

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

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

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

2. Common mode sensitivity

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

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

3. Channel separation

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

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

4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	16191	14008
Channel Y	16286	16249
Channel Z	16106	15261

5. Input Offset Measurement

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

Input 10M Ω

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

6. Input Offset Current

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

7. Input Resistance (Typical values for information)

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

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

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

9. Power Consumption (Typical values for information)

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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **EX3-3843_Sep20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3843**

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

Calibration date: **September 23, 2020**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	31-Mar-20 (No. 217-03106)	Apr-21
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

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



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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,y,z}**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3843

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.34	0.36	0.26	± 10.1 %
DCP (mV) ^B	110.3	104.4	106.5	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	187.4	± 2.2 %	± 4.7 %
		Y	0.0	0.0	1.0		173.2		
		Z	0.0	0.0	1.0		179.7		

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:3843

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	146.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3843

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	9.06	9.06	9.06	0.36	1.11	± 12.0 %
835	41.5	0.90	8.69	8.69	8.69	0.35	1.01	± 12.0 %
900	41.5	0.97	8.62	8.62	8.62	0.41	0.96	± 12.0 %
1450	40.5	1.20	7.82	7.82	7.82	0.47	0.80	± 12.0 %
1750	40.1	1.37	7.72	7.72	7.72	0.30	0.88	± 12.0 %
1900	40.0	1.40	7.41	7.41	7.41	0.27	0.88	± 12.0 %
2000	40.0	1.40	7.39	7.39	7.39	0.32	0.88	± 12.0 %
2300	39.5	1.67	7.06	7.06	7.06	0.28	0.90	± 12.0 %
2450	39.2	1.80	6.85	6.85	6.85	0.21	0.90	± 12.0 %
2600	39.0	1.96	6.76	6.76	6.76	0.41	0.90	± 12.0 %
5250	35.9	4.71	4.66	4.66	4.66	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.30	4.30	4.30	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.35	4.35	4.35	0.40	1.80	± 13.1 %

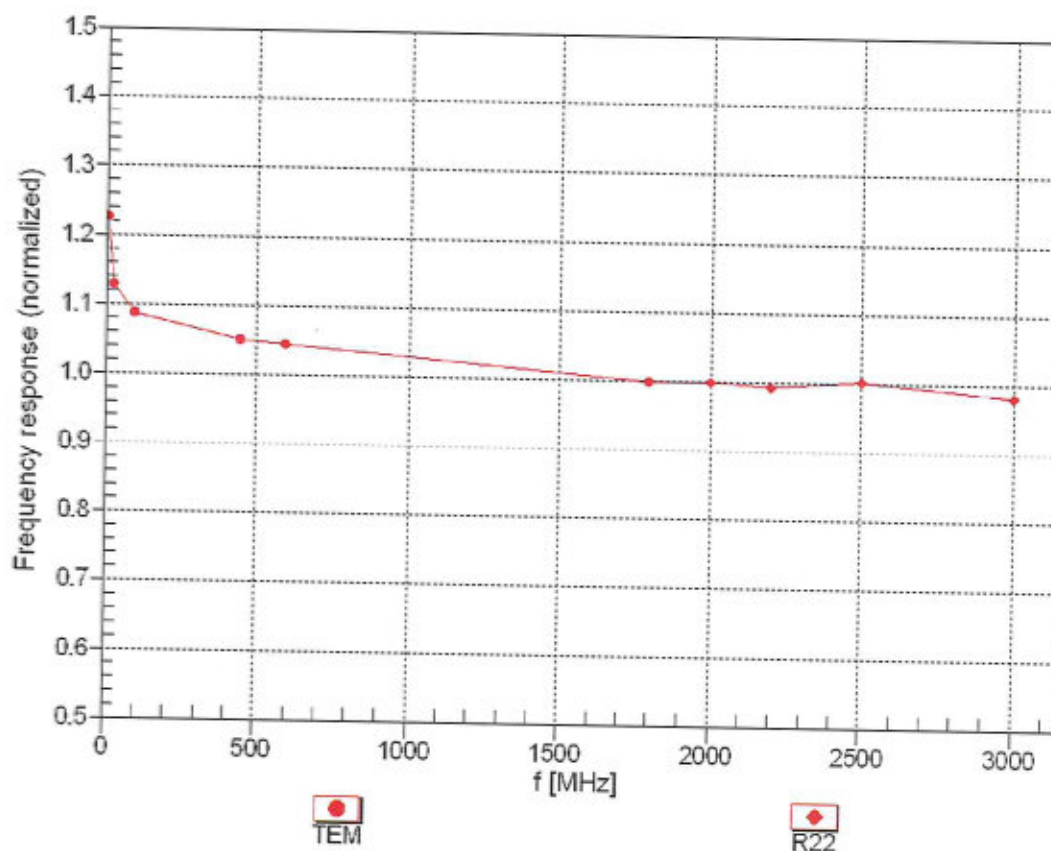
^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 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 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 frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

Frequency Response of E-Field

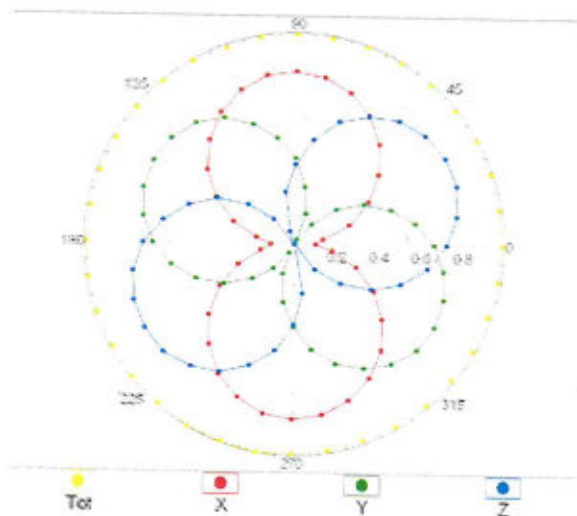
(TEM-Cell: ifi110 EXX, Waveguide: R22)



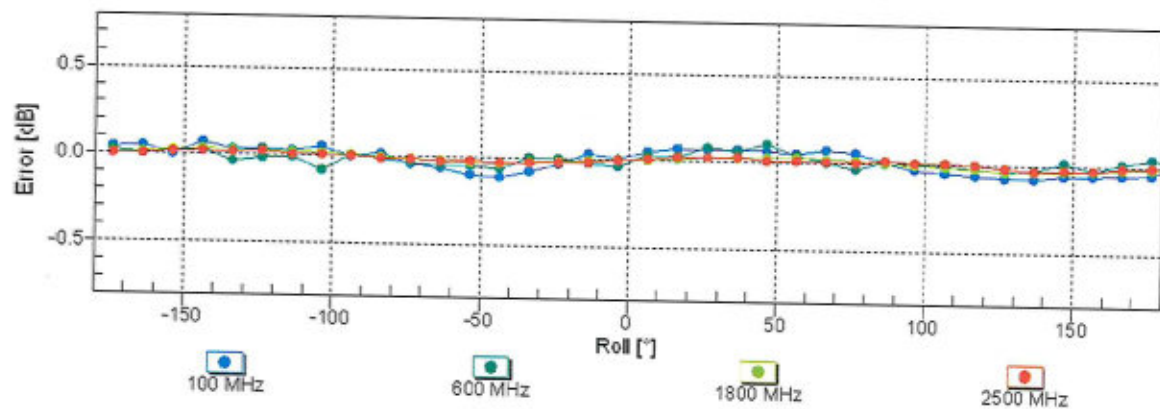
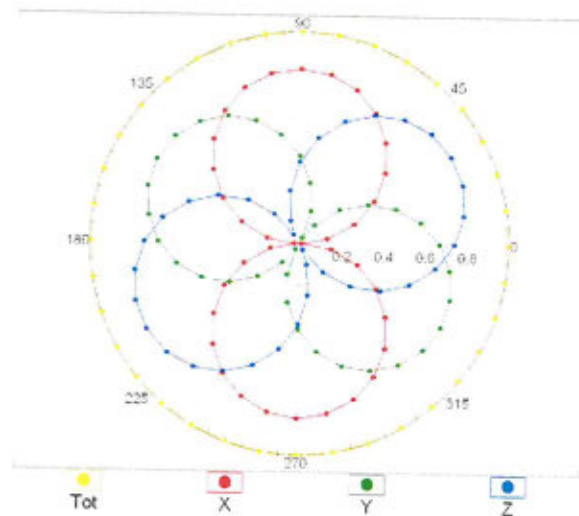
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

f=600 MHz, TEM

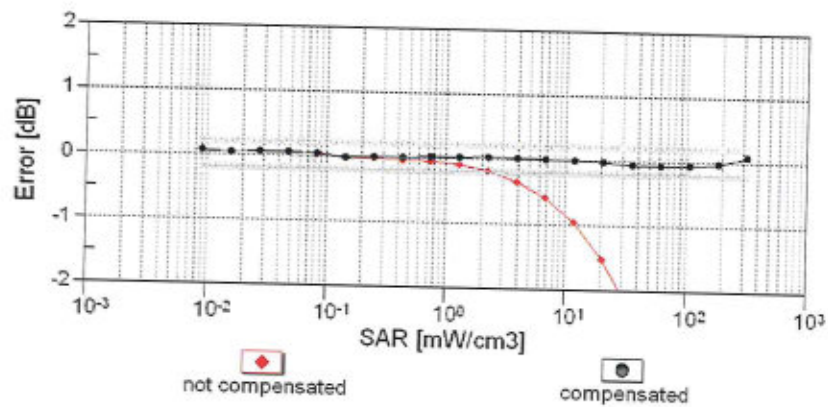
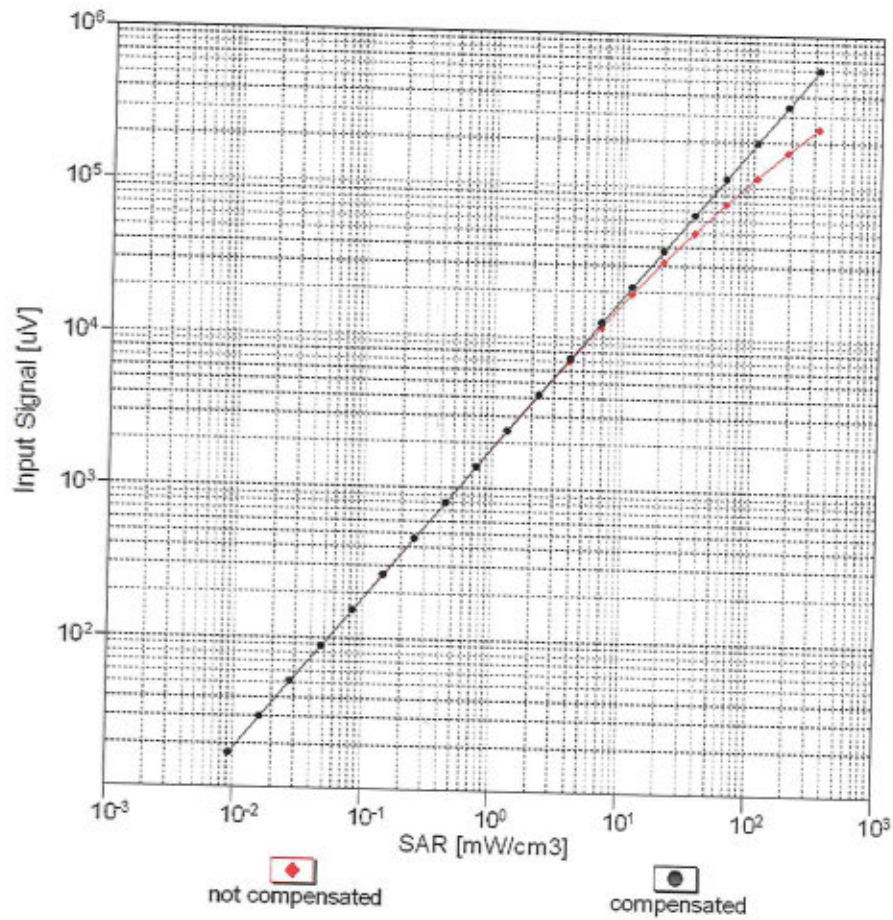


