QPSK	1	74	12.47	12.32	12.32						
15	QPSK	36	0	12.45	12.39	12.39	13.5	0				
15	QPSK	36	20	12.32	12.36	12.42						
15	QPSK	36	39	12.34	12.35	12.39						
15	QPSK	75	0	12.32	12.32	12.38	13.5	0				
15	16QAM	1	0	12.43	12.45	12.44						
15	16QAM	1	37	12.41	12.47	12.36						
15	16QAM	1	74	12.37	12.32	12.36	13.5	0				
15	16QAM	36	0	12.42	12.38	12.41						
15	16QAM	36	20	12.39	12.36	12.41						
15	16QAM	36	39	12.32	12.36	12.32	13.5	0				
15	16QAM	75	0	12.34	12.32	12.38						
15	64QAM	1	0	12.49	12.38	12.47						
15	64QAM	1	37	12.43	12.44	12.48	13.5	0				
15	64QAM	1	74	12.48	12.42	12.38						
15	64QAM	36	0	12.41	12.38	12.41						
15	64QAM	36	20	12.37	12.38	12.41	13.5	0				
15	64QAM	36	39	12.33	12.37	12.32						
15	64QAM	75	0	12.29	12.30	12.37						
Channel												
Frequency (MHz)												
10	QPSK	1	0	12.63	12.41	12.55	13.5	0				
10	QPSK	1	25	12.41	12.32	12.43						
10	QPSK	1	49	12.50	12.36	12.44						
10	QPSK	25	0	12.34	12.46	12.38	13.5	0				
10	QPSK	25	12	12.33	12.48	12.34						
10	QPSK	25	25	12.37	12.45	12.36						
10	QPSK	50	0	12.31	12.53	12.41	13.5	0				
10	16QAM	1	0	12.36	12.33	12.40						
10	16QAM	1	25	12.36	12.30	12.28						
10	16QAM	1	49	12.40	12.39	12.38	13.5	0				
10	16QAM	25	0	12.62	12.47	12.56						
10	16QAM	25	12	12.61	12.48	12.55						
10	16QAM	25	25	12.55	12.40	12.49	13.5	0				
10	16QAM	50	0	12.50	12.47	12.49						
10	64QAM	1	0	12.65	12.60	12.56						
10	64QAM	1	25	12.65	12.62	12.52	13.5	0				
10	64QAM	1	49	12.63	12.58	12.62						
10	64QAM	25	0	12.58	12.46	12.55						
10	64QAM	25	12	12.62	12.46	12.52	13.5	0				
10	64QAM	25	25	12.55	12.42	12.56						
10	64QAM	50	0	12.57	12.51	12.50						
Channel												
Frequency (MHz)												
5	QPSK	1	0	12.61	12.56	12.65	13.5	0				
5	QPSK	1	12	12.42	12.36	12.40						
5	QPSK	1	24	12.53	12.42	12.47						
5	QPSK	12	0	12.59	12.58	12.58	13.5	0				
5	QPSK	12	7	12.64	12.55	12.60						
5	QPSK	12	13	12.60	12.49	12.58						
5	QPSK	25	0	12.65	12.53	12.62	13.5	0				
5	16QAM	1	0	12.50	12.49	12.49						
5	16QAM	1	12	12.38	12.34	12.35						
5	16QAM	1	24	12.36	12.23	12.28	13.5	0				
5	16QAM	12	0	12.64	12.60	12.63						
5	16QAM	12	7	12.62	12.56	12.58						
5	16QAM	12	13	12.63	12.48	12.56	13.5	0				
5	16QAM	25	0	12.59	12.53	12.59						
5	64QAM	1	0	12.57	12.66	12.64						
5	64QAM	1	12	12.61	12.58	12.61	13.5	0				
5	64QAM	1	24	12.63	12.65	12.61						
5	64QAM	12	0	12.59	12.60	12.62						
5	64QAM	12	7	12.61	12.51	12.58	13.5	0				
5	64QAM	12	13	12.55	12.49	12.55						
5	64QAM	25	0	12.57	12.47	12.59						
Channel												
Frequency (MHz)												
3	QPSK	1	0	12.66	12.43	12.58	13.5	0				
3	QPSK	1	8	12.50	12.37	12.48						
3	QPSK	1	14	12.38	12.41	12.46						
3	QPSK	8	0	12.53	12.52	12.53	13.5	0				
3	QPSK	8	4	12.53	12.53	12.55						
3	QPSK	8	7	12.51	12.42	12.49						
3	QPSK	15	0	12.51	12.46	12.45	13.5	0				
3	16QAM	1	0	12.49	12.46	12.43						
3	16QAM	1	8	12.37	12.49	12.47						
3	16QAM	1	14	12.42	12.43	12.39	13.5	0				
3	16QAM	8	0	12.32	12.31	12.28						
3	16QAM	8	4	12.31	12.26	12.33						
3	16QAM	8	7	12.27	12.23	12.25	13.5	0				
3	16QAM	15	0	12.24	12.22	12.25						
3	64QAM	1	0	12.42	12.36	12.47						
3	64QAM	1	8	12.39	12.25	12.46	13.5	0				
3	64QAM	1	14	12.45	12.45	12.41						
3	64QAM	8	0	12.22	12.33	12.38						
3	64QAM	8	4	12.34	12.27	12.23	13.5	0				
3	64QAM	8	7	12.27	12.15	12.22						
3	64QAM	15	0	12.21	12.14	12.24						
Channel												
Frequency (MHz)												
1.4	QPSK	1	0	12.25	12.31	12.38	13.5	0				
1.4	QPSK	1	3	12.42	12.41	12.34						
1.4	QPSK	1	5	12.41	12.41	12.31						
1.4	QPSK	3	0	12.49	12.46	12.47	13.5	0				
1.4	QPSK	3	1	12.24	12.22	12.25						
1.4	QPSK	3	3	12.43	12.38	12.47						
1.4	QPSK	6	0	12.49	12.45	12.47	13.5	0				
1.4	16QAM	1	0	12.38	12.44	12.45						
1.4	16QAM	1	3	12.45	12.41	12.43						
1.4	16QAM	1	5	12.48	12.33	12.38	13.5	0				
1.4	16QAM	3	0	12.27	12.22	12.19						
1.4	16QAM	3	1	12.26	12.29	12.27						
1.4	16QAM	3	3	12.17	12.21	12.25	13.5	0				
1.4	16QAM	6	0	12.46	12.42	12.50						
1.4	16QAM	6	0	12.35	12.29	12.33						
1.4	64QAM	1	3	12.30	12.33	12.47	13.5	0				
1.4	64QAM	1	5	12.29	12.24	12.32						
1.4	64QAM	1	7	12.29	12.38	12.32						
1.4	64QAM	3	0	12.26	12.34	12.28	13.5	0				
1.4	64QAM	3	1	12.17	12.16	12.22						
1.4	64QAM	3	3	12.17	12.16	12.22						

Band 25 (1900MHz Band)									
Part 24E									
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				26140	26340	26590			
Frequency (MHz)									
20	QPSK	1	0	12.45	12.32	12.30	13.5	0	
20	QPSK	1	49	12.43	12.32	12.53			
20	QPSK	1	99	12.36	12.30	12.40			
20	QPSK	50	0	12.49	12.33	12.54	13.5	0	
20	QPSK	50	24	12.46	12.36	12.44			
20	QPSK	50	50	12.37	12.30	12.41			
20	QPSK	100	0	12.38	12.31	12.47	13.5	0	
20	16QAM	1	0	12.39	12.37	12.44			
20	16QAM	1	49	12.32	12.36	12.48			
20	16QAM	1	99	12.33	12.43	12.36	13.5	0	
20	16QAM	50	0	12.48	12.36	12.44			
20	16QAM	50	24	12.41	12.36	12.45			
20	16QAM	50	50	12.38	12.26	12.36	13.5	0	
20	16QAM	100	0	12.39	12.29	12.43			
20	64QAM	1	0	12.36	12.33	12.42			
20	64QAM	1	49	12.31	12.43	12.47	13.5	0	
20	64QAM	1	99	12.11	12.17	12.13			
20	64QAM	50	0	12.46	12.33	12.42			
20	64QAM	50	24	12.46	12.36	12.44	13.5	0	
20	64QAM	50	50	12.34	12.25	12.39			
20	64QAM	100	0	12.38	12.30	12.44			
Channel				26115	26340	26515	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)									
15	QPSK	1	0	12.43	12.41	12.49	13.5	0	
15	QPSK	1	37	11.94	11.94	11.86			
15	QPSK	1	74	11.98	11.92	11.95			
15	QPSK	36	0	12.08	11.99	12.01	13.5	0	
15	QPSK	36	20	12.08	12.00	12.03			
15	QPSK	36	39	12.08	12.05	12.07			
15	QPSK	75	0	12.10	12.02	12.03	13.5	0	
10	16QAM	1	0	12.44	12.32	12.36			
10	16QAM	1	37	12.38	12.30	12.23			
10	16QAM	1	74	12.37	12.40	12.25	13.5	0	
15	16QAM	36	0	12.08	11.98	12.03			
15	16QAM	36	20	12.08	12.00	12.01	13.5	0	
15	16QAM	36	39	12.09	12.04	12.05			
15	16QAM	75	0	12.06	12.03	12.07	13.5	0	
15	64QAM	1	0	12.26	12.18	12.20			
15	64QAM	1	37	12.18	12.18	12.05	13.5	0	
15	64QAM	1	74	12.16	12.15	12.01			
10	64QAM	36	0	12.08	12.01	12.03	13.5	0	
10	64QAM	36	20	12.08	12.01	12.01			
10	64QAM	36	39	12.11	12.08	12.06			
15	64QAM	75	0	12.05	12.01	12.06	13.5	0	
Channel				26590	26340	26640	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)									
10	QPSK	1	0	12.48	12.46	12.45	13.5	0	
10	QPSK	1	25	11.87	11.99	11.92			
10	QPSK	1	49	12.12	12.19	12.14			
10	QPSK	25	0	12.01	12.12	11.99	13.5	0	
10	QPSK	25	12	12.00	12.13	12.04			
10	QPSK	25	25	12.03	12.15	12.07			
10	QPSK	50	0	12.02	12.13	12.05	13.5	0	
10	16QAM	1	0	12.31	12.40	12.49			
10	16QAM	1	25	12.32	12.42	12.30			
10	16QAM	1	49	12.34	12.33	12.33	13.5	0	
10	16QAM	25	0	12.02	12.13	12.01			
10	16QAM	25	12	12.01	12.13	11.99			
10	16QAM	25	25	11.98	12.15	12.03	13.5	0	
10	16QAM	50	0	12.03	12.13	12.03			
10	64QAM	1	0	12.26	12.41	12.43			
10	64QAM	1	25	12.12	12.23	12.11	13.5	0	
10	64QAM	1	49	12.37	12.44	12.19			
10	64QAM	25	0	11.99	12.10	12.02			
10	64QAM	25	12	12.03	12.14	12.03	13.5	0	
10	64QAM	25	25	12.02	12.14	12.06			
10	64QAM	50	0	12.00	12.14	12.05			
Channel				26665	26340	26665	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)									
5	QPSK	1	0	12.49	12.46	12.45	13.5	0	
5	QPSK	1	12	11.89	11.96	11.86			
5	QPSK	1	24	11.96	12.02	11.92			
5	QPSK	12	0	12.02	12.13	12.03	13.5	0	
5	QPSK	12	7	12.01	12.11	11.98			
5	QPSK	12	13	11.98	12.07	11.98			
5	QPSK	25	0	12.01	12.12	12.02	13.5	0	
5	16QAM	1	0	12.38	12.41	12.38			
5	16QAM	1	12	12.27	12.34	12.22			
5	16QAM	1	24	12.20	12.40	12.29	13.5	0	
5	16QAM	12	0	12.06	12.17	12.05			
5	16QAM	12	7	12.02	12.11	12.01			
5	16QAM	12	13	11.98	12.12	11.97	13.5	0	
5	16QAM	25	0	12.00	12.12	12.01			
5	64QAM	1	0	12.26	12.40	12.28	13.5	0	
5	64QAM	1	12	12.15	12.20	12.08			
5	64QAM	1	24	12.12	12.23	12.10			
5	64QAM	12	0	12.05	12.18	12.05	13.5	0	
5	64QAM	12	7	12.01	12.11	12.01			
5	64QAM	12	13	11.98	12.08	12.00			
5	64QAM	25	0	11.99	12.11	12.04	13.5	0	
Channel				26655	26340	26675	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)									
3	QPSK	1	0	12.44	12.42	12.46	13.5	0	
3	QPSK	1	8	11.95	12.05	11.90			
3	QPSK	1	14	11.87	12.00	11.90			
3	QPSK	8	0	11.98	12.11	11.96	13.5	0	
3	QPSK	8	4	11.98	12.11	11.98			
3	QPSK	8	7	11.93	12.05	11.95			
3	QPSK	15	0	11.97	12.08	11.97	13.5	0	
3	16QAM	1	0	12.30	12.37	12.33			
3	16QAM	1	8	12.29	12.34	12.36			
3	16QAM	1	14	12.14	12.30	12.27	13.5	0	
3	16QAM	8	0	12.07	12.17	12.01			
3	16QAM	8	4	12.04	12.16	12.05			
3	16QAM	8	7	12.02	12.13	12.00	13.5	0	
3	16QAM	15	0	11.99	12.09	12.00			
3	64QAM	1	0	12.12	12.26	12.12	13.5	0	
3	64QAM	1	8	12.16	12.25	12.12			
3	64QAM	1	14	12.09	12.22	12.09			
3	64QAM	8	0	12.03	12.14	12.00	13.5	0	
3	64QAM	8	4	12.04	12.15	12.00			
3	64QAM	8	7	11.97	12.09	11.97			
3	64QAM	15	0	11.96	12.10	11.95	13.5	0	
Channel				26047	26340	26083	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)									
1.4	QPSK	1	0	12.44	12.46	12.47	13.5	0	
1.4	QPSK	1	3	11.96	12.01	11.88			
1.4	QPSK	1	5	11.87	11.97	11.86			
1.4	QPSK	3	0	11.89	12.00	11.89	13.5	0	
1.4	QPSK	3	1	11.97	12.05	11.91			
1.4	QPSK	3	3	11.89	12.00	11.87			
1.4	QPSK	6	0	11.89	12.01	11.86	13.5	0	
1.4	16QAM	1	0	12.14	12.23	12.17	13.5	0	
1.4	16QAM	1	3	12.22	12.33	12.22			
1.4	16QAM	1	5	12.14	12.22	12.17			
1.4	16QAM	3	0	11.96	12.08	11.92	13.5	0	
1.4	16QAM	3	1	12.08	12.12	11.97			
1.4	16QAM	3	3	11.96	12.08	11.92			
1.4	16QAM	6	0	11.95	12.01	11.94	13.5	0	
1.4	16QAM	1	0	12.12	12.20	12.07	13.5	0	
1.4	64QAM	1	3	12.11	12.18	12.06			
1.4	64QAM	1	5	12.07	12.14	12.07			
1.4	64QAM	3	0	11.98	12.14	12.03	13.5	0	
1.4	64QAM	3	1	12.08	12.19	12.05			
1.4	64QAM	3	3	12.01	12.11	12.01			
1.4	64QAM	6	0	11.92	12.04	11.89	13.5	0	