f=1800 MHz, R22



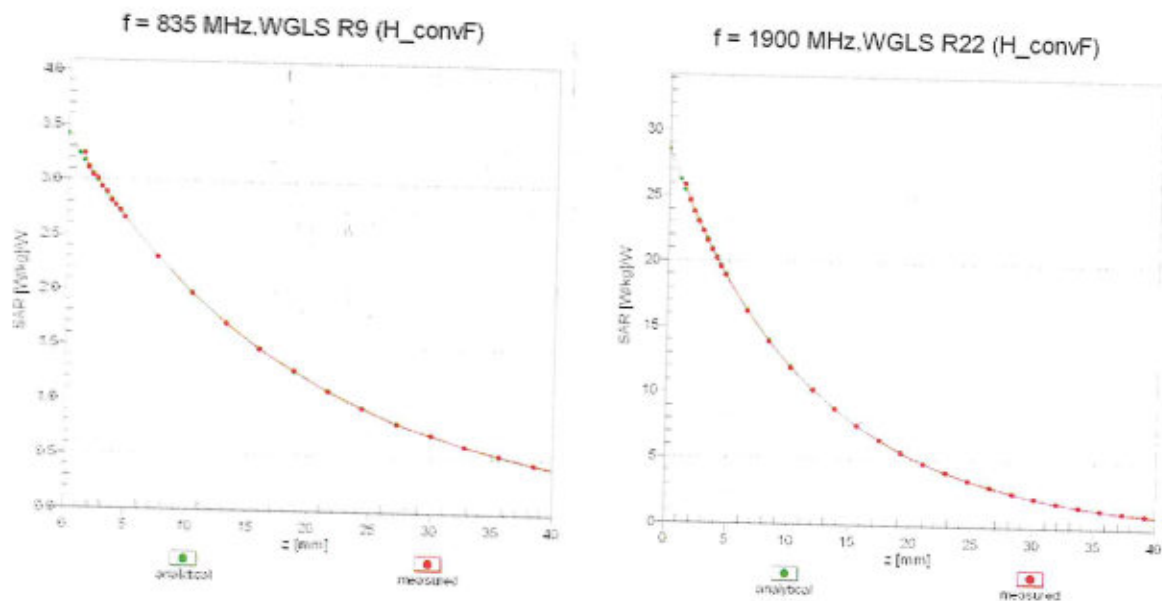
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



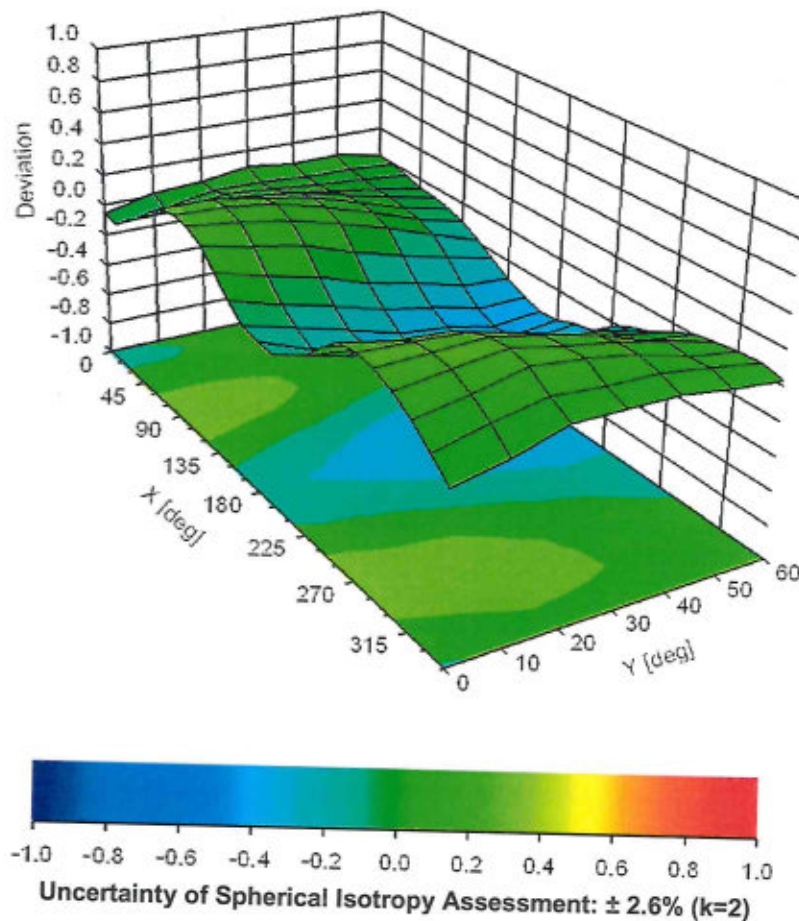
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.

Receiver On/Hotspot On/Receiver Off / Extremity

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
TX Channel	824.2	836.4	848.8		824.2	836.4	848.8	
Frequency (MHz)	824.2	836.4	848.8	33.50	23.83	23.82	23.76	24.50
GSM 1 Tx slot	32.83	32.82	32.76	33.50	23.83	23.82	23.76	24.50
GPRS 1 Tx slot	32.81	32.85	32.77	33.50	23.81	23.85	23.77	24.50
GPRS 2 Tx slots	32.02	32.05	31.97	32.50	26.02	26.05	25.97	26.50
GPRS 3 Tx slots	30.27	30.32	30.21	31.00	26.01	26.06	25.95	26.74
GPRS 4 Tx slots	29.35	29.36	29.26	30.00	26.35	26.36	26.26	27.00
EDGE 1 Tx slot	26.91	27.04	26.93	27.50	17.91	18.04	17.93	18.50
EDGE 2 Tx slots	25.51	25.68	25.49	26.50	19.51	19.68	19.49	20.50
EDGE 3 Tx slots	23.11	23.25	23.13	24.00	18.85	18.99	18.87	19.74
EDGE 4 Tx slots	22.05	22.09	22.01	22.50	19.05	19.09	19.01	19.50

Receiver On

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	681	810		512	681	810	
TX Channel	1850.2	1880	1909.8		1850.2	1880	1909.8	
Frequency (MHz)	1850.2	1880	1909.8	30.50	21.07	21.09	21.09	21.50
GSM 1 Tx slot	30.07	30.09	30.06	30.50	21.07	21.09	21.09	21.50
GPRS 1 Tx slot	30.06	30.04	30.08	30.50	21.06	21.04	21.08	21.50
GPRS 2 Tx slots	29.26	29.23	29.32	29.50	23.26	23.23	23.32	23.50
GPRS 3 Tx slots	27.45	27.45	27.54	28.50	23.19	23.19	23.28	24.24
GPRS 4 Tx slots	26.29	26.43	26.42	27.50	23.29	23.43	23.42	24.50
EDGE 1 Tx slot	26.39	26.26	26.01	27.00	17.39	17.26	17.01	18.00
EDGE 2 Tx slots	25.44	25.28	25.04	26.00	19.44	19.28	19.04	20.00
EDGE 3 Tx slots	23.42	23.26	23.03	24.00	19.16	19.00	18.77	19.74
EDGE 4 Tx slots	22.37	22.22	21.95	23.00	19.37	19.22	18.95	20.00

Receiver On

Receiver On/Hotspot On/Receiver Off / Extremity

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		4132	4182	4233	
Rx Channel		9662	9800	9938		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	23.83	23.80	23.77	24.50	23.27	23.26	23.25	24.50
3GPP Rel 99	AMR 12.2Kbps	23.84	23.85	23.76	24.50	23.29	23.30	23.27	24.50
3GPP Rel 6	HSDPA Subtest-1	22.72	22.72	22.58	23.50	22.46	22.36	22.37	23.50
3GPP Rel 6	HSDPA Subtest-2	22.71	22.58	22.45	23.50	22.43	22.30	22.24	23.50
3GPP Rel 6	HSDPA Subtest-3	22.22	22.07	21.95	23.00	21.91	21.82	21.77	23.00
3GPP Rel 6	HSDPA Subtest-4	22.13	22.07	21.97	23.00	21.89	21.77	21.72	23.00
3GPP Rel 8	DC-HSDPA Subtest-1	22.69	22.70	22.53	23.50	22.41	22.33	22.35	23.50
3GPP Rel 8	DC-HSDPA Subtest-2	22.68	22.56	22.40	23.50	22.38	22.27	22.22	23.50
3GPP Rel 8	DC-HSDPA Subtest-3	22.19	22.05	21.90	23.00	21.86	21.79	21.75	23.00
3GPP Rel 8	DC-HSDPA Subtest-4	22.10	22.05	21.92	23.00	21.84	21.74	21.70	23.00
3GPP Rel 6	HSUPA Subtest-1	22.71	22.68	22.53	23.50	22.44	22.43	22.40	23.50
3GPP Rel 6	HSUPA Subtest-2	20.67	20.64	20.59	21.50	20.48	20.38	20.37	21.50
3GPP Rel 6	HSUPA Subtest-3	21.72	21.63	21.57	22.50	21.47	21.49	21.44	22.50
3GPP Rel 6	HSUPA Subtest-4	20.17	20.10	20.08	21.50	19.98	19.96	19.96	21.50
3GPP Rel 6	HSUPA Subtest-5	22.58	22.62	22.48	23.50	22.48	22.37	22.28	23.50
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	20.61	20.45	20.33	21.00	20.12	20.33	20.40	21.00



Band 2 Receiver On									
BW (MHz)	Modulation	RB Size	RB Offset	Power Ch / Freq 18670	Power Hsp / Freq 18670	Power Ext / Freq 19100	Turnup (dBm)	MFR (dB)	
Channel Frequency (MHz)									
20	QPSK	1	0	23.03	23.03	23.21			
20	QPSK	1	49	23.33	23.38	23.30	24	0	
20	QPSK	1	99	23.12	23.12	23.22			
20	QPSK	50	0	22.35	22.36	22.34			
20	QPSK	50	24	22.26	22.27	22.28			23
20	QPSK	50	50	22.27	22.29	22.23			
20	QPSK	100	0	22.28	22.28	22.28			
20	QPSK	100	24	21.34	21.39	21.31			23
20	QPSK	1	49	22.07	22.07	22.48			
20	QPSK	1	99	22.12	22.17	22.16			
20	QPSK	50	0	21.26	21.29	21.25			22
20	QPSK	50	24	21.28	21.29	21.25			
20	QPSK	50	50	21.27	21.16	21.36			21
20	QPSK	100	0	20.52	20.47	20.48			
Channel Frequency (MHz)									
15	QPSK	1	0	23.17	23.17	23.14			
15	QPSK	1	37	23.36	23.33	23.32	24	0	
15	QPSK	1	74	23.16	23.12	23.27			
15	QPSK	36	0	22.32	22.29	22.27			
15	QPSK	36	20	22.28	22.27	22.27			23
15	QPSK	36	50	22.27	22.29	22.23			
15	QPSK	75	0	22.28	22.29	22.25			
15	QPSK	1	0	22.39	22.37	22.36			23
15	QPSK	1	37	21.34	21.39	21.34			
15	QPSK	1	74	22.34	22.29	22.23			
15	QPSK	36	0	21.31	21.25	21.23			22
15	QPSK	36	20	21.27	21.25	21.24			
15	QPSK	36	50	21.22	21.19	21.21			
15	QPSK	75	0	21.27	21.24	21.22			22
15	QPSK	1	0	21.79	21.72	21.71			
15	QPSK	1	25	21.63	21.67	21.63			22
15	QPSK	1	49	21.53	21.57	21.64			
15	QPSK	25	0	20.62	20.61	20.65			21
15	QPSK	25	12	20.43	20.45	20.53			
15	QPSK	25	25	20.32	20.41	20.34			
15	QPSK	50	0	20.59	20.47	20.49			
Channel Frequency (MHz)									
10	QPSK	1	0	23.14	23.10	23.09			
10	QPSK	1	8	23.39	23.33	23.32	24	0	
10	QPSK	1	25	23.32	23.30	23.25			
10	QPSK	1	49	23.08	23.09	23.16			
10	QPSK	25	0	22.27	22.26	22.26			
10	QPSK	25	12	22.21	22.25	22.19			
10	QPSK	25	25	22.12	22.21	22.16			23
10	QPSK	50	0	22.28	22.28	22.28			
10	QPSK	50	14	22.25	22.27	22.27			22
10	QPSK	1	25	22.39	22.67	22.66			
10	QPSK	1	49	22.07	22.07	22.48			
10	QPSK	25	0	21.21	21.14	21.31			23
10	QPSK	25	12	21.22	21.16	21.21			
10	QPSK	50	0	21.27	21.30	21.19			22
10	QPSK	1	0	21.79	21.72	21.71			
10	QPSK	1	25	21.63	21.67	21.63			22
10	QPSK	1	49	21.53	21.57	21.64			
10	QPSK	12	0	20.62	20.61	20.65			21
10	QPSK	12	13	20.43	20.45	20.53			
10	QPSK	25	0	20.32	20.41	20.34			
10	QPSK	25	0	20.59	20.47	20.49			
Channel Frequency (MHz)									
5	QPSK	1	0	23.14	23.10	23.08			
5	QPSK	1	8	23.39	23.33	23.32	24	0	
5	QPSK	1	24	23.12	23.09	23.07			
5	QPSK	12	0	22.28	22.21	22.23			
5	QPSK	12	7	22.30	22.28	22.27			23
5	QPSK	12	13	22.21	22.19	22.20			
5	QPSK	25	0	22.25	22.25	22.28			
5	QPSK	1	12	22.70	22.57	22.53			23
5	QPSK	1	24	22.38	22.36	22.22			
5	QPSK	12	6	21.23	21.17	21.17			21
5	QPSK	12	7	21.31	21.26	21.25			
5	QPSK	12	13	21.19	21.14	21.16			
5	QPSK	1	0	21.48	21.49	21.41			22
5	QPSK	1	12	21.76	21.69	21.65			
5	QPSK	1	24	21.61	21.56	21.36			
5	QPSK	12	0	20.43	20.40	20.36			21
5	QPSK	12	7	20.52	20.46	20.46			
5	QPSK	12	13	20.43	20.35	20.39			
5	QPSK	25	0	20.46	20.41	20.44			
Channel Frequency (MHz)									
3	QPSK	1	0	23.14	23.10	23.14			
3	QPSK	1	8	23.14	23.21	23.16			24
3	QPSK	1	14	23.20	23.13	23.12			
3	QPSK	8	0	22.13	22.20	22.17			
3	QPSK	8	4	22.21	22.16	22.19			23
3	QPSK	8	7	22.34	22.19	22.28			
3	QPSK	15	0	22.19	22.19	22.17			
3	QPSK	1	0	22.69	22.69	22.56			23
3	QPSK	1	8	22.63	22.62	22.48			
3	QPSK	1	14	22.59	22.50	22.36			
3	QPSK	8	0	21.30	21.21	21.24			22
3	QPSK	8	4	21.28	21.21	21.22			
3	QPSK	15	0	21.40	21.29	21.16			
3	QPSK	1	0	21.71	21.67	21.62			
3	QPSK	1	8	21.68	21.68	21.64			22
3	QPSK	8	0	20.30	20.38	20.35			
3	QPSK	8	4	20.32	20.31	20.33			21
3	QPSK	8	7	20.31	20.30	20.34			
3	QPSK	15	0	20.41	20.31	20.25			
Channel Frequency (MHz)									
1.4	QPSK	1	0	23.16	23.15	23.15			
1.4	QPSK	1	3	23.29	23.28	23.26			24
1.4	QPSK	1	5	23.14	23.12	23.14			
1.4	QPSK	3	0	23.32	23.30	23.26			
1.4	QPSK	3	1	23.32	23.30	23.26			
1.4	QPSK	3	2	23.27	23.27	23.22			23
1.4	QPSK	1	0	22.92	22.92	22.98			
1.4	QPSK	1	0	22.41	22.38	22.36			
1.4	QPSK	1	3	22.52	22.50	22.45			
1.4	QPSK	1	5	21.67	21.65	21.47			22
1.4	QPSK	1	3	21.67	21.65	21.47			
1.4	QPSK	1	5	21.44	21.44	21.35			
1.4	QPSK	3	0	21.46	21.46	21.39			
1.4	QPSK	3	1	21.42	21.39	21.34			23
1.4	QPSK	6	0	20.42	20.39	20.37			

Band 5 Receiver On/Hotspot On/Receiver Off / Extremity									
BW (MHz)	Modulation	RB Size	RB Offset	Power Ch / Freq 30400	Power Hsp / Freq 30400	Power Ext / Freq 30400	Turnup time (dBm)	MFR (dB)	
Channel Frequency (MHz)									
15	QPSK	1	0	23.09	23.23	23.10			
15	QPSK	1	25	23.21	23.18	23.22	24	0	
15	QPSK	1	49	23.11	23.10	23.08			
15	QPSK	25	0	22.23	22.26	22.25			
15	QPSK	25	12	22.19	22.17	22.18			23
15	QPSK	25	25	22.20	22.14	22.19			
15	QPSK	50	0	22.25	22.21	22.20			22
15	QPSK	50	12	21.34	21.21	21.21			
15	QPSK	50	25	21.36	21.38	21.36			
15	QPSK	1	25	21.45	21.44	21.46	22	2	
15	QPSK	1	49	21.36	21.37	21.26			
15	QPSK	1	49	21.36	21.37	21.26			
15	QPSK	25	12	20.32	20.32	20.30			
15	QPSK	25	20	20.32	20.32	20.30			21
15	QPSK	50	0	20.38	20.35	20.33			
Channel				30420	30420	30420	Turnup time (dBm)	MFR (dB)	
5	QPSK	1	0	22.97	23.00	23.00			
5	QPSK	1	12	23.19	23.19	23.20			24
5	QPSK	1	24	23.06	22.98	22.97			
5	QPSK	12	7	22.14	22.12	22.14			
5	QPSK	12	7	22.13	22.14	22.14			23
5	QPSK	12	13	22.06	22.06	22.07			
5	QPSK	1	0	22.23	22.18	22.23			22
5	QPSK	1	12	21.07	21.10	21.16			
5	QPSK	12	7	21.07	21.04	21.06			
5	QPSK	12	13	21.08	21.06	21.09			22
5	QPSK	25	0	21.13	21.11	21.14			
5	QPSK	1	0	21.36	21.39	21.36			
5	QPSK	1	12	21.43	21.40	21.52			22
5	QPSK	1	24	21.26	21.27	21.24			
5	QPSK	12	7	20.16	20.16	20.28			
5	QPSK	12	7	20.27	20.24	20.27			21
5	QPSK	12	13	20.19	20.18	20.20			
Channel				30445	30445	30445	Turnup time (dBm)	MFR (dB)	
3	QPSK	1	0	23.03	23.06	23.04			
3	QPSK	1	14	23.03	23.03	23.00			24
3	QPSK	1	26	23.00	23.00	23.04			
3	QPSK	8	4	22.11	22.07	22.05			23
3	QPSK	8	7	22.07	22.02	22.04			
3	QPSK	16	0	22.10	22.03	22.04			
3	QPSK	1	0	22.28	22.25	22.21			
3	QPSK	1	8	22.24	22.22	22.24			
3	QPSK	1	14	22.24	22.24	22.20			
3	QPSK	1	0	21.13	21.12	21.16			22
3	QPSK	8	4	21.13	21.15	21.18			
3	QPSK	16	0	21.07	21.06	21.08			
3	QPSK	1	0	21.28	21.31	21.28			22
3	QPSK	1	8	21.31	21.28	21.32			
3	QPSK	1	14	21.29	21.28	21.26			
3	QPSK	8	0	20.20	20.20	20.23			21
3	QPSK	8	4	20.21	20.23	20.21			
3	QPSK	8	7	20.20	20.19	20.20			
3	QPSK	16	0	20.17	20.17	20.17			
Channel				30470	30470	30470	Turnup time (dBm)	MFR (dB)	
14	QPSK	1	0	22.81	23.00	22.82			
14	QPSK	1	8	23.00	22.98	23.03			24
14	QPSK	1	6	22.95	22.82	22.80			
14	QPSK	3	0	23.11	23.02	23.04			
14	QPSK	3	8	23.01	23.03	23.07			
14	QPSK	3	8	22.94	22.90	22.90			
14	QPSK	6	0	22.06	21.95	22.02	23	1	
14	QPSK	1	0	22.03	22.05	22.11			
14	QPSK	1	8	22.22	22.17	22.27			
14	QPSK	1	6	22.13	22.08	22.01			23
14	QPSK	3	0	22.02	22.02	22.05			
14	QPSK	3	8	22.06	22.01	22.03			
14	QPSK	3	8	21.98	21.98	21.94			
14	QPSK	6	0	21.06	21.21	21.06	22	2	
14	QPSK	1	0	21.19	21.21	21.22			
14	QPSK	1	0	21.22	21.21	21.22			
14	QPSK	1	8	21.19	21.16	21.17			
14	QPSK	3	0	21.20	21.22	21.20			22
14	QPSK	3	8	21.22	21.17	21.20			
14	QPSK	3	8	21.28	21.24	21.24			
14	QPSK	6	0	20.21	20.25	20.24	21	3	