Band 30									
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				27710					
Frequency (MHz)				2310					
10	QPSK	1	0		20.26		21	0	
10	QPSK	1	25		19.83				
10	QPSK	1	49		20.17				
10	QPSK	25	0		19.92				
10	QPSK	25	12		19.96		21	0	
10	QPSK	25	25		20.10				
10	QPSK	50	0		20.01				
10	16QAM	1	0		20.13				
10	16QAM	1	25		20.19		21	0	
10	16QAM	1	49		20.13				
10	16QAM	25	0		19.93				
10	16QAM	25	12		19.96				
10	16QAM	25	25		20.04		21	0	
10	16QAM	50	0		19.90				
10	64QAM	1	0		20.19				
10	64QAM	1	25		20.07				
10	64QAM	1	49		20.17		21	0	
10	64QAM	25	0		19.92				
10	64QAM	25	12		19.91				
10	64QAM	25	25		20.05				
10	64QAM	50	0		19.92				
Channel				27690	27710	27730	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2307.5	2310	2312.5			
5	QPSK	1	0	19.87	19.85	19.83	21	0	
5	QPSK	1	12	19.84	19.80	19.93			
5	QPSK	1	24	19.85	19.95	19.96			
5	QPSK	12	0	20.02	19.92	19.95			
5	QPSK	12	7	19.89	19.93	20.03	21	0	
5	QPSK	12	13	19.90	19.89	20.00			
5	QPSK	25	0	19.87	19.96	20.03			
5	16QAM	1	0	20.16	20.20	20.19			
5	16QAM	1	12	20.14	20.20	20.20	21	0	
5	16QAM	1	24	20.11	20.20	20.18			
5	16QAM	12	0	20.07	19.96	19.94			
5	16QAM	12	7	19.94	19.93	20.06			
5	16QAM	12	13	19.89	19.90	20.03	21	0	
5	16QAM	25	0	19.91	19.93	20.05			
5	64QAM	1	0	20.20	20.12	20.17			
5	64QAM	1	12	19.97	20.07	20.18			
5	64QAM	1	24	20.06	20.17	20.16	21	0	
5	64QAM	12	0	20.07	19.96	19.94			
5	64QAM	12	7	19.93	19.92	20.03			
5	64QAM	12	13	19.92	19.89	20.02			
5	64QAM	25	0	19.88	19.92	20.03			

Band 66									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				132072	132122	132197	14.5	0	
Frequency (MHz)				1720	1745	1770			
20	QPSK	1	0	13.16	13.26	13.34			
20	QPSK	1	49	13.24	13.31	13.56			
20	QPSK	1	99	13.61	14.06	14.09			
20	QPSK	50	0	12.79	12.83	13.52			
20	QPSK	50	24	12.87	12.98	13.64			
20	QPSK	50	50	12.98	13.65	13.68			
20	QPSK	100	0	12.97	13.65	13.62			
20	16QAM	1	0	13.16	13.13	13.73			
20	16QAM	1	49	13.25	13.34	13.92			
20	16QAM	1	99	13.62	13.85	13.97			
20	16QAM	50	0	12.77	12.83	13.52			
20	16QAM	50	24	12.87	13.02	13.66			
20	16QAM	50	50	12.90	13.13	13.68			
20	16QAM	100	0	12.85	12.98	13.59			
20	64QAM	1	0	13.05	13.11	13.57			
20	64QAM	1	49	13.09	13.11	13.80			
20	64QAM	1	99	13.47	13.80	13.92			
20	64QAM	50	0	12.79	12.82	13.49			
20	64QAM	50	24	12.84	12.99	13.62			
20	64QAM	50	50	12.88	13.15	13.67			
20	64QAM	100	0	12.86	12.95	13.60			
Channel				132047	132122	132197	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1717.5	1745	1772.5	14.5	0	
15	QPSK	1	0	12.71	12.75	13.41			
15	QPSK	1	37	12.61	12.81	13.48			
15	QPSK	1	74	12.97	13.34	13.81			
15	QPSK	36	0	12.89	12.96	13.67			
15	QPSK	36	20	12.78	13.00	13.67			
15	QPSK	36	39	12.82	13.05	13.66			
15	QPSK	75	0	12.86	12.98	13.66			
15	16QAM	1	0	13.05	13.44	13.95			
15	16QAM	1	37	13.14	13.32	13.91			
15	16QAM	1	74	13.36	13.76	13.98			
15	16QAM	36	0	12.87	12.93	13.70			
15	16QAM	36	20	12.79	12.97	13.68			
15	16QAM	36	39	12.80	13.04	13.63			
15	16QAM	75	0	12.84	13.01	13.67			
15	64QAM	1	0	13.35	13.21	13.94			
15	64QAM	1	37	13.02	13.08	13.84			
15	64QAM	1	74	13.16	13.64	13.93			
15	64QAM	36	0	12.88	12.95	13.71			
15	64QAM	36	20	12.78	13.00	13.70			
15	64QAM	36	39	12.81	13.05	13.70			
15	64QAM	75	0	12.81	12.98	13.68			
Channel				132022	132122	132197	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1715	1745	1775	14.5	0	
10	QPSK	1	0	13.11	13.01	13.61			
10	QPSK	1	25	13.16	13.07	13.70			
10	QPSK	1	49	13.30	13.66	13.98			
10	QPSK	25	0	12.95	13.08	13.78			
10	QPSK	25	12	13.00	13.17	13.88			
10	QPSK	25	25	13.01	13.38	13.94			
10	QPSK	50	0	12.99	13.18	13.82			
10	16QAM	1	0	13.18	13.23	13.56			
10	16QAM	1	25	13.24	13.47	13.97			
10	16QAM	1	49	13.64	13.86	13.95			
10	16QAM	25	0	12.98	13.06	13.79			
10	16QAM	25	12	12.99	13.20	13.85			
10	16QAM	25	25	13.00	13.26	13.92			
10	16QAM	50	0	12.98	13.17	13.80			
10	64QAM	1	0	13.05	13.04	13.32			
10	64QAM	1	25	13.12	13.29	13.87			
10	64QAM	1	49	13.50	13.90	13.97			
10	64QAM	25	0	12.96	13.06	13.79			
10	64QAM	25	12	13.02	13.20	13.87			
10	64QAM	25	25	13.02	13.37	13.95			
10	64QAM	50	0	12.93	13.16	13.79			
Channel				131997	132122	132197	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1712.5	1742	1772.5	14.5	0	
5	QPSK	1	0	12.91	13.01	13.64			
5	QPSK	1	12	12.90	13.09	13.74			
5	QPSK	1	24	12.90	13.20	13.76			
5	QPSK	12	0	13.05	13.19	13.91			
5	QPSK	12	7	13.03	13.16	13.84			
5	QPSK	12	13	13.10	13.14	13.80			
5	QPSK	25	0	13.05	13.19	13.86			
5	16QAM	1	0	13.41	13.54	13.80			
5	16QAM	1	12	13.24	13.39	13.86			
5	16QAM	1	24	13.22	13.62	13.91			
5	16QAM	12	0	13.06	13.19	13.94			
5	16QAM	12	7	13.08	13.18	13.85			
5	16QAM	12	13	13.13	13.16	13.83			
5	16QAM	25	0	13.04	13.17	13.84			
5	64QAM	1	0	13.34	13.43	13.98			
5	64QAM	1	12	13.10	13.23	13.94			
5	64QAM	1	24	13.14	13.36	13.98			
5	64QAM	12	0	13.06	13.21	13.75			
5	64QAM	12	7	13.06	13.18	13.86			
5	64QAM	12	13	13.12	13.16	13.82			
5	64QAM	25	0	13.01	13.16	13.88			
Channel				131987	132122	132197	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1711.5	1745	1778.5	14.5	0	
3	QPSK	1	0	12.85	12.87	13.75			
3	QPSK	1	8	12.95	13.07	13.74			
3	QPSK	1	16	12.90	13.07	13.73			
3	QPSK	8	0	12.99	13.15	13.83			
3	QPSK	8	4	12.99	13.16	13.81			
3	QPSK	8	7	12.97	13.13	13.80			
3	QPSK	15	0	12.96	13.12	13.79			
3	16QAM	1	0	13.26	13.47	13.91			
3	16QAM	8	8	13.30	13.46	13.95			
3	16QAM	1	14	13.24	13.38	13.96			
3	16QAM	8	0	13.05	13.18	13.90			
3	16QAM	8	4	13.06	13.21	13.87			
3	16QAM	15	0	13.01	13.14	13.82			
3	64QAM	1	0	13.15	13.32	13.96			
3	64QAM	1	8	13.15	13.31	13.98			
3	64QAM	1	14	13.08	13.28	13.94			
3	64QAM	8	0	12.99	13.16	13.93			
3	64QAM	8	4	13.04	13.17	13.98			
3	64QAM	8	7	12.98	13.14	13.83			
3	64QAM	15	0	12.98	13.14	13.81			
Channel				131979	132122	132195	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1710.5	1745	1779.5	14.5	0	
1.4	QPSK	1	0	12.91	13.07	13.74			
1.4	QPSK	1	3	12.93	13.13	13.81			
1.4	QPSK	1	5	12.87	13.09	13.73			
1.4	QPSK	3	0	12.82	13.03	13.77			
1.4	QPSK	3	1	12.95	13.17	13.84			
1.4	QPSK	3	2	12.88	13.04	13.76			
1.4	QPSK	6	0	12.88	13.37	13.74			
1.4	16QAM	1	0	13.12	13.12	13.95			
1.4	16QAM	1	3	13.19	13.15	13.95			
1.4	16QAM	1	5	13.13	13.12	13.97			
1.4	16QAM	3	0	12.97	13.13	13.83			
1.4	16QAM	3	1	13.06	13.28	13.88			
1.4	16QAM	3	3	12.97	13.26	13.82			
1.4	16QAM	6	0	12.94	13.20	13.80			
1.4	16QAM	1	0	13.16	13.18	13.99			
1.4	16QAM	1	3	13.11	13.21	13.94			
1.4	64QAM	1	4	13.03	13.16	13.93			
1.4	64QAM	3	0	13.03	13.09	13.88			
1.4	64QAM	3	1	13.12	13.13	13.94			
1.4	64QAM	3	3	13.01	13.28	13.88			
1.4	64QAM	6	0	12.94	13.10	13.78			

Band 38(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch./Freq	Power Main Ch./Freq	Power High Ch./Freq	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				2580	3600	3650			
20	QPSK	1	0	19.03	18.79	18.83	20	0	
20	QPSK	1	49	19.26	19.06	19.09			
20	QPSK	1	99	19.09	19.08	19.20			
20	QPSK	50	0	19.09	18.93	19.01			
20	QPSK	50	24	19.29	19.04	19.04	20	0	
20	QPSK	50	50	19.29	19.06	19.18			
20	QPSK	100	0	19.04	19.03	19.12			
20	16QAM	1	0	18.92	18.90	19.06			
20	16QAM	1	49	19.11	19.18	19.01	20	0	
20	16QAM	1	99	19.22	19.10	18.92			
20	16QAM	50	0	18.98	18.99	18.96			
20	16QAM	50	24	19.07	18.95	18.96			
20	16QAM	50	50	19.10	19.00	19.26	20	0	
20	16QAM	100	0	19.22	19.05	19.16			
20	64QAM	1	0	18.83	18.39	18.87			
20	64QAM	1	49	18.79	18.88	18.82			
20	64QAM	1	99	18.74	18.53	18.58	20	0	
20	64QAM	50	0	19.03	18.80	19.11			
20	64QAM	50	24	19.26	18.94	19.14			
20	64QAM	50	50	19.24	18.93	18.93			
20	64QAM	100	0	19.20	18.86	18.89			
Channel									
Frequency (MHz)				2577.5 <th>2595<th>2617.5<th>Tune-up limit (dBm)</th><th>MPR (dB)</th><th></th></th></th>	2595 <th>2617.5<th>Tune-up limit (dBm)</th><th>MPR (dB)</th><th></th></th>	2617.5 <th>Tune-up limit (dBm)</th> <th>MPR (dB)</th> <th></th>	Tune-up limit (dBm)	MPR (dB)	
15	QPSK	1	0	18.91	18.87	18.92	20	0	
15	QPSK	1	37	18.87	18.72	18.74			
15	QPSK	1	74	19.22	18.97	19.15			
15	QPSK	36	0	18.98	19.02	19.02			
15	QPSK	36	20	19.28	19.09	19.11	20	0	
15	QPSK	36	39	19.15	19.09	19.20			
15	QPSK	75	0	19.27	19.01	19.14			
15	16QAM	1	0	19.07	18.93	18.96			
15	16QAM	1	37	19.18	19.01	18.95	20	0	
15	16QAM	1	74	19.10	18.98	19.18			
15	16QAM	36	0	18.92	18.78	18.88			
15	16QAM	36	20	19.08	18.85	18.97			
15	16QAM	36	39	19.05	18.85	19.18	20	0	
15	16QAM	75	0	19.28	19.05	19.16			
15	64QAM	1	0	18.70	18.54	18.51			
15	64QAM	1	37	19.03	18.84	19.00			
15	64QAM	1	74	18.96	18.63	18.93			
15	64QAM	36	0	18.97	18.78	19.01			
15	64QAM	36	20	19.14	18.87	19.11			
15	64QAM	36	39	19.10	18.85	19.11			
15	64QAM	75	0	19.27	19.02	19.17			
Channel									
Frequency (MHz)				27560	38000	38200	Tune-up limit (dBm)	MPR (dB)	
10	QPSK	1	0	19.23	19.03	19.26	20	0	
10	QPSK	1	25	19.19	18.99	18.97			
10	QPSK	1	49	19.40	19.12	19.20			
10	QPSK	25	0	19.15	19.16	19.11			
10	QPSK	25	12	19.30	19.02	19.09	20	0	
10	QPSK	25	25	19.41	19.17	19.32			
10	QPSK	50	0	19.18	19.09	19.27			
10	16QAM	1	0	19.31	19.16	19.32			
10	16QAM	1	25	19.29	19.01	19.08	20	0	
10	16QAM	1	49	19.36	19.23	19.26			
10	16QAM	25	0	19.27	19.19	19.06			
10	16QAM	25	12	19.12	18.94	19.22			
10	16QAM	25	25	19.36	19.09	19.26	20	0	
10	16QAM	50	0	19.30	18.94	19.20			
10	64QAM	1	0	19.07	18.58	18.95			
10	64QAM	1	25	18.71	18.94	18.71			
10	64QAM	1	49	18.88	18.76	18.79	20	0	
10	64QAM	25	0	19.09	18.91	19.31			
10	64QAM	25	12	19.24	19.18	19.04			
10	64QAM	25	25	19.45	19.03	19.21			
10	64QAM	50	0	19.07	18.91	19.08			
Channel									
Frequency (MHz)				3777.5 <th>38000</th> <th>38225</th> <th>Tune-up limit (dBm)</th> <th>MPR (dB)</th> <th></th>	38000	38225	Tune-up limit (dBm)	MPR (dB)	
5	QPSK	1	0	19.18	18.94	19.25	20	0	
5	QPSK	1	12	19.05	18.76	19.05			
5	QPSK	1	24	19.08	19.02	18.99			
5	QPSK	12	0	19.31	19.16	19.09			
5	QPSK	12	7	19.21	19.11	19.22	20	0	
5	QPSK	12	13	19.29	19.04	19.13			
5	QPSK	25	0	19.35	19.06	19.14			
5	16QAM	1	0	19.23	19.14	19.24			
5	16QAM	1	12	19.14	18.97	19.17	20	0	
5	16QAM	1	24	19.21	18.96	19.14			
5	16QAM	12	0	19.20	19.08	19.19			
5	16QAM	12	7	19.28	18.90	19.21			
5	16QAM	12	13	19.30	18.93	19.23	20	0	
5	16QAM	25	0	19.19	19.10	19.09			
5	64QAM	1	0	19.11	18.96	18.98			
5	64QAM	1	12	18.85	18.90	18.79			
5	64QAM	1	24	18.96	18.71	18.89	20	0	
5	64QAM	12	0	19.32	19.21	19.12			
5	64QAM	12	7	19.34	19.05	19.26			
5	64QAM	12	13	19.12	19.07	19.16			
5	64QAM	25	0	19.41	18.89	19.31			

Band 41 (2.6G Band)														
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Low Middle Ch. / Freq	Power Middle Ch. / Freq	Power High Middle Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)				
Channel														
Frequency (MHz)				39750	40185	40620	41055	41490						
20	QPSK	1	0	19.39	19.68	19.31	19.25	19.52	21	0				
20	QPSK	1	49	19.58	19.73	19.50	19.39	19.53						
20	QPSK	1	99	19.31	19.46	19.25	19.22	19.51						
20	QPSK	50	0	19.42	19.68	19.26	19.40	19.65						
20	QPSK	50	24	19.58	19.80	19.55	19.60	19.83	21	0				
20	QPSK	50	50	19.37	19.53	19.34	19.39	19.56						
20	QPSK	100	0	19.36	19.54	19.33	19.40	19.50						
20	16QAM	1	0	19.16	19.39	19.06	19.02	19.45						
20	16QAM	1	49	19.32	19.33	19.36	19.34	19.65	21	0				
20	16QAM	1	99	19.01	19.13	19.23	19.33	19.42						
20	16QAM	50	0	19.47	19.74	19.25	19.50	19.64	21	0				
20	16QAM	50	24	19.48	19.74	19.41	19.57	19.71						
20	16QAM	50	50	19.35	19.60	19.37	19.46	19.60						
20	16QAM	100	0	19.29	19.55	19.30	19.32	19.61						
20	64QAM	1	0	19.43	19.15	19.59	19.68	19.16	21	0				
20	64QAM	1	49	19.16	19.33	19.04	19.09	19.36						
20	64QAM	1	99	19.35	19.32	19.15	19.40	19.29						
20	64QAM	50	0	19.40	19.67	19.20	19.33	19.62						
20	64QAM	50	24	19.47	19.67	19.36	19.37	19.64	21	0				
20	64QAM	50	50	19.38	19.46	19.30	19.46	19.56						
20	64QAM	100	0	19.33	19.59	19.37	19.37	19.62						
Channel				39725	40173	40620	41056	41515				Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5						
15	QPSK	1	0	19.20	19.39	19.20	19.30	19.58	21	0				
15	QPSK	1	37	19.35	19.14	19.50	19.02	19.38						
15	QPSK	1	74	19.28	19.07	19.54	19.38	19.59						
15	QPSK	36	0	19.48	19.70	19.32	19.32	19.63						
15	QPSK	36	20	19.54	19.75	19.48	19.53	19.60	21	0				
15	QPSK	36	39	19.57	19.57	19.35	19.35	19.40						
15	QPSK	72	0	19.45	19.72	19.36	19.35	19.53						
15	16QAM	1	0	19.08	19.15	19.58	19.14	19.61						
15	16QAM	1	37	19.04	19.26	19.47	19.07	19.40	21	0				
15	16QAM	1	74	19.30	19.39	19.18	19.25	19.50						
15	16QAM	36	0	19.44	19.69	19.20	19.28	19.55						
15	16QAM	36	20	19.53	19.69	19.39	19.48	19.54						
15	16QAM	36	39	19.57	19.68	19.48	19.48	19.54	21	0				
15	16QAM	75	0	19.45	19.74	19.40	19.44	19.54						
15	64QAM	1	0	19.36	19.15	19.56	19.11	19.54						
15	64QAM	1	37	19.42	19.36	19.12	19.33	19.01						
15	64QAM	1	74	19.04	19.20	19.08	19.07	19.21	21	0				
15	64QAM	36	0	19.31	19.62	19.19	19.20	19.56						
15	64QAM	36	20	19.41	19.67	19.39	19.44	19.50						
15	64QAM	36	39	19.45	19.61	19.37	19.49	19.52						
15	64QAM	75	0	19.39	19.68	19.33	19.37	19.55	21	0				
Channel				39700	40160	40620	41080	41540				Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2501	2547	2593	2639	2685						
10	QPSK	1	0	19.48	19.77	19.41	19.55	19.63				21	0	
10	QPSK	1	25	19.50	19.75	19.52	19.18	19.38						
10	QPSK	1	49	19.40	19.72	19.49	19.45	19.39						
10	QPSK	25	0	19.36	19.77	19.50	19.54	19.39						
10	QPSK	25	12	19.55	19.82	19.63	19.63	19.52	21	0				
10	QPSK	25	25	19.48	19.76	19.53	19.54	19.47						
10	QPSK	50	0	19.46	19.77	19.49	19.54	19.37						
10	16QAM	1	0	19.38	19.78	19.26	19.38	19.46						
10	16QAM	1	25	19.36	19.70	19.45	19.50	19.43	21	0				
10	16QAM	1	49	19.31	19.67	19.40	19.47	19.48						
10	16QAM	25	0	19.40	19.80	19.56	19.54	19.44						
10	16QAM	25	12	19.58	19.81	19.67	19.68	19.42						
10	16QAM	25	25	19.50	19.83	19.61	19.57	19.46	21	0				
10	16QAM	50	0	19.43	19.78	19.48	19.56	19.49						
10	64QAM	1	0	19.02	19.32	19.01	19.13	19.15						
10	64QAM	1	25	19.07	19.31	19.08	19.14	19.01						
10	64QAM	1	49	19.08	19.30	19.04	19.06	19.14	21	0				
10	64QAM	25	0	19.34	19.83	19.54	19.55	19.45						
10	64QAM	25	12	19.51	19.89	19.60	19.64	19.47						
10	64QAM	25	25	19.49	19.79	19.51	19.56	19.51						
Channel				2617.5	40148	40620	41050	41555	Tune-up limit (dBm)	MPR (dB)				
Frequency (MHz)				2499.5	2545.8	2593	2640.30	2687.5						
5	QPSK	1	0	19.60	19.44	19.66	19.86	19.61	21	0				
5	QPSK	1	12	19.27	19.57	19.36	19.55	19.30						
5	QPSK	1	24	19.30	19.64	19.40	19.36	19.21						
5	QPSK	12	0	19.45	19.85	19.57	19.52	19.41						
5	QPSK	12	7	19.50	19.84	19.56	19.55	19.44	21	0				
5	QPSK	12	13	19.41	19.82	19.53	19.60	19.39						
5	QPSK	25	0	19.39	19.80	19.59	19.57	19.41						
5	16QAM	1	0	19.48	19.61	19.53	19.82	19.44						
5	16QAM	1	12	19.53	19.82	19.54	19.64	19.44	21	0				
5	16QAM	1	24	19.44	19.77	19.50	19.48	19.37						
5	16QAM	12	0	19.42	19.74	19.52	19.54	19.41						
5	16QAM	12	7	19.42	19.71	19.48	19.51	19.37						
5	16QAM	12	13	19.36	19.69	19.48	19.49	19.38	21	0				
5	16QAM	25	0	19.42	19.81	19.56	19.56	19.44						
5	64QAM	1	0	19.22	19.72	19.16	19.16	19.10						
5	64QAM	1	12	19.17	19.28	19.21	19.20	19.09						
5	64QAM	1	24	19.56	19.56	19.11	19.24	19.28	21	0				
5	64QAM	12	0	19.51	19.89	19.61	19.60	19.44						
5	64QAM	12	7	19.49	19.80	19.60	19.62	19.42						
5	64QAM	12	13	19.45	19.78	19.58	19.62	19.38						
5	64QAM	25	0	19.46	19.80	19.57	19.58	19.43						