Band 38 Receiver On									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				37850	38000	38150	24	0	
Frequency (MHz)				2580	2595	2610			
20	QPSK	1	0	23.24	23.61	23.19			
20	QPSK	1	49	23.54	23.45	23.44	23	1	
20	QPSK	1	99	23.26	23.27	23.28			
20	QPSK	50	0	22.47	22.46	22.47			
20	QPSK	50	24	22.49	22.47	22.49	23	1	
20	QPSK	50	50	22.43	22.40	22.46			
20	QPSK	100	0	22.55	22.54	22.58			
20	16QAM	1	0	22.32	22.28	22.28	23	1	
20	16QAM	1	49	22.71	22.67	22.69			
20	16QAM	1	99	22.29	22.40	22.36			
20	16QAM	50	0	21.48	21.48	21.51	22	2	
20	16QAM	50	24	21.49	21.49	21.51			
20	16QAM	50	50	21.45	21.42	21.42			
20	16QAM	100	0	21.53	21.55	21.57	22	2	
20	64QAM	1	0	21.20	21.14	21.14			
20	64QAM	1	49	21.57	21.56	21.59			
20	64QAM	1	99	21.18	21.21	21.25	21	3	
20	64QAM	50	0	20.55	20.55	20.58			
20	64QAM	50	24	20.57	20.57	20.58			
20	64QAM	50	50	20.52	20.49	20.48	20	0	
20	64QAM	100	0	20.72	20.73	20.74			
Channel				37925	38000	38175	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2612.5	24	0	
15	QPSK	1	0	23.43	23.41	23.42			
15	QPSK	1	37	23.60	23.60	23.59	23	1	
15	QPSK	1	74	23.47	23.44	23.48			
15	QPSK	36	0	22.60	22.57	22.61			
15	QPSK	36	20	22.60	22.58	22.63	23	1	
15	QPSK	36	39	22.60	22.55	22.61			
15	QPSK	75	0	22.47	22.56	22.53			
15	16QAM	1	0	22.46	22.45	22.48	23	1	
15	16QAM	1	37	22.68	22.64	22.69			
15	16QAM	1	74	22.51	22.51	22.54			
15	16QAM	36	0	21.48	21.50	21.52	22	2	
15	16QAM	36	20	21.53	21.51	21.54			
15	16QAM	36	39	21.54	21.49	21.50			
15	16QAM	75	0	21.56	21.52	21.54	22	2	
15	64QAM	1	0	21.39	21.32	21.34			
15	64QAM	1	37	21.55	21.55	21.55			
15	64QAM	1	74	21.41	21.39	21.44	21	3	
15	64QAM	36	0	20.64	20.65	20.68			
15	64QAM	36	20	20.69	20.68	20.70			
15	64QAM	36	39	20.65	20.67	20.65	20	0	
15	64QAM	75	0	20.63	20.67	20.67			
Channel				37900	38000	38200	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2575	2595	2615	24	0	
10	QPSK	1	0	23.55	23.52	23.50			
10	QPSK	1	25	23.46	23.47	23.53	23	1	
10	QPSK	1	49	23.59	23.51	23.44			
10	QPSK	25	0	22.57	22.58	22.63			
10	QPSK	25	12	22.58	22.57	22.62	23	1	
10	QPSK	25	25	22.57	22.55	22.63			
10	QPSK	50	0	22.53	22.51	22.64			
10	16QAM	1	0	22.58	22.56	22.56	23	1	
10	16QAM	1	25	22.53	22.54	22.60			
10	16QAM	1	49	22.64	22.58	22.63			
10	16QAM	25	0	21.61	21.62	21.62	22	2	
10	16QAM	25	12	21.60	21.58	21.63			
10	16QAM	25	25	21.59	21.57	21.64			
10	16QAM	50	0	21.55	21.54	21.55	22	2	
10	64QAM	1	0	21.47	21.49	21.43			
10	64QAM	1	25	21.41	21.43	21.48			
10	64QAM	1	49	21.50	21.45	21.51	21	3	
10	64QAM	25	0	20.70	20.69	20.69			
10	64QAM	25	12	20.69	20.66	20.70			
10	64QAM	25	25	20.68	20.59	20.72	20	0	
10	64QAM	50	0	20.60	20.61	20.60			
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2572.5	2595	2617.5	24	0	
5	QPSK	1	0	23.40	23.39	23.41			
5	QPSK	1	12	23.58	23.60	23.60	23	1	
5	QPSK	1	24	23.40	23.42	23.44			
5	QPSK	12	0	22.54	22.56	22.59			
5	QPSK	12	7	22.62	22.57	22.65	23	1	
5	QPSK	12	13	22.55	22.54	22.59			
5	QPSK	25	0	22.55	22.54	22.59			
5	16QAM	1	0	22.52	22.50	22.51	23	1	
5	16QAM	1	12	22.65	22.65	22.67			
5	16QAM	1	24	22.48	22.48	22.53			
5	16QAM	12	0	21.47	21.47	21.55	22	2	
5	16QAM	12	7	21.53	21.52	21.60			
5	16QAM	12	13	21.52	21.46	21.53			
5	16QAM	25	0	21.56	21.55	21.65	22	2	
5	64QAM	1	0	21.39	21.36	21.42			
5	64QAM	1	12	21.54	21.54	21.56			
5	64QAM	1	24	21.39	21.39	21.44	21	3	
5	64QAM	12	0	20.61	20.60	20.66			
5	64QAM	12	7	20.64	20.64	20.71			
5	64QAM	12	13	20.66	20.60	20.64	20	0	
5	64QAM	25	0	20.65	20.64	20.71			

Band 41 Receiver On									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Low Ch. / Freq.	Power Middle High Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				40140	40400	40670	41140	24	0
Frequency (MHz)				2545	2571	2598	2645		
20	QPSK	1	0	23.38	23.34	23.64	23.33		
20	QPSK	1	49	23.33	23.45	23.34	23.33	23	1
20	QPSK	1	99	23.42	23.39	23.47	23.35		
20	QPSK	50	0	22.56	22.58	22.83	22.72		
20	QPSK	50	24	22.65	22.61	22.70	22.82	23	1
20	QPSK	50	50	22.65	22.60	22.76	22.76		
20	QPSK	100	0	22.63	22.77	22.78	22.71		
20	16QAM	1	0	22.40	22.45	22.49	22.72	23	1
20	16QAM	1	49	22.56	22.82	22.65	22.80		
20	16QAM	1	99	22.48	22.49	22.58	22.68		
20	16QAM	50	0	21.56	21.68	21.75	21.66	22	2
20	16QAM	50	24	21.60	21.66	21.77	21.69		
20	16QAM	50	50	21.65	21.62	21.79	21.63		
20	16QAM	100	0	21.69	21.75	21.75	21.71	22	2
20	64QAM	1	0	21.27	21.29	21.37	21.61		
20	64QAM	1	49	21.70	21.70	21.35	21.69		
20	64QAM	1	99	21.33	21.35	21.50	21.61	21	3
20	64QAM	50	0	20.64	20.73	20.84	20.76		
20	64QAM	50	24	20.74	20.73	20.88	20.82		
20	64QAM	50	50	20.70	20.69	20.77	20.72	21	3
20	64QAM	100	0	20.79	20.88	20.97	20.77		
Channel				40115	40395	40685	41165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2542.5	2570.5	2599.5	2647.5	24	0
15	QPSK	1	0	23.54	23.56	23.54	23.23		
15	QPSK	1	37	23.54	23.44	23.44	23.38	23	1
15	QPSK	1	74	23.63	23.60	23.55	23.33		
15	QPSK	36	0	22.41	22.66	22.81	22.84		
15	QPSK	36	20	22.74	22.73	22.80	22.79	23	1
15	QPSK	36	39	22.65	22.72	22.81	22.77		
15	QPSK	75	0	22.59	22.66	22.82	22.72	23	1
15	16QAM	1	0	22.60	22.57	22.64	22.79		
15	16QAM	1	37	22.78	22.81	22.89	22.72		
15	16QAM	1	74	22.61	22.68	22.77	22.77	22	2
15	16QAM	36	0	21.65	21.63	21.76	21.78		
15	16QAM	36	20	21.53	21.66	21.80	21.79		
15	16QAM	36	39	21.62	21.62	21.78	21.74	22	2
15	16QAM	75	0	21.66	21.70	21.80	21.71		
15	64QAM	1	0	21.56	21.52	21.57	21.65	22	2
15	64QAM	1	37	21.66	21.72	21.82	21.58		
15	64QAM	1	74	21.54	21.53	21.67	21.68		
15	64QAM	36	0	20.65	20.81	20.93	20.86	21	3
15	64QAM	36	20	20.85	20.83	20.94	20.85		
15	64QAM	36	39	20.77	20.83	20.99	20.81		
15	64QAM	75	0	20.76	20.87	20.93	20.75		
Channel				40090	40390	40690	41190	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2540	2570	2600	2650	24	0
10	QPSK	1	0	23.56	23.62	23.61	23.34		
10	QPSK	1	25	23.45	23.62	23.44	23.33	23	1
10	QPSK	1	49	23.54	23.43	23.45	23.31		
10	QPSK	25	0	22.68	22.69	22.84	22.76		
10	QPSK	25	12	22.77	22.71	22.89	22.73	23	1
10	QPSK	25	25	22.81	22.73	22.85	22.82		
10	QPSK	50	0	22.66	22.67	22.80	22.69	23	1
10	16QAM	1	0	22.71	22.70	22.77	22.64		
10	16QAM	1	25	22.69	22.69	22.81	22.91		
10	16QAM	1	49	22.73	22.75	22.83	22.68	22	2
10	16QAM	25	0	21.69	21.74	21.88	21.68		
10	16QAM	25	12	21.73	21.65	21.79	21.71		
10	16QAM	25	25	21.76	21.69	21.86	21.67	22	2
10	16QAM	50	0	21.66	21.70	21.83	21.66		
10	64QAM	1	0	21.57	21.60	21.68	21.55	22	2
10	64QAM	1	25	21.56	21.56	21.67	21.79		
10	64QAM	1	49	21.60	21.64	21.74	21.55		
10	64QAM	25	0	20.76	20.84	20.96	20.86	21	3
10	64QAM	25	12	20.71	20.77	20.96	20.89		
10	64QAM	25	25	20.85	20.81	20.89	20.90		
10	64QAM	50	0	20.73	20.77	20.90	20.79		
Channel				40065	40385	40705	41215	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2537.5	2569.5	2601.5	2652.5	24	0
5	QPSK	1	0	23.21	23.21	23.07	23.19		
5	QPSK	1	12	23.21	23.21	23.24	23.33	23	1
5	QPSK	1	24	23.14	23.23	23.09	23.23		
5	QPSK	12	0	22.77	22.60	22.52	22.45		
5	QPSK	12	7	22.80	22.70	22.59	22.45	23	1
5	QPSK	12	13	22.85	22.64	22.53	22.38		
5	QPSK	25	0	22.78	22.59	22.55	22.46	23	1
5	16QAM	1	0	22.65	22.60	22.45	22.25		
5	16QAM	1	12	22.66	22.68	22.57	22.35		
5	16QAM	1	24	22.66	22.56	22.48	22.20	22	2
5	16QAM	12	0	21.77	21.54	21.46	21.45		
5	16QAM	12	7	21.80	21.57	21.53	21.44		
5	16QAM	12	13	21.83	21.51	21.46	21.39	22	2
5	16QAM	25	0	21.79	21.59	21.55	21.43		
5	64QAM	1	0	21.55	21.49	21.36	21.14	22	2
5	64QAM	1	12	21.45	21.57	21.49	21.57		
5	64QAM	1	24	21.56	21.49	21.35	21.11		
5	64QAM	12	0	20.85	20.64	20.59	20.53	21	3
5	64QAM	12	7	20.89	20.70	20.67	20.55		
5	64QAM	12	13	20.92	20.60	20.59	20.47		
5	64QAM	25	0	20.85	20.65	20.63	20.64		