Reduced Power Mode for Handheld On							
GSM1900	Tx Average Power (dBm)			Tx Power Limit (dBm)	Frame-Average Power (dBm)		Tx Power Limit (dBm)
	512	661	810		512	661	
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	26.39	26.35	26.23	27.88	17.39	17.35	17.23
GPRS 1 Tx slot	26.33	26.28	26.71	27.88	17.33	17.28	17.71
GPRS 2 Tx slots	24.33	24.41	24.39	26.00	16.33	16.41	16.39
GPRS 3 Tx slots	22.11	22.04	22.01	23.88	17.85	17.78	17.75
GPRS 4 Tx slots	19.86	19.67	19.79	21.88	16.96	16.67	16.79
EDGE 1 Tx slot	22.02	22.10	22.03	23.58	13.02	13.10	13.03
EDGE 2 Tx slots	19.85	19.92	19.89	21.88	13.85	13.92	13.89
EDGE 3 Tx slots	17.57	17.64	17.61	19.00	13.31	13.38	13.35
EDGE 4 Tx slots	16.01	16.11	16.05	18.88	13.01	13.11	13.05

Band	WCDMA II			Tx Power Limit (dBm)	WCDMA IV			Tx Power Limit (dBm)
	3282	8400	8538		1312	1413	1513	
TX Channel	3682	8680	8838		1537	1638	1738	
Frequency (MHz)	1852.4	1880	1907.8		1712.4	1732.6	1752.6	
3GPP Rel 99	17.44	17.45	17.46	18.50	16.08	15.98	16.01	17.50
3GPP Rel 99	17.46	17.47	17.51	18.50	16.12	16.01	16.15	17.50
3GPP Rel 6	HSDPA Subtest-1	16.80	16.56	16.49	17.50	15.30	15.27	15.44
3GPP Rel 6	HSDPA Subtest-2	16.58	16.58	16.54	17.50	15.33	15.34	15.46
3GPP Rel 6	HSDPA Subtest-3	15.73	16.07	15.99	17.00	14.85	14.80	15.06
3GPP Rel 6	HSDPA Subtest-4	16.06	16.09	16.04	17.00	14.74	14.84	14.49
3GPP Rel 6	DCHSDPA Subtest-1	16.44	16.49	16.32	17.50	15.27	15.27	15.37
3GPP Rel 6	DCHSDPA Subtest-2	16.51	16.39	16.51	17.50	15.27	15.31	15.36
3GPP Rel 6	DCHSDPA Subtest-3	15.61	15.99	15.95	17.00	14.85	14.68	15.02
3GPP Rel 6	DCHSDPA Subtest-4	16.05	16.05	15.94	17.00	14.54	14.79	14.48
3GPP Rel 6	HSPA Subtest-1	16.58	16.59	16.54	17.50	15.27	15.34	15.12
3GPP Rel 6	HSPA Subtest-2	14.57	14.58	14.57	15.50	13.15	13.14	13.17
3GPP Rel 6	HSPA Subtest-3	15.59	15.56	15.51	16.50	14.24	14.27	14.27
3GPP Rel 6	HSPA Subtest-4	14.60	14.55	14.50	15.50	13.26	13.28	13.17
3GPP Rel 6	HSPA Subtest-5	16.62	16.62	16.52	17.50	15.28	15.28	15.38

Band	CDMA BIC1			Tx Power Limit (dBm)
	25	800	1175	
TX Channel	1851.25	1880	1908.75	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 S055	19.13	19.36	19.17	20.00
RC1 S055	19.04	19.25	19.07	20.00
RC1 S032 (+SCH)	19.25	19.33	19.16	20.00
RC1 S032 (+SCH)	19.23	19.20	19.03	20.00
RTAP 153.6Kbps	19.04	19.07	18.97	20.00
RTAP 4096Kbps	18.75	18.75	18.63	20.00



Band 2 (1900MHz Band)										
Part 24E										
BW (MHz)	Modulation	RB Size	RB Offset	Channel	Power Low Ch. (Freq.)	Power Middle Ch. (Freq.)	Power High Ch. (Freq.)	Tune-up (MHz)	MPR (dB)	
18700 18800 19000										
20	QPSK	1	0	1860	1880	1900				
20	QPSK	1	40	1941	1939	1933	20.5	0		
20	QPSK	1	80	1912	1915	1916				
20	QPSK	50	0	1944	1944	1944				
20	QPSK	50	24	1932	1932	1932	20.5	0		
20	QPSK	50	50	1914	1926	1918				
20	QPSK	100	0	1929	1927	1933				
20	16QAM	1	0	1930	1930	1931				
20	16QAM	1	40	1912	1924	1917	20.5	0		
20	16QAM	1	99	1927	1939	1931				
20	16QAM	50	0	1944	1943	1937				
20	16QAM	50	24	1929	1931	1936				
20	16QAM	50	50	1911	1923	1922	20.5	0		
20	16QAM	100	0	1925	1926	1930				
20	64QAM	1	0	1922	1913	1921				
20	64QAM	1	40	1939	1946	1948	20.5	0		
20	64QAM	1	99	1914	1915	1917				
20	64QAM	50	0	1944	1942	1937				
20	64QAM	50	24	1933	1930	1935				
20	64QAM	50	50	1912	1918	1920				
20	64QAM	100	0	1934	1929	1931				
18975 18980 19025										
15	QPSK	1	0	18975	18980	19025				
15	QPSK	1	37	1923	1906	1914	20.5	0		
15	QPSK	1	74	1934	1946	1940				
15	QPSK	36	0	1942	1937	1936				
15	QPSK	36	20	1929	1930	1936	20.5	0		
15	QPSK	36	39	1930	1930	1932				
15	QPSK	75	0	1929	1924	1932				
15	16QAM	1	0	1941	1932	1941				
15	16QAM	1	37	1930	1926	1920	20.5	0		
15	16QAM	1	74	1928	1935	1933				
15	16QAM	36	0	1939	1937	1933				
15	16QAM	36	20	1932	1929	1934	20.5	0		
15	16QAM	36	39	1928	1930	1930				
15	16QAM	75	0	1925	1926	1928				
15	64QAM	1	0	1940	1935	1938				
15	64QAM	1	37	1944	1940	1938	20.5	0		
15	64QAM	1	74	1914	1923	1913				
15	64QAM	36	0	1941	1939	1936				
15	64QAM	36	20	1929	1931	1935	20.5	0		
15	64QAM	36	39	1929	1929	1928				
15	64QAM	75	0	1923	1928	1934				
18980 18990 19050										
10	QPSK	1	0	18980	18990	19050				
10	QPSK	1	25	1942	1940	1942	20.5	0		
10	QPSK	1	49	1945	1945	1951				
10	QPSK	25	0	1956	1943	1949				
10	QPSK	25	12	1951	1942	1950	20.5	0		
10	QPSK	25	25	1948	1941	1950				
10	QPSK	50	0	1952	1941	1947				
10	QPSK	1	0	1946	1947	1949				
10	16QAM	1	25	1941	1931	1941	20.5	0		
10	16QAM	1	49	1944	1936	1941				
10	16QAM	25	0	1954	1940	1949				
10	16QAM	25	12	1956	1941	1948	20.5	0		
10	16QAM	25	25	1948	1935	1948				
10	16QAM	50	0	1950	1944	1945				
10	64QAM	1	0	1939	1940	1945				
10	64QAM	1	25	1910	1918	1915	20.5	0		
10	64QAM	1	49	1924	1927	1929				
10	64QAM	25	0	1956	1937	1947				
10	64QAM	25	12	1955	1943	1951	20.5	0		
10	64QAM	25	25	1952	1939	1951				
10	64QAM	50	0	1951	1945	1946				
18975 18975 19075										
5	QPSK	1	0	18975	18975	19075				
5	QPSK	1	12	1947	1938	1945	20.5	0		
5	QPSK	1	24	1946	1937	1942				
5	QPSK	12	0	1952	1952	1956				
5	QPSK	12	7	1956	1942	1952	20.5	0		
5	QPSK	12	13	1953	1943	1948				
5	QPSK	25	0	1953	1947	1952				
5	16QAM	1	0	1949	1942	1946				
5	16QAM	1	12	1935	1926	1928	20.5	0		
5	16QAM	1	24	1937	1937	1936				
5	16QAM	12	0	1916	1916	1918				
5	16QAM	12	7	1960	1949	1953				
5	16QAM	12	13	1955	1942	1948				
5	16QAM	25	0	1955	1946	1953				
5	64QAM	1	0	1939	1928	1936				
5	64QAM	1	12	1927	1917	1920	20.5	0		
5	64QAM	1	24	1925	1926	1922				
5	64QAM	12	0	1919	1916	1922				
5	64QAM	12	7	1929	1920	1924				
5	64QAM	12	13	1956	1941	1951	20.5	0		
5	64QAM	25	0	1958	1947	1955				
18915 18900 19195										
3	QPSK	1	0	18915	18900	19195				
3	QPSK	1	8	1947	1942	1948	20.5	0		
3	QPSK	1	14	1937	1935	1944				
3	QPSK	8	0	1952	1951	1951				
3	QPSK	8	4	1951	1949	1951	20.5	0		
3	QPSK	8	7	1948	1943	1950				
3	QPSK	15	0	1945	1943	1952				
3	16QAM	1	0	1947	1941	1950				
3	16QAM	1	8	1936	1934	1937	20.5	0		
3	16QAM	1	14	1929	1924	1936				
3	16QAM	8	0	1953	1952	1954				
3	16QAM	8	4	1956	1953	1957	20.5	0		
3	16QAM	8	7	1952	1949	1951				
3	16QAM	15	0	1948	1952	1953				
3	64QAM	1	0	1927	1927	1925				
3	64QAM	1	8	1925	1921	1925	20.5	0		
3	64QAM	1	14	1919	1917	1923				
3	64QAM	8	0	1925	1923	1926				
3	64QAM	8	4	1926	1925	1928	20.5	0		
3	64QAM	8	7	1953	1945	1953				
3	64QAM	15	0	1947	1950	1950				
18907 18900 19195										
1.4	QPSK	1	0	18907	18900	19195				
1.4	QPSK	1	3	1945	1938	1945	20.5	0		
1.4	QPSK	1	5	1939	1938	1942				
1.4	QPSK	3	0	1943	1943	1944				
1.4	QPSK	3	1	1950	1949	1945				
1.4	QPSK	3	3	1945	1940	1941				
1.4	QPSK	6	0	1941	1940	1944	20.5	0		
1.4	16QAM	1	0	1935	1931	1934				
1.4	16QAM	1	3	1932	1943	1941				
1.4	16QAM	1	5	1939	1929	1927	20.5	0		
1.4	16QAM	3	0	1946	1945	1947				
1.4	16QAM	3	1	1931	1949	1934				
1.4	16QAM	3	3	1949	1937	1942				
1.4	16QAM	6	0	1953	1946	1953	20.5	0		
1.4	64QAM	1	0	1925	1926	1921				
1.4	64QAM	1	3	1912	1914	1922				
1.4	64QAM	1	5	1918	1916	1918	20.5	0		
1.4	64QAM	3	0	1953	1950	1954				
1.4	64QAM	3	1	1959	1957	1959				
1.4	64QAM	3	3	1926	1949	1934				
1.4	64QAM	6	0	1949	1944	1942	20.5	0		

Band 4 (AWS Band)										
Part 27L (only on Channel required)										
BW (MHz)	Modulation	RB Size	RB Offset	Channel	Power Low Ch. (Freq.)	Power Middle Ch. (Freq.)	Power High Ch. (Freq.)	Tune-up (MHz)	MPR (dB)	
20050 20175 20300										
20	QPSK	1	0	1784	1790	1796				
20	QPSK	1	49	1790	1797	1798	19.5	0		
20	QPSK	1	99	1785	1830	1850				
20	QPSK	50	0	1771	1767	1728				
20	QPSK	50	24	1754	1770	1801	19.5	0		
20	QPSK	50	50	1775	1768	1816				
20	QPSK	100	0	1763	1764	1803				
20	16QAM	1	0	1784	1787	1797				
20	16QAM	1	49	1787	1815	1836	19.5	0		
20	16QAM	1	99	1781	1810	1858				
20	16QAM	50	0	1752	1765	1788				
20	16QAM	50	24	1738	1767	1839				
20	16QAM	50	50	1763	1765	1816	19.5	0		
20	16QAM	100	0	1756	1765	1799				

Band 25 (1600MHz Band)									
Part 24E									
BW (MHz)	Modulation	Channel	RB Size	RB Offset	Power Low Ch. Freq.	Power Middle Ch. Freq.	Power High Ch. Freq.	Turn-up limit (dBm)	MPR (dB)
Channel					26140	26340	26550		
Frequency (MHz)					1660	1680	1695		
20	QPSK	1	0		16.10	16.06	15.12	19	0
20	QPSK	1	49		16.08	17.94	18.07		
20	QPSK	1	99		17.62	17.67	17.70		
20	QPSK	50	0		17.76	17.66	17.66		
20	QPSK	50	24		17.74	17.67	17.70	19	0
20	QPSK	50	50		17.68	17.59	17.64		
20	QPSK	100	0		17.71	17.67	17.61		
20	16QAM	1	0		17.97	17.91	17.95		
20	16QAM	1	49		17.91	17.87	17.85	19	0
20	16QAM	1	99		17.51	17.65	17.49		
20	16QAM	50	0		17.76	17.65	17.72		
20	16QAM	50	24		17.73	17.68	17.74		
20	16QAM	50	50		17.68	17.61	17.67	19	0
20	16QAM	100	0		17.70	17.63	17.71		
20	64QAM	1	0		17.95	17.86	17.91		
20	64QAM	1	49		17.88	17.84	17.86	19	0
20	64QAM	1	99		17.43	17.54	17.32		
20	64QAM	50	0		17.73	17.66	17.69		
20	64QAM	50	24		17.73	17.68	17.71		
20	64QAM	50	50		17.66	17.56	17.66	19	0
20	64QAM	100	0		17.68	17.64	17.68		
Channel					26115	26340	26615	Turn-up limit (dBm)	MPR (dB)
Frequency (MHz)					1697.5	1680	1697.5		
15	QPSK	1	0		17.81	17.58	17.56	19	0
15	QPSK	1	37		17.75	17.49	17.47		
15	QPSK	1	74		17.74	17.67	17.54		
15	QPSK	36	0		17.81	17.73	17.77		
15	QPSK	36	20		17.85	17.76	17.75	19	0
15	QPSK	36	39		17.56	17.73	17.63		
15	QPSK	75	0		17.90	17.73	17.76		
15	16QAM	1	0		17.93	17.94	17.96		
15	16QAM	1	37		17.89	17.91	17.85	19	0
15	16QAM	1	74		17.91	18.01	17.74		
15	16QAM	36	0		17.78	17.73	17.72		
15	16QAM	36	20		17.80	17.74	17.71		
15	16QAM	36	39		17.81	17.77	17.78	19	0
15	16QAM	75	0		17.96	17.75	17.86		
15	64QAM	1	0		17.93	17.95	17.98		
15	64QAM	1	37		17.83	17.71	17.72		
15	64QAM	1	74		17.92	17.80	17.68	19	0
15	64QAM	36	0		17.82	17.75	17.73		
15	64QAM	36	20		17.79	17.76	17.74		
15	64QAM	36	39		17.85	17.78	17.81		
Channel					26097	26340	26607	Turn-up limit (dBm)	MPR (dB)
Frequency (MHz)					1695	1680	1695		
10	QPSK	1	0		17.82	17.85	17.83	19	0
10	QPSK	1	25		17.72	17.78	17.73		
10	QPSK	1	49		17.91	18.01	17.76		
10	QPSK	25	0		17.74	17.85	17.74		
10	QPSK	25	12		17.73	17.85	17.75	19	0
10	QPSK	25	25		17.75	17.88	17.81		
10	QPSK	50	0		17.73	17.67	17.77		
10	16QAM	1	0		17.84	17.91	17.87		
10	16QAM	1	25		17.84	17.76	17.63	19	0
10	16QAM	1	49		17.86	17.98	17.70		
10	16QAM	25	0		17.76	17.86	17.75		
10	16QAM	25	12		17.75	17.85	17.76		
10	16QAM	25	25		17.75	17.84	17.78	19	0
10	16QAM	50	0		17.78	17.68	17.77		
10	64QAM	1	0		17.70	17.63	17.75		
10	64QAM	1	25		17.60	17.64	17.78		
10	64QAM	1	49		17.74	17.85	17.47	19	0
10	64QAM	25	0		17.74	17.64	17.72		
10	64QAM	25	12		17.72	17.86	17.75		
10	64QAM	25	25		17.77	17.88	17.80		
10	64QAM	50	0		17.74	17.67	17.78	19	0
Channel					26055	26340	26655	Turn-up limit (dBm)	MPR (dB)
Frequency (MHz)					1692.5	1680	1692.5		
5	QPSK	1	0		17.68	17.75	17.64	19	0
5	QPSK	1	12		17.69	17.79	17.65		
5	QPSK	1	24		17.62	17.79	17.68		
5	QPSK	12	0		17.71	17.85	17.77		
5	QPSK	12	7		17.70	17.80	17.69	19	0
5	QPSK	12	13		17.66	17.77	17.69		
5	QPSK	25	0		17.71	17.63	17.71		
5	16QAM	1	0		17.72	17.68	17.76		
5	16QAM	1	12		17.61	17.73	17.64	19	0
5	16QAM	1	24		17.65	17.75	17.63		
5	16QAM	12	0		17.76	17.91	17.77		
5	16QAM	12	7		17.73	17.85	17.73		
5	16QAM	25	0		17.73	17.84	17.72	19	0
5	64QAM	1	0		17.67	17.76	17.63		
5	64QAM	1	12		17.77	17.91	17.85		
5	64QAM	1	24		17.65	17.65	17.65		
5	64QAM	12	0		17.82	17.91	17.79	19	0
5	64QAM	12	7		17.77	17.86	17.76		
5	64QAM	12	13		17.73	17.63	17.73		
5	64QAM	25	0		17.73	17.63	17.75		
Channel					26055	26340	26675	Turn-up limit (dBm)	MPR (dB)
Frequency (MHz)					1691.5	1680	1691.5		
3	QPSK	1	0		17.75	17.63	17.72	19	0
3	QPSK	1	8		17.67	17.77	17.66		
3	QPSK	1	14		17.62	17.68	17.62		
3	QPSK	8	0		17.67	17.78	17.66		
3	QPSK	8	4		17.67	17.79	17.68	19	0
3	QPSK	8	7		17.64	17.75	17.66		
3	QPSK	15	0		17.63	17.76	17.68		
3	16QAM	1	0		17.66	17.78	17.71		
3	16QAM	1	8		17.71	17.62	17.71	19	0
3	16QAM	1	14		17.57	17.76	17.66		
3	16QAM	8	0		17.68	17.60	17.76		
3	16QAM	8	4		17.68	17.81	17.71		
3	16QAM	8	7		17.65	17.76	17.67	19	0
3	16QAM	15	0		17.67	17.80	17.68		
3	64QAM	1	0		17.82	17.58	17.88		
3	64QAM	1	8		17.82	17.94	17.82		
3	64QAM	1	14		17.77	17.64	17.77	19	0
3	64QAM	8	0		17.74	17.65	17.75		
3	64QAM	8	4		17.71	17.64	17.73		
3	64QAM	8	7		17.67	17.82	17.68		
3	64QAM	15	0		17.65	17.77	17.67	19	0
Channel					26047	26340	26693	Turn-up limit (dBm)	MPR (dB)
Frequency (MHz)					1690.7	1680	1694.3		
1.4	QPSK	1	0		17.64	17.72	17.61	19	0
1.4	QPSK	1	3		17.60	17.71	17.64		
1.4	QPSK	1	5		17.55	17.67	17.57		
1.4	QPSK	3	0		17.62	17.71	17.60		
1.4	QPSK	3	1		17.69	17.77	17.62	19	0
1.4	QPSK	3	3		17.64	17.74	17.61		
1.4	QPSK	6	0		17.58	17.71	17.57		
1.4	16QAM	1	0		17.64	17.75	17.63		
1.4	16QAM	1	3		17.65	17.78	17.67	19	0
1.4	16QAM	1	5		17.63	17.71	17.57		
1.4	16QAM	3	0		17.63	17.75	17.60		
1.4	16QAM	3	1		17.63	17.75	17.65		
1.4	16QAM	3	3		17.60	17.73	17.62	19	0
1.4	16QAM	6	0		17.74	17.82	17.72		
1.4	64QAM	1	0		17.80	17.85	17.77		
1.4	64QAM	1	3		17.82	17.92	17.79		
1.4	64QAM	1	5		17.75	17.90	17.77	19	0
1.4	64QAM	3	0		17.73	17.67	17.73		
1.4	64QAM	3	1		17.74	17.67	17.76		
1.4	64QAM	3	3		17.74	17.81	17.74		
1.4	64QAM	6	0		17.69	17.71	17.67	20.5	0