Hotspot On

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1859.2	1880	1899.8		1859.2	1880	1899.8	
Frequency (MHz)	26.11	26.00	26.03	26.50	17.11	17.00	17.03	17.50
GSM 1 Tx slot	26.12	26.08	26.06	26.50	17.12	17.08	17.06	17.50
GPRS 2 Tx slots	24.85	24.83	24.80	25.50	18.85	18.83	18.80	19.50
GPRS 3 Tx slots	23.17	23.07	23.12	24.50	18.91	18.81	18.86	20.24
GPRS 4 Tx slots	22.41	22.45	22.36	23.50	19.41	19.45	19.36	20.50
EDGE 1 Tx slot	22.16	22.03	21.78	23.00	13.16	13.03	12.78	14.00
EDGE 2 Tx slots	21.21	21.13	20.81	22.00	15.21	15.13	14.81	16.00
EDGE 3 Tx slots	19.19	19.03	19.01	20.00	14.93	14.77	14.75	15.74
EDGE 4 Tx slots	18.14	18.11	17.72	19.00	15.14	15.11	14.72	16.00

Hotspot On

Band		WCDMA II		Tune-up Limit (dBm)
TX Channel		9262	9400	
Rx Channel		9662	9800	9938
Frequency (MHz)		1852.4	1880	1907.6
3GPP Rel 99	AMR 12.2Kbps	18.22	18.31	18.30
3GPP Rel 99	RMC 12.2Kbps	18.29	18.35	18.32
3GPP Rel 6	HSDPA Subtest-1	17.90	17.88	17.89
3GPP Rel 6	HSDPA Subtest-2	17.87	17.87	17.77
3GPP Rel 6	HSDPA Subtest-3	17.28	17.29	17.29
3GPP Rel 6	HSDPA Subtest-4	17.41	17.25	17.24
3GPP Rel 8	DC-HSDPA Subtest-1	17.87	17.82	17.84
3GPP Rel 8	DC-HSDPA Subtest-2	17.82	17.84	17.73
3GPP Rel 8	DC-HSDPA Subtest-3	17.22	17.29	17.22
3GPP Rel 8	DC-HSDPA Subtest-4	17.37	17.20	17.20
3GPP Rel 6	HSUPA Subtest-1	17.43	17.47	17.49
3GPP Rel 6	HSUPA Subtest-2	15.92	15.93	15.95
3GPP Rel 6	HSUPA Subtest-3	16.90	16.93	16.94
3GPP Rel 6	HSUPA Subtest-4	15.44	15.42	15.44
3GPP Rel 6	HSUPA Subtest-5	17.84	17.90	17.80
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	15.10	15.12	15.20

Band 2 Hotspot On									
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				18700	18900	19100	19		
Frequency (MHz)				18680	18880	19000			
20	QPSK	1	0	18.23	18.34	18.26	18	1	
20	QPSK	1	49	18.12	18.14	18.18			
20	QPSK	1	99	17.86	17.92	17.98			
20	QPSK	50	0	17.14	17.28	17.21			
20	QPSK	50	24	17.19	17.22	17.17	18	1	
20	QPSK	50	50	17.17	17.07	17.18			
20	QPSK	100	0	17.12	17.15	17.13			
20	16QAM	1	0	17.02	16.98	16.94			
20	16QAM	1	49	17.16	17.24	17.33	18	1	
20	16QAM	1	99	17.42	17.38	17.38			
20	16QAM	50	0	16.15	16.26	16.41			
20	16QAM	50	24	16.15	16.14	16.25			
20	16QAM	50	50	16.10	16.12	16.15	17	2	
20	16QAM	100	0	16.13	16.18	16.16			
20	64QAM	1	0	16.09	16.03	16.00			
20	64QAM	1	49	15.90	16.29	16.29			
20	64QAM	1	99	15.93	15.90	15.87	17	2	
20	64QAM	50	0	15.21	15.22	15.29			
20	64QAM	50	24	15.17	15.19	15.16			
20	64QAM	50	50	15.03	15.10	15.10			
20	64QAM	100	0	15.15	15.13	15.18	16	3	
Channel				18675 <th>18900</th> <th>19125</th>	18900	19125			
Frequency (MHz)				1867.5 <th>18880</th> <th>1902.5</th> <th colspan="2">Tune-up limit (dBm)</th>	18880	1902.5		Tune-up limit (dBm)	
15	QPSK	1	0	18.04	18.05	17.95	19	0	
15	QPSK	1	37	18.16	18.05	18.14			
15	QPSK	1	74	17.86	17.94	17.94			
15	QPSK	36	0	17.15	17.11	17.18			
15	QPSK	36	20	17.25	17.14	17.19	18	1	
15	QPSK	36	39	17.12	17.10	17.12			
15	QPSK	75	0	17.06	17.11	17.15			
15	16QAM	1	0	17.06	17.05	17.03			
15	16QAM	1	37	17.14	17.15	17.34	18	1	
15	16QAM	1	74	16.99	16.98	17.03			
15	16QAM	36	0	16.10	16.14	16.13			
15	16QAM	36	20	16.10	16.19	16.16			
15	16QAM	36	39	15.99	16.08	16.08	17	2	
15	16QAM	75	0	16.06	16.10	16.05			
15	64QAM	1	0	16.24	16.22	16.18			
15	64QAM	1	37	16.24	16.25	16.31			
15	64QAM	1	74	16.15	16.07	16.12	17	2	
15	64QAM	36	0	15.13	15.16	15.13			
15	64QAM	36	20	15.17	15.14	15.15			
15	64QAM	36	39	15.02	15.04	15.09			
15	64QAM	75	0	15.11	15.15	15.08	16	3	
Channel				18650 <th>18900<th>19150</th></th>	18900 <th>19150</th>	19150			
Frequency (MHz)				18655 <th>18880<th>19005</th><th colspan="2">Tune-up limit (dBm)</th></th>	18880 <th>19005</th> <th colspan="2">Tune-up limit (dBm)</th>	19005		Tune-up limit (dBm)	
10	QPSK	1	0	18.05	18.00	18.08	19	0	
10	QPSK	1	25	17.99	18.14	18.07			
10	QPSK	1	49	17.93	17.89	17.97			
10	QPSK	25	0	17.07	17.15	17.06			
10	QPSK	25	12	17.16	17.19	17.22	18	1	
10	QPSK	25	25	17.05	17.10	17.16			
10	QPSK	50	0	17.07	17.09	17.10			
10	16QAM	1	0	17.14	17.14	17.09			
10	16QAM	1	25	17.14	17.13	17.24	18	1	
10	16QAM	1	49	17.01	17.01	17.08			
10	16QAM	25	0	16.21	16.09	16.17			
10	16QAM	25	12	16.22	16.21	16.24			
10	16QAM	25	25	16.10	16.08	16.06	17	2	
10	16QAM	50	0	16.14	16.14	16.03			
10	64QAM	1	0	16.25	16.26	16.23			
10	64QAM	1	25	16.25	16.29	16.25			
10	64QAM	1	49	16.11	16.24	16.22	17	2	
10	64QAM	25	0	15.14	15.18	15.14			
10	64QAM	25	12	15.22	15.19	15.16			
10	64QAM	25	25	15.06	15.10	15.07			
10	64QAM	50	0	15.04	15.15	15.10	16	3	
Channel				18625 <th>18900</th> <th>19175</th>	18900	19175			
Frequency (MHz)				18625.5 <th>18880</th> <th>1907.5</th> <th colspan="2">Tune-up limit (dBm)</th>	18880	1907.5		Tune-up limit (dBm)	
5	QPSK	1	0	17.96	17.99	18.01	19	0	
5	QPSK	1	12	18.21	18.32	18.33			
5	QPSK	1	24	17.96	18.00	17.98			
5	QPSK	12	0	17.16	17.09	17.08			
5	QPSK	12	7	17.18	17.04	17.27	18	1	
5	QPSK	12	13	17.09	17.14	17.11			
5	QPSK	25	0	17.08	17.01	17.01			
5	16QAM	1	0	17.05	17.11	17.02			
5	16QAM	1	12	17.35	17.17	17.35	18	1	
5	16QAM	1	24	17.06	16.95	16.93			
5	16QAM	12	0	16.03	16.06	16.13			
5	16QAM	12	7	16.15	16.19	16.19			
5	16QAM	12	13	16.15	16.06	16.17	17	2	
5	16QAM	25	0	16.12	16.19	16.11			
5	64QAM	1	0	15.98	16.02	15.91			
5	64QAM	1	12	16.15	15.82	16.08			
5	64QAM	1	24	16.04	15.93	15.98	17	2	
5	64QAM	12	0	15.08	15.08	15.08			
5	64QAM	12	7	15.08	15.20	15.05			
5	64QAM	12	13	15.02	15.05	15.02			
5	64QAM	25	0	15.07	15.08	15.05	16	3	
Channel				18615 <th>18900</th> <th>19185</th>	18900	19185			
Frequency (MHz)				18615.5 <th>18880</th> <th>1908.5</th> <th colspan="2">Tune-up limit (dBm)</th>	18880	1908.5		Tune-up limit (dBm)	
3	QPSK	1	0	18.08	18.05	18.12	19	0	
3	QPSK	1	8	18.09	18.04	18.03			
3	QPSK	1	14	18.14	18.00	18.12			
3	QPSK	8	0	17.11	17.10	17.27			
3	QPSK	8	4	17.12	17.15	17.23	18	1	
3	QPSK	8	7	17.12	17.12	17.14			
3	QPSK	15	0	17.16	17.23	17.16			
3	16QAM	1	0	17.19	17.12	17.05			
3	16QAM	1	8	17.15	16.82	17.09	18	1	
3	16QAM	1	14	17.16	17.15	17.12			
3	16QAM	8	0	16.56	16.78	16.69			
3	16QAM	8	4	16.55	16.51	16.62			
3	16QAM	8	7	16.56	16.59	16.69	17	2	
3	16QAM	15	0	16.63	16.67	16.62			
3	64QAM	1	0	16.43	16.33	16.41			
3	64QAM	1	8	16.05	16.54	16.09			
3	64QAM	1	14	16.54	16.54	16.49	17	2	
3	64QAM	8	0	15.52	15.61	15.61			
3	64QAM	8	4	15.48	15.58	15.54			
3	64QAM	8	7	15.47	15.40	15.52			
3	64QAM	15	0	15.52	15.58	15.50	16	3	
Channel				18607 <th>18900</th> <th>19193</th>	18900	19193			
Frequency (MHz)				18607 <th>1880<th>1909.3</th><th colspan="2">Tune-up limit (dBm)</th></th>	1880 <th>1909.3</th> <th colspan="2">Tune-up limit (dBm)</th>	1909.3		Tune-up limit (dBm)	
1.4	QPSK	1	0	17.93	18.01	18.08	19	0	
1.4	QPSK	1	3	18.08	18.06	17.99			
1.4	QPSK	1	5	17.91	18.01	17.96			
1.4	QPSK	3	0	18.11	17.99	18.04			
1.4	QPSK	3	1	17.99	18.12	18.02	18	1	
1.4	QPSK	3	3	18.04	18.08	18.10			
1.4	QPSK	6	0	17.25	17.17	17.07			
1.4	16QAM	1	0	17.12	17.08	17.09			
1.4	16QAM	1	3	17.27	17.25	17.20	18	1	
1.4	16QAM	1	5	16.87	17.05	17.11			
1.4	16QAM	3	0	17.11	17.07	17.11			
1.4	16QAM	3	1	17.02	17.04	17.07	17	2	
1.4	16QAM	3	3	17.09	17.02	17.04			
1.4	16QAM	6	0	16.55	16.52	16.66			
1.4	64QAM	1	0	16.42	16.47	16.46			
1.4	64QAM	1	3	16.38	16.34	16.53	17	2	
1.4	64QAM	1	5	16.34	16.36	16.36			
1.4	64QAM	3	0	16.65	16.66	16.62			
1.4	64QAM	3	1	16.61	16.56	16.63			
1.4	64QAM	3	3	16.63	16.57	16.64	16	3	
1.4	64QAM	6	0	15.43	15.54	15.46			