Band 38(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power Middle Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				37850	38000	38150			
Frequency (MHz)				2580	2595	2610			
20	QPSK	1	0	20.17	19.91	19.93	21	0	
20	QPSK	1	49	20.70	20.41	20.57			
20	QPSK	1	99	20.96	20.27	20.37			
20	QPSK	50	0	20.43	20.43	20.42	21	0	
20	QPSK	50	24	20.67	20.23	20.25			
20	QPSK	50	50	20.39	20.45	20.54			
20	QPSK	100	0	20.57	20.17	20.18	21	0	
20	16QAM	1	0	20.20	19.95	20.23			
20	16QAM	1	49	20.26	20.26	20.30			
20	16QAM	1	99	20.37	20.13	20.20	21	0	
20	16QAM	50	0	19.33	19.48	19.47			
20	16QAM	50	24	19.67	19.18	19.18			
20	16QAM	50	50	19.32	19.51	19.59	21	0	
20	16QAM	100	0	19.39	19.11	19.22			
20	64QAM	1	0	19.50	19.57	19.62			
20	64QAM	1	49	19.73	19.43	19.46	21	0	
20	64QAM	1	99	19.63	19.40	19.48			
20	64QAM	50	0	19.46	19.40	19.39			
20	64QAM	50	24	19.36	19.21	19.12	21	0	
20	64QAM	50	50	19.69	19.44	19.49			
20	64QAM	100	0	19.33	19.16	19.18			
Channel				37825	38050	38175	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2612.5			
15	QPSK	1	0	20.54	20.33	20.40	21	0	
15	QPSK	1	37	20.32	20.10	20.12			
15	QPSK	1	74	20.59	20.33	20.36			
15	QPSK	36	0	20.29	20.16	20.21	21	0	
15	QPSK	36	20	20.38	20.24	20.32			
15	QPSK	36	39	20.42	20.45	20.54			
15	QPSK	75	0	20.44	20.15	20.41	21	0	
15	16QAM	1	0	20.31	20.25	20.26			
15	16QAM	1	37	20.33	19.93	20.20			
15	16QAM	1	74	20.41	20.26	20.29	21	0	
15	16QAM	36	0	19.66	19.24	19.51			
15	16QAM	36	20	19.53	19.33	19.38			
15	16QAM	36	39	19.58	19.20	19.43	21	0	
15	16QAM	75	0	19.58	19.42	19.47			
15	64QAM	1	0	19.49	19.22	19.34			
15	64QAM	1	37	19.30	19.52	19.07	21	0	
15	64QAM	1	74	19.96	19.32	19.59			
15	64QAM	36	0	19.43	19.31	19.37			
15	64QAM	36	20	19.61	19.30	19.51	21	0	
15	64QAM	36	39	19.46	19.22	19.31			
15	64QAM	75	0	19.32	19.25	19.44			
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2575	2595	2615			
10	QPSK	1	0	20.69	20.29	20.33	21	0	
10	QPSK	1	25	20.28	20.34	20.56			
10	QPSK	1	49	20.64	20.27	20.39			
10	QPSK	25	0	20.85	20.41	20.49	21	0	
10	QPSK	25	12	20.80	20.13	20.58			
10	QPSK	25	25	20.44	20.28	20.62			
10	QPSK	50	0	20.63	20.22	20.64	21	0	
10	16QAM	1	0	20.66	20.57	20.54			
10	16QAM	1	25	20.51	20.21	20.59			
10	16QAM	1	49	20.51	20.51	20.65	21	0	
10	16QAM	25	0	19.74	19.35	19.52			
10	16QAM	25	12	19.38	19.51	19.51			
10	16QAM	25	25	19.40	19.45	19.44	21	0	
10	16QAM	50	0	19.48	19.50	19.38			
10	64QAM	1	0	19.84	19.38	19.71			
10	64QAM	1	25	19.76	19.56	19.70	21	0	
10	64QAM	1	49	19.77	19.60	19.74			
10	64QAM	25	0	19.41	19.42	19.50			
10	64QAM	25	12	19.59	19.15	19.59	21	0	
10	64QAM	25	25	19.75	19.44	19.55			
10	64QAM	50	0	19.41	19.24	19.53			
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2617.5			
5	QPSK	1	0	20.48	20.39	20.55	21	0	
5	QPSK	1	12	20.23	20.29	20.31			
5	QPSK	1	24	20.33	20.13	20.41			
5	QPSK	12	0	20.66	20.18	20.56	21	0	
5	QPSK	12	7	20.33	20.33	20.50			
5	QPSK	12	13	20.69	20.24	20.32			
5	QPSK	25	0	20.53	20.16	20.34	21	0	
5	16QAM	1	0	20.64	20.42	20.59			
5	16QAM	1	12	20.56	20.54	20.59			
5	16QAM	1	24	20.52	20.34	20.53	21	0	
5	16QAM	12	0	19.85	19.21	19.38			
5	16QAM	12	7	19.66	19.26	19.51			
5	16QAM	12	13	19.67	19.16	19.53	21	0	
5	16QAM	25	0	19.78	19.21	19.60			
5	64QAM	1	0	19.79	19.36	19.65			
5	64QAM	1	12	19.72	19.89	19.78	21	0	
5	64QAM	1	24	19.80	19.53	19.37			
5	64QAM	12	0	19.54	19.31	19.48			
5	64QAM	12	7	19.54	19.26	19.62	21	0	
5	64QAM	12	13	19.67	19.29	19.55			
5	64QAM	25	0	19.53	19.54	19.62			

Band 41 (2.6G Band)											
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Side Ch./Freq.	Power Middle Ch./Freq.	Power High Side Ch./Freq.	Power High Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel											
	Frequency (MHz)			39750	40185	40600	41055	41490			
20	QPSK	1	0	20.75	20.90	20.51	20.55	20.78	22	0	
20	QPSK	1	49	20.63	20.68	20.75	20.91	21.08			
20	QPSK	1	99	20.30	20.24	20.25	20.47	20.48			
20	QPSK	50	0	20.27	20.39	20.18	20.42	20.51	22	0	
20	QPSK	50	24	20.59	20.40	20.60	20.81	20.91			
20	QPSK	50	50	20.10	20.21	20.09	20.29	20.41			
20	QPSK	100	0	20.35	20.48	20.20	20.57	20.85	22	0	
20	16QAM	1	0	20.81	20.63	20.74	20.77	20.55			
20	16QAM	1	49	20.14	20.13	20.24	20.76	20.76			
20	16QAM	1	99	20.71	20.61	20.66	20.72	21.03	22	0	
20	16QAM	50	0	20.50	20.71	20.29	20.44	20.67			
20	16QAM	50	24	20.54	20.76	20.51	20.51	20.76			
20	16QAM	50	50	20.39	20.62	20.37	20.43	20.61	22	0	
20	16QAM	100	0	20.84	20.54	20.76	20.75	20.69			
20	64QAM	1	0	20.73	20.86	20.52	20.61	20.76			
20	64QAM	1	49	20.56	20.60	20.80	20.95	21.05	22	0	
20	64QAM	1	99	20.40	20.55	20.61	20.52	20.55			
20	64QAM	50	0	20.83	20.90	20.52	20.58	20.74			
20	64QAM	50	24	20.91	20.95	20.83	20.87	20.98	22	0	
20	64QAM	50	50	20.77	20.76	20.82	20.81	20.84			
20	64QAM	100	0	20.78	20.74	20.86	20.83	20.91			
Channel											
	Frequency (MHz)			39725	40173	40600	41068	41515	Tune-up limit (dBm)	MPR (dB)	
15	QPSK	1	0	20.61	20.63	20.63	20.65	20.86	22	0	
15	QPSK	1	37	20.50	20.65	20.49	20.25	20.67			
15	QPSK	1	74	20.39	20.43	20.40	20.48	20.67			
15	QPSK	36	0	20.92	20.97	20.69	20.37	20.68	22	0	
15	QPSK	36	20	20.97	20.97	20.62	20.58	20.67			
15	QPSK	36	39	21.01	21.06	21.00	20.63	20.59			
15	QPSK	75	0	20.84	20.98	20.80	20.45	20.59	22	0	
15	16QAM	1	0	20.50	20.37	20.24	20.37	20.48			
15	16QAM	1	37	20.58	20.77	20.63	20.84	20.71			
15	16QAM	1	74	20.21	20.44	20.50	20.44	20.48	22	0	
15	16QAM	36	0	20.82	20.95	20.68	20.30	20.61			
15	16QAM	36	20	20.90	20.94	20.83	20.57	20.59			
15	16QAM	36	39	20.88	20.94	20.95	20.63	20.58	22	0	
15	16QAM	75	0	20.89	20.94	20.82	20.46	20.50			
15	64QAM	1	0	20.49	20.33	20.20	20.22	20.22			
15	64QAM	1	37	21.01	20.99	20.99	20.91	20.67	22	0	
15	64QAM	1	74	20.24	20.36	20.41	20.40	20.34			
15	64QAM	36	0	20.86	20.92	20.55	21.04	20.96			
15	64QAM	36	20	20.81	20.89	20.61	21.05	21.01	22	0	
15	64QAM	36	39	20.78	20.86	20.86	20.99	20.92			
15	64QAM	75	0	20.90	20.87	20.85	20.92	20.86			
Channel											
	Frequency (MHz)			39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)	
10	QPSK	1	0	20.94	20.99	20.83	20.91	20.96	22	0	
10	QPSK	1	25	21.05	20.67	20.88	20.96	20.87			
10	QPSK	1	49	20.82	20.69	20.76	20.84	20.85			
10	QPSK	25	0	20.42	20.42	20.50	20.50	20.50	22	0	
10	QPSK	25	12	20.57	20.85	20.64	20.63	20.71			
10	QPSK	25	25	20.55	20.78	20.58	20.61	20.71			
10	QPSK	50	0	20.42	20.78	20.55	20.60	20.68	22	0	
10	16QAM	1	0	20.48	20.64	20.37	20.45	20.75			
10	16QAM	1	25	20.51	20.75	20.58	20.58	20.68			
10	16QAM	1	49	20.48	20.67	20.50	20.55	20.70	22	0	
10	16QAM	25	0	20.42	20.84	20.58	20.59	20.73			
10	16QAM	25	12	20.52	20.89	20.63	20.64	20.74			
10	16QAM	25	25	20.51	20.77	20.55	20.64	20.66	22	0	
10	16QAM	50	0	20.46	20.79	20.55	20.60	20.67			
10	64QAM	1	0	20.59	20.96	20.80	20.86	21.08			
10	64QAM	1	25	20.81	20.91	20.76	20.92	20.98	22	0	
10	64QAM	1	49	20.98	20.94	20.78	20.85	21.01			
10	64QAM	25	12	20.95	21.05	20.95	21.01	21.03			
10	64QAM	25	25	20.93	20.98	21.00	20.82	20.98	22	0	
10	64QAM	50	0	20.88	20.96	20.91	20.90	20.89			
Channel											
	Frequency (MHz)			39675	40148	40620	41093	41555	Tune-up limit (dBm)	MPR (dB)	
5	QPSK	1	0	20.68	20.68	20.93	20.60	20.65	22	0	
5	QPSK	1	12	20.93	21.04	20.94	20.92	20.75			
5	QPSK	1	24	20.97	21.01	21.00	20.95	20.94			
5	QPSK	12	0	20.51	20.76	20.64	20.75	20.76	22	0	
5	QPSK	12	7	20.51	20.84	20.56	20.62	20.59			
5	QPSK	12	13	20.42	20.73	20.62	20.58	20.67			
5	QPSK	25	0	20.48	20.83	20.59	20.61	20.72	22	0	
5	16QAM	1	0	20.56	20.81	20.60	20.63	20.73			
5	16QAM	1	12	20.61	20.70	20.73	20.77	20.70			
5	16QAM	1	24	20.46	20.72	20.55	20.61	20.65	22	0	
5	16QAM	12	0	20.46	20.72	20.60	20.59	20.66			
5	16QAM	12	7	20.45	20.71	20.50	20.58	20.62			
5	16QAM	12	13	20.48	20.75	20.56	20.57	20.62	22	0	
5	16QAM	25	0	20.43	20.58	20.60	20.60	20.72			
5	64QAM	1	0	20.61	20.76	20.76	20.79	20.79			
5	64QAM	1	12	20.81	20.77	20.88	20.79	20.85	22	0	
5	64QAM	1	24	20.89	20.92	21.03	20.95	21.01			
5	64QAM	12	0	20.91	20.96	20.99	21.00	21.03			
5	64QAM	12	7	20.94	21.04	21.01	20.81	21.05	22	0	
5	64QAM	12	13	20.86	20.91	20.93	20.96	21.01			
5	64QAM	25	0	20.88	20.96	20.98	20.95	21.00			

UL CA

Full Power Head SAR										Tune up Power (dBm)	
CA_41C											
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					
39750	39948	QPSK	1	49	0	0	1	0	23.73	25.00	
40185	39987	QPSK	1	49	0	0	1	0	23.31	25.00	
40620	40422	QPSK	1	49	0	0	1	0	23.21	25.00	
41055	40857	QPSK	1	49	0	0	1	0	23.18	25.00	
41490	41292	QPSK	1	49	0	0	1	0	23.25	25.00	
Hotspot on Sensor On										Tune up Power (dBm)	
CA_41C											
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					
39750	39948	QPSK	100	0	0	0	1	0	19.83	21.00	
40185	39987	QPSK	100	0	0	0	1	0	19.69	21.00	
40620	40422	QPSK	100	0	0	0	1	0	19.42	21.00	
41055	40857	QPSK	100	0	0	0	1	0	19.5	21.00	
41490	41292	QPSK	100	0	0	0	1	0	19.56	21.00	
Handheld											
CA_41C											
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					
39750	39948	QPSK	50	24	0	0	1	0	20.54	22	
40185	39987	QPSK	50	24	0	0	1	0	20.21	22	
40620	40422	QPSK	50	24	0	0	1	0	20.57	22	
41055	40857	QPSK	50	24	0	0	1	0	20.23	22	
41490	41292	QPSK	50	24	0	0	1	0	20.46	22	



DL CA Full Power															
2CC															
Configure	CA Configuration (BCS)	PCC							SCC				Power		
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)	
Inter-Band	CA_2A-4A	2	20	1860	18700	QPSK	1	0	4	20	2132.5	2175	22.90	22.94	
	CA_2A-5A	2	20	1860	18700	QPSK	1	0	5	10	881.5	2525	22.87	22.94	
	CA_2A-7A	2	20	1860	18700	QPSK	1	0	7	20	2655	3100	22.89	22.94	
	CA_2A-12A	2	20	1860	18700	QPSK	1	0	12	10	737.5	5095	22.91	22.94	
	CA_2A-13A	2	20	1860	18700	QPSK	1	0	13	10	751	5230	22.88	22.94	
	CA_2A-14A	2	20	1860	18700	QPSK	1	0	14	10	763	5330	22.83	22.94	
	CA_2A-17A	2	10	1855	18650	QPSK	1	0	17	10	740	5790	22.72	22.81	
	CA_2A-29A	2	20	1860	18700	QPSK	1	0	29	10	722.5	9715	22.84	22.94	
	CA_2A-30A	2	20	1860	18700	QPSK	1	0	30	10	2355	9820	22.78	22.94	
	CA_2A-66A	2	20	1860	18700	QPSK	1	0	66	20	2155	66886	22.90	22.94	
	CA_2A-71A	2	20	1860	18700	QPSK	1	0	71	20	637	68786	22.69	22.94	
	CA_4A-5A	4	20	1732.5	20175	QPSK	1	99	5	10	881.5	2525	22.67	22.98	
	CA_4A-7A	4	20	1732.5	20175	QPSK	1	99	7	20	2655	3100	22.54	22.98	
	CA_4A-12A	4	20	1732.5	20175	QPSK	1	99	12	10	737.5	5095	22.74	22.98	
	CA_4A-13A	4	20	1732.5	20175	QPSK	1	99	13	10	751	5230	22.69	22.98	
	CA_4A-17A	4	10	1732.5	20175	QPSK	1	0	17	10	740	5790	22.40	22.98	
	CA_4A-29A	4	20	1732.5	20175	QPSK	1	99	29	10	722.5	9715	22.74	22.98	
	CA_4A-30A	4	20	1732.5	20175	QPSK	1	99	30	10	2355	9820	22.91	22.98	
	CA_4A-71A	4	20	1732.5	20175	QPSK	1	99	71	20	637	68786	22.58	22.98	
	CA_5A-7A	5	10	836.5	20525	QPSK	1	49	7	20	2655	3100	22.77	23.01	
	CA_5A-30A	5	10	836.5	20525	QPSK	1	49	30	10	2355	9820	22.98	23.01	
	CA_5A-66A	5	10	836.5	20525	QPSK	1	49	66	20	2155	66886	22.93	23.01	
	CA_7A-12A	7	20	2560	21350	QPSK	1	99	12	10	737.5	5095	23.04	23.46	
	CA_7A-66A	7	20	2560	21350	QPSK	1	99	66	20	2155	66886	23.05	23.46	
	CA_12A-30A	12	10	707.5	23095	QPSK	1	0	30	10	2355	9820	22.86	22.90	
	CA_12A-66A	12	10	707.5	23095	QPSK	1	0	66	20	2155	66886	22.75	22.90	
	CA_13A-66A	13	10	782	23230	QPSK	1	0	66	20	2155	66886	22.56	22.63	
	CA_14A-30A	14	10	793	23330	QPSK	1	49	30	10	2355	9820	22.65	22.72	
	CA_14A-66A	14	10	793	23330	QPSK	1	49	66	20	2155	66886	22.68	22.72	
	CA_25A-26A	25	20	1905	26590	QPSK	1	0	26	15	876.5	8865	22.78	22.93	
	CA_25A-41A	25	20	1905	26590	QPSK	1	0	41	20	2593	40620	22.82	22.93	
	CA_26A-41A	26	15	831.5	26865	QPSK	1	74	41	20	2593	40620	22.50	23.08	
	CA_29A-30A	30	10	2310	27710	QPSK	1	0	29	10	722.5	9715	22.71	22.92	
	CA_29A-66A	66	20	1770	132572	QPSK	1	99	29	10	722.5	9715	23.15	23.36	
	CA_30A-66A	30	10	2310	27710	QPSK	1	0	66	20	2155	66886	22.87	22.92	
	CA_66A-71A	66	20	1770	132572	QPSK	1	99	71	20	637	68786	23.23	23.36	
Inter-Band	Non-Contiguous	CA_2A-2A	2	20	1860	18700	QPSK	1	0	2	5	1987.5	1175	22.87	22.94
		CA_4A-4A	4	20	1732.5	20175	QPSK	1	99	4	5	2152.5	2375	22.53	22.98
		CA_7A-7A	7	20	2560	21350	QPSK	1	99	7	5	2622.5	2775	23.01	23.46
		CA_25A-25A	25	20	1905	26590	QPSK	1	0	25	5	1932.5	8065	22.77	22.93
		CA_41A-41A	41	20	2680	39750	QPSK	1	49	41	5	2498.5	41565	23.91	24.02
		CA_66A-66A	66	20	1770	132572	QPSK	1	99	66	5	2112.5	66461	23.19	23.36
	Contiguous	CA_2C	2	20	1860	18700	QPSK	1	0	2	20	1959.80	898	22.82	22.94
		CA_5B	5	10	836.5	20501	QPSK	1	49	5	10	891.40	20600	22.75	23.01
		CA_7C	7	20	2560	21350	QPSK	1	99	7	20	2660.20	3152	22.97	23.46
		CA_12B	12	5	707.5	23058	QPSK	1	0	12	10	744.70	23130	22.78	22.90
		CA_38C	38	20	2580	37850	QPSK	1	99	38	20	2599.80	38048	23.17	23.29
		CA_41C	41	20	2680	39750	QPSK	1	49	41	20	2660.20	39948	23.78	24.02
CA_66B	66	15	1772.5	132597	QPSK	1	74	66	5	2188.20	67218	23.08	23.14		
CA_66C	66	20	1770	132072	QPSK	1	99	66	20	2170.20	132270	23.25	23.36		



Bluetooth BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)									Tune-up Limit
			Packet Type									
			DH1	DH3	DH5	2DH1	2DH3	2DH5	3DH1	3DH3	3DH5	
Bluetooth	CH 0	2402	8.20	8.24	8.32	6.27	5.69	5.22	6.25	5.51	5.34	10
	CH 39	2441	8.92	8.94	9.31	6.71	6.51	5.86	6.66	6.10	5.91	
	CH 78	2480	8.47	8.77	9.19	7.32	6.82	6.55	6.86	6.57	6.24	

Bluetooth LE

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	2.45
	CH 19	2440	3.49
	CH 39	2480	4.56
Tune-up Limit			5

Bluetooth LE v5.0

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402		2.82
	CH 19	2440		3.57
	CH 39	2480		4.70
Tune-up Limit				5

Full Power						
2.4GHz WLAN	Ant 1					
2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11b 1Mbps	1	2412	21.07	22.50	100.00
		6	2437	20.94	22.50	
		11	2462	21.11	22.50	
	802.11g 6Mbps	1	2412	19.03	20.50	98.28
		6	2437	18.90	20.50	
		11	2462	19.19	20.50	
	802.11n-HT20 MCS0	1	2412	18.87	20.50	98.15
		6	2437	18.77	20.50	
		11	2462	19.10	20.50	

5GHz WLAN	Ant 1					
5.2GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	36	5180	17.22	19.00	98.28
		40	5200	17.97	19.50	
		44	5220	17.90	19.50	
		48	5240	17.87	19.50	
	802.11n-HT20 MCS0	36	5180	16.30	18.00	98.16
		40	5200	16.75	18.50	
		44	5220	16.67	18.50	
		48	5240	16.81	18.50	
	802.11n-HT40 MCS0	38	5190	10.85	12.50	96.76
		46	5230	16.23	18.00	
		36	5180	16.34	18.00	
		40	5200	16.98	18.50	
	802.11ac-VHT20 MCS0	44	5220	16.88	18.50	98.01
		48	5240	16.87	18.50	
		38	5190	10.80	12.50	
		46	5230	15.75	17.50	
	802.11ac-VHT40 MCS0	42	5210	10.42	12.00	93.08

5GHz WLAN	Ant 1					
5.3GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	52	5260	17.80	19.50	98.28
		56	5280	17.84	19.50	
		60	5300	17.91	19.50	
		64	5320	17.86	19.50	
	802.11n-HT20 MCS0	52	5260	16.81	18.50	98.16
		56	5280	16.92	18.50	
		60	5300	17.00	18.50	
		64	5320	16.95	18.50	
	802.11n-HT40 MCS0	54	5270	16.43	18.00	96.76
		62	5310	15.26	17.00	
		52	5260	16.85	18.50	
		56	5280	16.95	18.50	
	802.11ac-VHT20 MCS0	60	5300	16.92	18.50	98.01
		64	5320	16.98	18.50	
		54	5270	15.72	17.50	
		62	5310	15.89	17.50	
	802.11ac-VHT40 MCS0	58	5290	14.54	16.50	93.08

5GHz WLAN	Ant 1					
5.5GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	100	5500	17.91	19.50	98.28
		116	5580	17.94	19.50	
		132	5660	18.17	19.50	
		140	5700	18.10	19.50	
	802.11n-HT20 MCS0	100	5500	16.72	18.50	98.16
		116	5580	16.96	18.50	
		132	5660	16.92	18.50	
		140	5700	16.86	18.50	
	802.11n-HT40 MCS0	102	5510	16.37	18.00	96.76
		110	5550	16.35	18.00	
		134	5670	15.75	17.50	
		100	5500	16.90	18.50	
	802.11ac-VHT20 MCS0	116	5580	16.98	18.50	98.01
		132	5660	17.04	18.50	
		140	5700	16.91	18.50	
		102	5510	15.67	17.50	
	802.11ac-VHT40 MCS0	110	5550	15.62	17.50	96.47
		134	5670	15.85	17.50	
		106	5530	14.00	15.00	

5GHz WLAN	Ant 1					
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	149	5745	15.87	17.50	98.28
		157	5785	15.44	16.50	
		165	5825	15.24	16.50	
	802.11n-HT20 MCS0	149	5745	15.70	17.50	98.16
		157	5785	15.29	16.50	
		165	5825	15.07	16.50	
	802.11n-HT40 MCS0	151	5755	14.57	16.50	96.76
		159	5795	14.13	15.50	
	802.11ac-VHT20 MCS0	149	5745	15.70	17.50	98.01
		157	5785	15.30	16.50	
		165	5825	15.11	16.50	
	802.11ac-VHT40 MCS0	151	5755	14.64	16.50	96.47
		159	5795	14.18	15.50	
		155	5775	14.79	16.50	

Reduced Power Mode for Head						
2.4GHz WLAN	Ant 1					
2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11b 1Mbps	1	2412	18.26	20.00	100.00
		6	2437	18.21	20.00	
		11	2462	18.31	20.00	
	802.11g 6Mbps	1	2412	18.60	20.00	98.28
		6	2437	18.70	20.00	
		11	2462	18.91	20.00	
	802.11n-HT20 MCS0	1	2412	18.46	20.00	98.15
		6	2437	18.48	20.00	
		11	2462	18.70	20.00	

Reduced Power Mode for Hotspot On

2.4GHz WLAN	Ant 1					
2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11b 1Mbps	1	2412	19.49	21.00	100.00
		6	2437	19.28	21.00	
		11	2462	19.64	21.00	
	802.11g 6Mbps	1	2412	19.03	20.50	98.28
		6	2437	18.90	20.50	
		11	2462	19.19	20.50	
	802.11n-HT20 MCS0	1	2412	18.87	20.50	98.15
		6	2437	18.77	20.50	
		11	2462	19.10	20.50	