Band 38 Hotspot On

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	21.5	0
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	21.20	21.30	21.15	20.5	1
20	QPSK	1	49	21.22	21.28	21.24		
20	QPSK	1	99	21.00	20.96	21.08		
20	QPSK	50	0	20.15	20.23	20.20		
20	QPSK	50	24	20.13	20.18	20.18	20.5	1
20	QPSK	50	50	20.12	20.08	20.12		
20	QPSK	100	0	20.17	20.25	20.24		
20	16QAM	1	0	19.93	20.00	19.98		
20	16QAM	1	49	20.31	20.27	20.37	19.5	2
20	16QAM	1	99	20.06	20.09	20.10		
20	16QAM	50	0	19.15	19.17	19.22		
20	16QAM	50	24	19.17	19.17	19.20		
20	16QAM	50	50	19.07	19.11	19.16	19.5	2
20	16QAM	100	0	19.22	19.17	19.22		
20	64QAM	1	0	18.76	18.69	18.70		
20	64QAM	1	49	19.07	19.04	19.06		
20	64QAM	1	99	18.83	18.78	18.84	18.5	3
20	64QAM	50	0	18.00	18.15	18.11		
20	64QAM	50	24	18.13	18.04	18.16		
20	64QAM	50	50	18.12	18.07	18.19		
20	64QAM	100	0	18.18	18.20	18.20	21.5	0
Channel				37825	38000	38175		
Frequency (MHz)				2577.5	2595	2612.5	21.5	0
15	QPSK	1	0	21.13	21.06	21.10		
15	QPSK	1	37	21.11	21.22	21.20	20.5	1
15	QPSK	1	74	21.13	20.93	21.20		
15	QPSK	36	0	20.16	20.23	20.27		
15	QPSK	36	20	20.23	20.25	20.30		
15	QPSK	36	39	20.19	20.23	20.29	20.5	1
15	QPSK	75	0	20.11	20.15	20.19		
15	16QAM	1	0	20.16	20.11	20.15		
15	16QAM	1	37	20.30	20.32	20.35		
15	16QAM	1	74	20.17	20.43	20.26	19.5	2
15	16QAM	36	0	19.07	19.11	19.16		
15	16QAM	36	20	19.16	19.13	19.14		
15	16QAM	36	39	19.13	19.16	19.20		
15	16QAM	75	0	19.13	19.13	19.17	19.5	2
15	64QAM	1	0	18.88	18.85	18.89		
15	64QAM	1	37	19.03	19.01	19.04		
15	64QAM	1	74	18.91	19.19	19.02		
15	64QAM	36	0	18.11	18.20	18.25	18.5	3
15	64QAM	36	20	18.19	18.12	18.27		
15	64QAM	36	39	18.24	18.21	18.25		
15	64QAM	75	0	18.11	18.13	18.17		
Channel				37800	38000	38200	21.5	0
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	21.15	20.97	21.18	20.5	1
10	QPSK	1	25	21.16	21.13	21.22		
10	QPSK	1	49	21.21	21.26	21.26		
10	QPSK	25	0	20.20	20.21	20.39		
10	QPSK	25	12	20.25	20.21	20.42	20.5	1
10	QPSK	25	25	20.24	20.23	20.27		
10	QPSK	50	0	20.23	20.17	20.27		
10	16QAM	1	0	20.30	20.12	20.26		
10	16QAM	1	25	20.18	20.21	20.27	19.5	2
10	16QAM	1	49	20.30	20.37	20.32		
10	16QAM	25	0	19.20	19.22	19.34		
10	16QAM	25	12	19.28	19.26	19.28		
10	16QAM	25	25	19.15	19.23	19.30	19.5	2
10	16QAM	50	0	19.15	19.26	19.37		
10	64QAM	1	0	19.03	18.86	18.98		
10	64QAM	1	25	18.93	18.93	18.98		
10	64QAM	1	49	19.05	19.11	19.06	18.5	3
10	64QAM	25	0	18.13	18.19	18.30		
10	64QAM	25	12	18.24	18.24	18.23		
10	64QAM	25	25	18.12	18.16	18.29		
10	64QAM	50	0	18.09	18.12	18.17	21.5	0
Channel				37775	38000	38225		
Frequency (MHz)				2572.5	2595	2617.5	21.5	0
5	QPSK	1	0	21.09	21.00	21.05		
5	QPSK	1	12	21.17	21.22	21.29	20.5	1
5	QPSK	1	24	21.00	21.02	21.14		
5	QPSK	12	0	20.13	20.15	20.25		
5	QPSK	12	7	20.22	20.20	20.28		
5	QPSK	12	13	20.12	20.11	20.25	20.5	1
5	QPSK	25	0	20.13	20.11	20.24		
5	16QAM	1	0	20.20	20.17	20.22		
5	16QAM	1	12	20.29	20.34	20.33		
5	16QAM	1	24	20.11	20.13	20.27	19.5	2
5	16QAM	12	0	19.07	19.08	19.19		
5	16QAM	12	7	19.18	19.13	19.26		
5	16QAM	12	13	19.05	19.12	19.17		
5	16QAM	25	0	19.10	19.14	19.24	19.5	2
5	64QAM	1	0	18.87	18.89	18.94		
5	64QAM	1	12	19.10	19.05	19.13		
5	64QAM	1	24	18.88	18.91	19.03		
5	64QAM	12	0	18.06	18.12	18.18	18.5	3
5	64QAM	12	7	18.12	18.12	18.19		
5	64QAM	12	13	18.05	18.09	18.20		
5	64QAM	25	0	18.11	18.09	18.22		

Band 41 Hotspot On

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Low Ch. / Freq.	Power Middle High Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				40140	40400	40670	41140	21.5	0
Frequency (MHz)				2545	2571	2598	2645		
20	QPSK	1	0	21.16	21.22	21.29	21.11	20.5	1
20	QPSK	1	49	21.09	21.10	21.06	21.25		
20	QPSK	1	99	21.15	21.17	21.11	21.23		
20	QPSK	50	0	19.94	20.00	20.18	20.08		
20	QPSK	50	24	20.02	20.01	20.06	20.14	20.5	1
20	QPSK	50	50	20.03	20.02	19.97	20.12		
20	QPSK	100	0	20.04	20.01	20.15	20.06		
20	16QAM	1	0	19.92	19.88	19.86	19.92		
20	16QAM	1	49	20.27	20.15	20.27	20.20	19.5	2
20	16QAM	1	99	19.88	19.92	19.92	20.00		
20	16QAM	50	0	18.86	19.00	19.01	19.18		
20	16QAM	50	24	19.05	19.02	19.01	19.19		
20	16QAM	50	50	19.00	19.02	19.02	19.07	19.5	2
20	16QAM	100	0	19.05	19.02	19.13	19.17		
20	64QAM	1	0	18.64	18.61	18.58	18.67		
20	64QAM	1	49	18.96	18.90	18.99	19.06		
20	64QAM	1	99	18.56	18.61	18.68	18.74	18.5	3
20	64QAM	50	0	17.82	17.86	18.03	18.10		
20	64QAM	50	24	17.97	17.97	18.00	18.13		
20	64QAM	50	50	18.00	17.91	17.94	18.00		
20	64QAM	100	0	18.06	18.09	18.14	18.22		
Channel				40115	40395	40685	41165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2542.5	2570.5	2599.5	2647.5	21.5	0
15	QPSK	1	0	20.97	20.87	20.97	21.00		
15	QPSK	1	37	21.14	21.16	21.21	21.27	20.5	1
15	QPSK	1	74	20.96	21.02	20.99	21.08		
15	QPSK	36	0	20.04	20.06	20.12	20.15		
15	QPSK	36	20	20.15	20.12	20.14	20.25		
15	QPSK	36	39	20.18	20.03	20.12	20.17	20.5	1
15	QPSK	75	0	19.98	20.00	20.02	20.10		
15	16QAM	1	0	20.03	19.97	20.10	20.08		
15	16QAM	1	37	20.16	20.19	20.19	20.21		
15	16QAM	1	74	20.03	20.09	20.07	20.15	19.5	2
15	16QAM	36	0	18.91	18.98	19.02	19.14		
15	16QAM	36	20	19.02	19.03	18.97	19.12		
15	16QAM	36	39	19.03	18.93	19.02	19.08		
15	16QAM	75	0	19.08	18.95	19.02	19.14	19.5	2
15	64QAM	1	0	18.82	18.72	18.72	18.84		
15	64QAM	1	37	18.89	18.91	18.92	18.97		
15	64QAM	1	74	18.81	18.77	18.79	18.89		
15	64QAM	36	0	17.99	17.96	18.11	18.15	18.5	3
15	64QAM	36	20	18.11	18.11	18.03	18.22		
15	64QAM	36	39	18.06	18.03	17.95	18.18		
15	64QAM	75	0	18.07	17.96	18.03	18.16		
Channel				40090	40390	40690	41190	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2540	2570	2600	2650	21.5	0
10	QPSK	1	0	20.88	21.00	21.11	21.14		
10	QPSK	1	25	20.93	20.93	20.93	21.12	20.5	1
10	QPSK	1	49	21.00	21.05	21.02	21.15		
10	QPSK	25	0	20.03	20.03	20.12	20.25		
10	QPSK	25	12	20.07	20.05	20.09	20.22		
10	QPSK	25	25	20.12	20.01	20.05	20.20	20.5	1
10	QPSK	50	0	20.00	20.02	20.02	20.24		
10	16QAM	1	0	20.14	20.05	20.22	20.23		
10	16QAM	1	25	19.99	20.00	20.06	20.17		
10	16QAM	1	49	20.12	20.09	20.11	20.26	19.5	2
10	16QAM	25	0	19.00	19.02	19.07	19.27		
10	16QAM	25	12	19.08	19.05	19.13	19.25		
10	16QAM	25	25	19.09	19.02	19.06	19.26		
10	16QAM	50	0	19.11	18.91	19.08	19.14	19.5	2
10	64QAM	1	0	18.90	18.77	18.96	18.96		
10	64QAM	1	25	18.79	18.83	18.80	18.98		
10	64QAM	1	49	18.84	18.81	18.82	18.97		
10	64QAM	25	0	18.00	17.97	18.03	18.23	18.5	3
10	64QAM	25	12	18.02	18.05	18.04	18.17		
10	64QAM	25	25	18.01	17.92	17.99	18.22		
10	64QAM	50	0	17.96	17.93	18.00	18.08		
Channel				40065	40385	40705	41215	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2537.5	2569.5	2601.5	2652.5	21.5	0
5	QPSK	1	0	20.90	20.92	21.03	21.07		
5	QPSK	1	12	21.11	21.07	21.23	21.18	20.5	1
5	QPSK	1	24	20.95	20.91	20.95	21.10		
5	QPSK	12	0	20.02	20.01	20.08	20.20		
5	QPSK	12	7	20.11	20.14	20.12	20.25		
5	QPSK	12	13	20.03	19.98	20.11	20.22	20.5	1
5	QPSK	25	0	20.03	20.07	20.04	20.16		
5	16QAM	1	0	20.10	20.02	20.00	20.12		
5	16QAM	1	12	20.20	20.26	20.20	20.21		
5	16QAM	1	24	19.97	20.01	20.10	20.14	19.5	2
5	16QAM	12	0	18.94	18.98	18.99	19.16		
5	16QAM	12	7	19.03	19.02	19.03	19.21		
5	16QAM	12	13	19.01	18.93	18.98	19.18		
5	16QAM	25	0	19.07	19.00	19.05	19.22	19.5	2
5	64QAM	1	0	18.72	18.75	19.00	18.88		
5	64QAM	1	12	19.01	19.00	19.14	19.08		
5	64QAM	1	24	18.76	18.74	18.76	18.86		
5	64QAM	12	0	17.95	17.92	17.99	18.20	18.5	3
5	64QAM	12	7	18.08	18.02	18.05	18.24		
5	64QAM	12	13	18.02	17.91	17.99	18.14		
5	64QAM	25	0	18.02	17.95	18.00	18.21		

Receiver Off/Extrinity

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1852.2	1880	1899.8		1852.2	1880	1899.8	
Frequency (MHz)	28.33	28.32	28.45	29.00	19.33	19.32	19.45	20.00
GSM 1 Tx slot	28.66	28.40	28.59	29.00	19.66	19.40	19.59	20.00
GPRS 2 Tx slots	27.11	27.10	27.03	28.00	21.11	21.10	21.03	22.00
GPRS 3 Tx slots	25.62	25.52	25.57	27.00	21.36	21.26	21.31	22.74
GPRS 4 Tx slots	24.82	24.84	24.79	26.00	21.82	21.84	21.79	23.00
EDGE 1 Tx slot	24.44	24.48	24.23	25.50	15.44	15.48	15.23	16.50
EDGE 2 Tx slots	23.41	23.50	23.26	24.50	17.41	17.50	17.26	18.50
EDGE 3 Tx slots	21.50	21.48	21.25	22.50	17.24	17.22	16.99	18.24
EDGE 4 Tx slots	20.50	20.44	20.17	21.50	17.50	17.44	17.17	18.50

Receiver Off/Extrinity

Band		WCDMA			Tune-up Limit (dBm)
TX Channel		9262	9400	9538	
Rx Channel		9662	9800	9938	
Frequency (MHz)		1852.4	1880	1907.6	
3GPP Rel 99	AMR 12.2Kbps	20.40	20.43	20.33	21.50
3GPP Rel 99	RMC 12.2Kbps	20.41	20.53	20.44	21.50
3GPP Rel 6	HSDPA Subtest-1	19.86	19.91	19.88	20.50
3GPP Rel 6	HSDPA Subtest-2	19.85	19.79	19.77	20.50
3GPP Rel 6	HSDPA Subtest-3	19.37	19.40	19.36	20.00
3GPP Rel 6	HSDPA Subtest-4	19.42	19.34	19.31	20.00
3GPP Rel 8	DC-HSDPA Subtest-1	19.80	19.84	19.84	20.50
3GPP Rel 8	DC-HSDPA Subtest-2	19.81	19.75	19.74	20.50
3GPP Rel 8	DC-HSDPA Subtest-3	19.32	19.35	19.32	20.00
3GPP Rel 8	DC-HSDPA Subtest-4	19.40	19.31	19.78	20.00
3GPP Rel 6	HSUPA Subtest-1	19.94	19.85	19.92	20.50
3GPP Rel 6	HSUPA Subtest-2	17.88	17.90	17.81	18.50
3GPP Rel 6	HSUPA Subtest-3	18.92	18.88	18.88	19.50
3GPP Rel 6	HSUPA Subtest-4	17.40	17.38	17.36	18.50
3GPP Rel 6	HSUPA Subtest-5	19.74	19.80	19.81	20.50
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	17.10	17.12	16.90	18.00

Band 2 Receiver Off/Extrimity									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq. 18700	Power Middle Ch. / Freq. 18900	Power High Ch. / Freq. 19100	Tune-up limit (dBm)	MPR (dB)	
Channel				1860	1880	1900			
Frequency (MHz)				20.39	20.54	20.32			
20	QPSK	1	0	20.39	20.54	20.32	21	0	
20	QPSK	1	49	20.33	20.46	20.45			
20	QPSK	1	99	20.07	20.07	20.06			
20	QPSK	50	0	19.38	19.45	19.40			
20	QPSK	50	24	19.38	19.44	19.34	20	1	
20	QPSK	50	50	19.27	19.34	19.28			
20	QPSK	100	0	19.40	19.50	19.45			
20	16QAM	1	0	19.60	19.69	19.57			
20	16QAM	1	49	19.22	19.31	19.25	20	1	
20	16QAM	1	99	19.51	19.41	19.48			
20	16QAM	50	0	18.72	18.71	18.80			
20	16QAM	50	24	18.54	18.57	18.71			
20	16QAM	50	50	18.61	18.51	18.56	19	2	
20	16QAM	100	0	18.56	18.59	18.73			
20	64QAM	1	0	18.66	18.67	18.70			
20	64QAM	1	49	18.88	18.67	18.82			
20	64QAM	1	99	18.48	18.49	18.50	19	2	
20	64QAM	50	0	17.65	17.64	17.72			
20	64QAM	50	24	17.68	17.65	17.71			
20	64QAM	50	50	17.65	17.59	17.59			
20	64QAM	100	0	17.68	17.69	17.73	Tune-up limit (dBm)	MPR (dB)	
Channel				1867.5	1890.0	1912.5			
Frequency (MHz)				1857.5	1880	1902.5			
15	QPSK	1	0	20.29	20.30	20.24	21	0	
15	QPSK	1	37	20.38	20.40	20.31			
15	QPSK	1	74	20.15	20.24	20.19			
15	QPSK	36	0	19.41	19.31	19.45			
15	QPSK	36	20	19.30	19.44	19.33	20	1	
15	QPSK	36	39	19.32	19.28	19.33			
15	QPSK	75	0	19.36	19.27	19.37			
15	16QAM	1	0	19.22	19.17	19.10			
15	16QAM	1	37	19.16	19.17	19.27	20	1	
15	16QAM	1	74	19.05	19.11	19.00			
15	16QAM	36	0	18.60	18.60	18.63			
15	16QAM	36	20	18.61	18.71	18.73			
15	16QAM	36	39	18.52	18.58	18.62	19	2	
15	16QAM	75	0	18.68	18.65	18.60			
15	64QAM	1	0	18.85	18.81	18.82			
15	64QAM	1	37	18.84	18.88	18.84			
15	64QAM	1	74	18.68	18.72	18.62	19	2	
15	64QAM	36	0	17.70	17.70	17.62			
15	64QAM	36	20	17.70	17.65	17.70			
15	64QAM	36	39	17.60	17.66	17.57			
15	64QAM	75	0	17.59	17.63	17.62	Tune-up limit (dBm)	MPR (dB)	
Channel				1865.0	1890.0	1915.0			
Frequency (MHz)				1855	1880	1905			
10	QPSK	1	0	20.35	20.39	20.32	21	0	
10	QPSK	1	25	20.32	20.44	20.49			
10	QPSK	1	49	20.27	20.36	20.35			
10	QPSK	25	0	19.29	19.36	19.27			
10	QPSK	25	12	19.29	19.31	19.31	20	1	
10	QPSK	25	25	19.21	19.28	19.29			
10	QPSK	50	0	19.28	19.28	19.26			
10	16QAM	1	0	19.25	19.23	19.14			
10	16QAM	1	25	19.46	19.37	19.32	20	1	
10	16QAM	1	49	19.09	19.10	19.05			
10	16QAM	25	0	18.62	18.57	18.56			
10	16QAM	25	12	18.65	18.69	18.51			
10	16QAM	25	25	18.50	18.60	18.46	19	2	
10	16QAM	50	0	18.58	18.56	18.51			
10	64QAM	1	0	18.88	18.78	18.89			
10	64QAM	1	25	18.82	18.78	18.92			
10	64QAM	1	49	18.76	18.82	18.82	19	2	
10	64QAM	25	0	17.67	17.67	17.60			
10	64QAM	25	12	17.65	17.65	17.65			
10	64QAM	25	25	17.52	17.65	17.60			
10	64QAM	50	0	17.60	17.59	17.56	Tune-up limit (dBm)	MPR (dB)	
Channel				1862.5	1890.0	1917.5			
Frequency (MHz)				1852.5	1880	1907.5			
5	QPSK	1	0	20.25	20.24	20.04	21	0	
5	QPSK	1	12	20.39	20.40	20.50			
5	QPSK	1	24	20.28	20.29	20.13			
5	QPSK	12	0	19.25	19.33	19.29			
5	QPSK	12	7	19.42	19.38	19.33	20	1	
5	QPSK	12	13	19.34	19.20	19.20			
5	QPSK	25	0	19.33	19.26	19.30			
5	16QAM	1	0	19.18	19.12	18.89			
5	16QAM	1	12	19.16	19.33	19.38	20	1	
5	16QAM	1	24	19.17	19.09	19.01			
5	16QAM	12	0	18.54	18.48	18.49			
5	16QAM	12	7	18.67	18.66	18.59			
5	16QAM	12	13	18.50	18.50	18.45	19	2	
5	16QAM	25	0	18.61	18.57	18.63			
5	64QAM	1	0	18.69	18.75	18.70			
5	64QAM	1	12	18.43	18.55	18.48			
5	64QAM	1	24	18.58	18.66	18.76	19	2	
5	64QAM	12	0	17.54	17.58	17.50			
5	64QAM	12	7	17.63	17.62	17.80			
5	64QAM	12	13	17.58	17.61	17.49			
5	64QAM	25	0	17.64	17.63	17.53	Tune-up limit (dBm)	MPR (dB)	
Channel				1861.5	1890.0	1918.5			
Frequency (MHz)				1851.5	1880	1908.5			
3	QPSK	1	0	20.24	20.25	20.18	21	0	
3	QPSK	1	8	20.22	20.41	20.25			
3	QPSK	1	14	20.26	20.23	20.24			
3	QPSK	8	0	19.34	19.36	19.37			
3	QPSK	8	4	19.40	19.38	19.45	20	1	
3	QPSK	8	7	19.30	19.27	19.24			
3	QPSK	15	0	19.24	19.28	19.36			
3	16QAM	1	0	19.49	19.56	19.67			
3	16QAM	1	8	19.59	19.56	19.65	20	1	
3	16QAM	1	14	19.54	19.60	19.61			
3	16QAM	8	0	18.60	18.59	18.70			
3	16QAM	8	4	18.56	18.65	18.70			
3	16QAM	8	7	18.52	18.49	18.55	19	2	
3	16QAM	15	0	18.69	18.70	18.50			
3	64QAM	1	0	18.62	18.80	18.46			
3	64QAM	1	8	18.46	18.80	18.55			
3	64QAM	1	14	18.85	18.46	18.80	19	2	
3	64QAM	8	0	17.65	17.68	17.67			
3	64QAM	8	4	17.62	17.72	17.75			
3	64QAM	8	7	17.58	17.61	17.68			
3	64QAM	15	0	17.54	17.53	17.59	Tune-up limit (dBm)	MPR (dB)	
Channel				1860.7	1890.0	1919.3			
Frequency (MHz)				1850.7	1880	1909.3			
1.4	QPSK	1	0	20.13	20.22	20.14	21	0	
1.4	QPSK	1	3	20.31	20.41	20.33			
1.4	QPSK	1	5	20.22	20.25	20.17			
1.4	QPSK	3	0	20.28	20.32	20.35			
1.4	QPSK	3	1	20.34	20.43	20.38	20	1	
1.4	QPSK	3	3	20.30	20.39	20.33			
1.4	QPSK	6	0	19.33	19.30	19.27			
1.4	16QAM	1	0	19.36	19.45	19.46			
1.4	16QAM	1	3	19.50	19.48	19.55	20	1	
1.4	16QAM	1	5	19.45	19.43	19.39			
1.4	16QAM	3	0	19.33	19.39	19.36			
1.4									