5GHz WLAN	Ant 1					
5.2GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	36	5180	9.69	11.00	98.28
		40	5200	9.56	11.00	
		44	5220	9.66	11.00	
		48	5240	9.53	11.00	
	802.11n-HT20 MCS0	36	5180	8.44	10.00	98.16
		40	5200	8.40	10.00	
		44	5220	8.37	10.00	
		48	5240	8.56	10.00	
	802.11n-HT40 MCS0	38	5190	7.88	9.50	96.76
		46	5230	8.06	9.50	
	802.11ac-VHT20 MCS0	36	5180	8.54	10.00	98.01
		40	5200	8.40	10.00	
		44	5220	8.33	10.00	
		48	5240	8.38	10.00	
	802.11ac-VHT40 MCS0	38	5190	7.44	9.00	96.47
		46	5230	7.70	9.00	
	802.11ac-VHT80 MCS0	42	5210	7.80	9.50	93.08

5GHz WLAN	Ant 1					
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	149	5745	9.69	11.00	98.28
		157	5785	8.73	10.00	
		165	5825	8.89	10.00	
	802.11n-HT20 MCS0	149	5745	9.27	11.00	98.16
		157	5785	8.91	10.00	
		165	5825	8.72	10.00	
	802.11n-HT40 MCS0	151	5755	8.19	9.50	96.76
		159	5795	7.56	8.50	
	802.11ac-VHT20 MCS0	149	5745	9.37	11.00	98.01
		157	5785	8.75	10.00	
		165	5825	8.61	10.00	
	802.11ac-VHT40 MCS0	151	5755	8.31	9.50	96.47
		159	5795	7.57	8.50	
	802.11ac-VHT80 MCS0	155	5775	8.23	9.50	93.08

Reduced Power Mode for P-Sensor On

2.4GHz WLAN		Ant 1				
2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11b 1Mbps	1	2412	20.09	21.50	100.00
		6	2437	20.05	21.50	
		11	2462	20.12	21.50	
	802.11g 6Mbps	1	2412	19.03	20.50	98.28
		6	2437	18.90	20.50	
		11	2462	19.19	20.50	
	802.11n-HT20 MCS0	1	2412	18.87	20.50	98.15
		6	2437	18.77	20.50	
		11	2462	19.10	20.50	

5GHz WLAN		Ant 1				
5.2GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	36	5180	9.69	11.00	98.28
		40	5200	9.56	11.00	
		44	5220	9.66	11.00	
		48	5240	9.53	11.00	
	802.11n-HT20 MCS0	36	5180	8.44	10.00	98.16
		40	5200	8.40	10.00	
		44	5220	8.37	10.00	
		48	5240	8.56	10.00	
	802.11n-HT40 MCS0	38	5190	7.88	9.50	96.76
		46	5230	8.06	9.50	
	802.11ac-VHT20 MCS0	36	5180	8.54	10.00	98.01
		40	5200	8.40	10.00	
		44	5220	8.33	10.00	
		48	5240	8.38	10.00	
	802.11ac-VHT40 MCS0	38	5190	7.44	9.00	96.47
		46	5230	7.57	9.00	
	802.11ac-VHT80 MCS0	42	5210	7.80	9.50	93.08

5GHz WLAN		Ant 1				
5.3GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	52	5260	9.17	11.00	98.28
		56	5280	9.22	11.00	
		60	5300	9.55	11.00	
		64	5320	9.41	11.00	
	802.11n-HT20 MCS0	52	5260	8.11	10.00	98.16
		56	5280	8.37	10.00	
		60	5300	8.40	10.00	
		64	5320	8.62	10.00	
	802.11n-HT40 MCS0	54	5270	8.10	9.50	96.76
		62	5310	8.38	9.50	
	802.11ac-VHT20 MCS0	52	5260	8.44	10.00	98.01
		56	5280	8.45	10.00	
		60	5300	8.56	10.00	
		64	5320	8.67	10.00	
	802.11ac-VHT40 MCS0	54	5270	7.33	9.00	96.47
		62	5310	7.59	9.00	
	802.11ac-VHT80 MCS0	58	5290	8.65	9.50	93.08

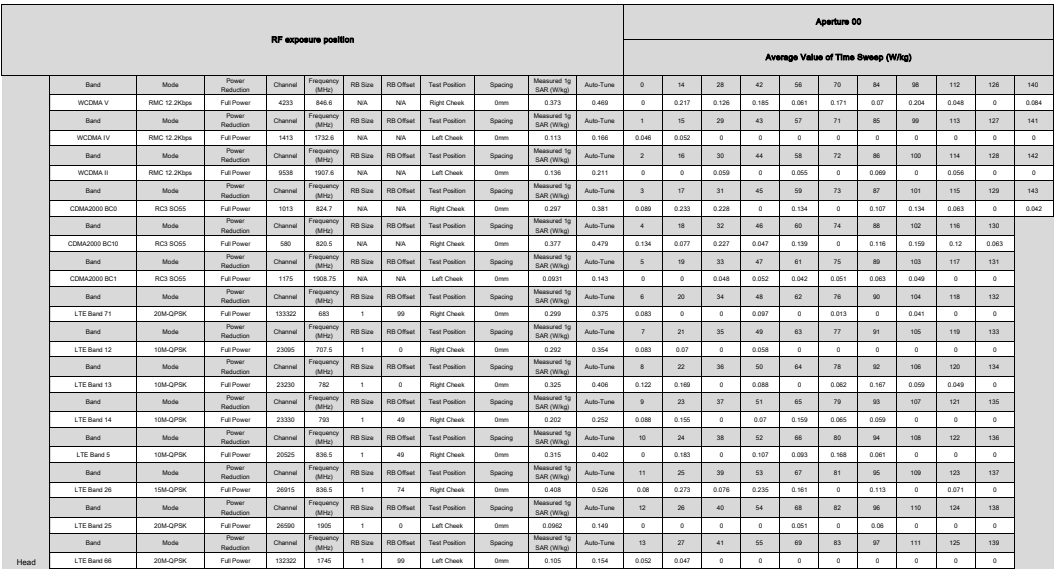
5GHz WLAN		Ant 1				
5.5GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	100	5500	9.99	11.50	98.28
		116	5580	10.06	11.50	
		132	5660	10.09	11.50	
		140	5700	10.11	11.50	
	802.11n-HT20 MCS0	100	5500	9.24	10.50	98.16
		116	5580	9.55	10.50	
		132	5660	9.36	10.50	
		140	5700	9.30	10.50	
	802.11n-HT40 MCS0	102	5510	8.89	10.00	96.76
		110	5550	8.83	10.00	
		134	5670	8.55	9.50	
		100	5500	9.50	10.50	98.01
	802.11ac-VHT20 MCS0	116	5580	9.60	10.50	
		132	5660	9.60	10.50	
		140	5700	9.58	10.50	
	802.11ac-VHT40 MCS0	102	5510	8.22	9.50	96.47
		110	5550	8.20	9.50	
		134	5670	8.30	9.50	
	802.11ac-VHT80 MCS0	106	5530	6.70	7.00	93.08

5GHz WLAN		Ant 1				
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	149	5745	9.69	11.00	98.28
		157	5785	8.73	10.00	
		165	5825	8.89	10.00	
	802.11n-HT20 MCS0	149	5745	9.27	11.00	98.16
		157	5785	8.91	10.00	
		165	5825	8.72	10.00	
	802.11n-HT40 MCS0	151	5755	8.19	9.50	96.76
		159	5795	7.56	8.50	
		149	5745	9.37	11.00	98.01
	802.11ac-VHT20 MCS0	157	5785	8.75	10.00	
		165	5825	8.61	10.00	
	802.11ac-VHT40 MCS0	151	5755	8.31	9.50	96.47
		159	5795	7.57	8.50	
		155	5775	8.23	9.50	



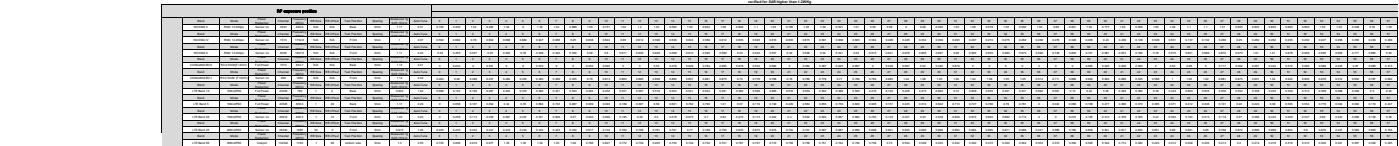
Appendix F. Supplemental Tuner Head & Body SAR Results

The results are shown as follows.





RF exposure position											Aperture 00															
											Average Value of Time Sweep (W/kg)															
Body	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	0	14	28	42	56	70	84	98	112	126	140				
	WCDMA V	RMC 12.2Kbps	sensor	4233	816.5	NA	NA	Back	5mm	1.11	2.31	0.163	0.573	0	0.509	0.55	0.538	0.185	0.61	0.13	0	0.243				
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	1	15	29	43	57	71	85	99	113	127	141				
	WCDMA IV	RMC 12.2Kbps	sensor	1513	1752.6	NA	NA	Front	5mm	1.60	2.67	0.746	0.694	0.404	0.539	0.527	0.13	0.195	0.255	0.131	0.097	0.097				
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	2	16	30	44	58	72	86	100	114	128	142				
	WCDMA I	RMC 12.2Kbps	sensor	9538	1907.6	NA	NA	Front	5mm	1.11	2.44	0.34	0.593	1.01	0.538	0.556	0.35	1.01	0.458	0.804	0.271	0.273				
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	3	17	31	45	59	73	87	101	115	129	143				
	CDMA2000 B2Q	RC1 SC133(F+RCH)	Full power	1013	824.7	NA	NA	Back	5mm	1.13	2.21	0.331	0.958	0.853	0.074	0.072	0	0.451	0.331	0.3	0.187	0.249				
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	4	18	32	46	60	74	88	102	116	130					
	CDMA2000 BC10	RC1 SC133(F+RCH)	Full power	580	820.5	NA	NA	Back	5mm	1.01	2.17	0.451	0.171	0.85	0.127	0.125	0.082	0.454	0.5	0.549	0.241					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	5	19	33	47	61	75	89	103	117	131					
	CDMA2000 BC1	RC1 SC133(F+RCH)	sensor	800	1585	NA	NA	Front	5mm	1.14	2.42	0.476	0.745	1.1	0.863	0.863	0.87	0.841	0.411	0.168	0.324					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	6	20	34	48	62	76	90	104	118	132					
	LTE Band 71	20M-QPSK	Full power	13352	683	1	99	Back	5mm	0.141	1.63	0.321	0.099	0.139	0.385	0.267	0.086	0	0.183	0	0.042					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	7	21	35	49	63	77	91	105	119	133					
	LTE Band 12	10M-QPSK	Full power	23955	707.5	1	0	Back	5mm	0.707	1.44	0.363	0.342	0.337	0.238	0.234	0.14	0	0.122	0.103	0.064					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	8	22	36	50	64	78	92	106	120	134					
	LTE Band 13	10M-QPSK	Full power	21225	782	1	0	Back	5mm	0.904	1.94	0.57	0.569	0.061	0.327	0.331	0.242	0.388	0.244	0.166	0.134					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	9	23	37	51	65	79	93	107	121	135					
	LTE Band 14	10M-QPSK	Full power	23330	793	1	49	Back	5mm	0.718	1.5	0.212	0.49	0.048	0.274	0.274	0.241	0.196	0.134	0.092	0					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	10	24	38	52	66	80	94	108	122	136					
	LTE Band 5	10M-QPSK	Full power	20525	836.5	1	49	Back	5mm	1.17	2.29	0.105	0.734	0.058	0.498	0.505	0.758	0.229	0	0.152	0.041					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	11	25	39	53	67	81	95	109	123	137					
	LTE Band 26	15M-QPSK	sensor	20915	826.5	1	74	Front	5mm	1.55	2.23	0.193	0.731	0.2	0.761	0.786	0	0.326	0	0.268	0.079					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	12	26	40	54	68	82	96	110	124	138					
	LTE Band 25	20M-QPSK	sensor	26340	1880	50	0	Front	5mm	0.914	1.95	0.836	0.757	0.869	0.945	0.55	0.966	0.750	0.202	0.301	0.16					
	Band	Mode	Power Reduction	Channel	Frequency (MHz)	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Auto-Tune	13	27	41	55	69	83	97	111	125	139					
	LTE Band 66	20M-QPSK	hotspot	13232	1745	1	99	bottom side	5mm	1.3	2.55	0.964	0.758	0.734	0.405	0.415	0.118	0.291	0.177	0.148	0.107					





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