Band 38 Receiver Off/Extrinity									
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	21.5	0	
Frequency (MHz)				2580	2595	2610			
20	QPSK	1	0	21.20	21.30	21.15			
20	QPSK	1	49	21.22	21.28	21.24	20.5	1	
20	QPSK	1	99	21.00	20.96	21.08			
20	QPSK	50	0	20.15	20.23	20.20			
20	QPSK	50	24	20.13	20.18	20.18	20.5	1	
20	QPSK	50	50	20.12	20.08	20.12			
20	QPSK	100	0	20.17	20.25	20.24			
20	16QAM	1	0	19.93	20.00	19.98	20.5	1	
20	16QAM	1	49	20.31	20.27	20.37			
20	16QAM	1	99	20.06	20.09	20.10			
20	16QAM	50	0	19.15	19.17	19.22	19.5	2	
20	16QAM	50	24	19.17	19.17	19.20			
20	16QAM	50	50	19.07	19.11	19.16			
20	16QAM	100	0	19.22	19.17	19.22	19.5	2	
20	64QAM	1	0	18.76	18.69	18.70			
20	64QAM	1	49	19.07	19.04	19.06			
20	64QAM	1	99	18.83	18.78	18.84	18.5	3	
20	64QAM	50	0	18.00	18.15	18.11			
20	64QAM	50	24	18.13	18.04	18.16			
20	64QAM	50	50	18.12	18.07	18.19	18.5	3	
20	64QAM	100	0	18.18	18.20	18.20			
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2577.5	2595	2612.5	21.5	0	
15	QPSK	1	0	21.13	21.06	21.10			
15	QPSK	1	37	21.11	21.22	21.20	20.5	1	
15	QPSK	1	74	21.13	20.93	21.20			
15	QPSK	36	0	20.16	20.23	20.27			
15	QPSK	36	20	20.23	20.25	20.30	20.5	1	
15	QPSK	36	39	20.19	20.23	20.29			
15	QPSK	75	0	20.11	20.15	20.19			
15	16QAM	1	0	20.16	20.11	20.15	20.5	1	
15	16QAM	1	37	20.30	20.32	20.35			
15	16QAM	1	74	20.17	20.43	20.26			
15	16QAM	36	0	19.07	19.11	19.16	19.5	2	
15	16QAM	36	20	19.16	19.13	19.14			
15	16QAM	36	39	19.13	19.16	19.20			
15	16QAM	75	0	19.13	19.13	19.17	19.5	2	
15	64QAM	1	0	18.88	18.85	18.89			
15	64QAM	1	37	19.03	19.01	19.04			
15	64QAM	1	74	18.91	19.19	19.02	18.5	3	
15	64QAM	36	0	18.11	18.20	18.25			
15	64QAM	36	20	18.19	18.12	18.27			
15	64QAM	36	39	18.24	18.21	18.25	18.5	3	
15	64QAM	75	0	18.11	18.13	18.17			
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2575	2595	2615	21.5	0	
10	QPSK	1	0	21.15	20.97	21.18			
10	QPSK	1	25	21.16	21.13	21.22	20.5	1	
10	QPSK	1	49	21.21	21.26	21.26			
10	QPSK	25	0	20.20	20.21	20.39			
10	QPSK	25	12	20.25	20.21	20.42	20.5	1	
10	QPSK	25	25	20.24	20.23	20.27			
10	QPSK	50	0	20.23	20.17	20.27			
10	16QAM	1	0	20.30	20.12	20.26	20.5	1	
10	16QAM	1	25	20.18	20.21	20.27			
10	16QAM	1	49	20.30	20.37	20.32			
10	16QAM	25	0	19.20	19.22	19.34	19.5	2	
10	16QAM	25	12	19.28	19.26	19.28			
10	16QAM	25	25	19.15	19.23	19.30			
10	16QAM	50	0	19.15	19.26	19.37	19.5	2	
10	64QAM	1	0	19.03	18.86	18.98			
10	64QAM	1	25	18.93	18.93	18.98			
10	64QAM	1	49	19.05	19.11	19.06	18.5	3	
10	64QAM	25	0	18.13	18.19	18.30			
10	64QAM	25	12	18.24	18.24	18.23			
10	64QAM	25	25	18.12	18.16	18.29	18.5	3	
10	64QAM	50	0	18.09	18.12	18.17			
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2572.5	2595	2617.5	21.5	0	
5	QPSK	1	0	21.09	21.00	21.05			
5	QPSK	1	12	21.17	21.22	21.29	20.5	1	
5	QPSK	1	24	21.00	21.02	21.14			
5	QPSK	12	0	20.13	20.15	20.25			
5	QPSK	12	7	20.22	20.20	20.28	20.5	1	
5	QPSK	12	13	20.12	20.11	20.25			
5	QPSK	25	0	20.13	20.11	20.24			
5	16QAM	1	0	20.20	20.17	20.22	20.5	1	
5	16QAM	1	12	20.29	20.34	20.33			
5	16QAM	1	24	20.11	20.13	20.27			
5	16QAM	12	0	19.07	19.08	19.19	19.5	2	
5	16QAM	12	7	19.18	19.13	19.26			
5	16QAM	12	13	19.05	19.12	19.17			
5	16QAM	25	0	19.10	19.14	19.24	19.5	2	
5	64QAM	1	0	18.87	18.89	18.94			
5	64QAM	1	12	19.10	19.05	19.13			
5	64QAM	1	24	18.88	18.91	19.03	18.5	3	
5	64QAM	12	0	18.06	18.12	18.18			
5	64QAM	12	7	18.12	18.12	18.19			
5	64QAM	12	13	18.05	18.09	18.20	18.5	3	
5	64QAM	25	0	18.11	18.09	18.22			

Band 41 Receiver Off/Extrinity									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Middle Low Ch. / Freq	Power Middle High Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)
Channel				40140	40400	40670	41140	21.5	0
Frequency (MHz)				2545	2571	2598	2645		
20	QPSK	1	0	21.16	21.22	21.29	21.11		
20	QPSK	1	49	21.09	21.10	21.06	21.25	20.5	1
20	QPSK	1	99	21.15	21.17	21.11	21.23		
20	QPSK	50	0	19.94	20.00	20.18	20.08		
20	QPSK	50	24	20.02	20.01	20.06	20.14	20.5	1
20	QPSK	50	50	20.03	20.02	19.97	20.12		
20	QPSK	100	0	20.04	20.01	20.15	20.06		
20	16QAM	1	0	19.92	19.88	19.86	19.92	19.5	2
20	16QAM	1	49	20.27	20.15	20.27	20.20		
20	16QAM	1	99	19.88	19.92	19.92	20.00		
20	16QAM	50	0	18.86	19.00	19.01	19.18	19.5	2
20	16QAM	50	24	19.05	19.02	19.01	19.19		
20	16QAM	50	50	19.00	19.02	19.02	19.07		
20	16QAM	100	0	19.05	19.02	19.13	19.17	19.5	2
20	64QAM	1	0	18.64	18.61	18.58	18.67		
20	64QAM	1	49	18.96	18.90	18.99	19.06		
20	64QAM	1	99	18.56	18.61	18.68	18.74	18.5	3
20	64QAM	50	0	17.82	17.86	18.03	18.10		
20	64QAM	50	24	17.97	17.97	18.00	18.13		
20	64QAM	50	50	18.00	17.91	17.94	18.00	18.5	3
20	64QAM	100	0	18.06	18.09	18.14	18.22		
Channel				40115	40395	40685	41165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2542.5	2570.5	2599.5	2647.5	21.5	0
15	QPSK	1	0	20.97	20.87	20.97	21.00		
15	QPSK	1	37	21.14	21.16	21.21	21.27	20.5	1
15	QPSK	1	74	20.96	21.02	20.99	21.08		
15	QPSK	36	0	20.04	20.06	20.12	20.15	20.5	1
15	QPSK	36	20	20.15	20.12	20.14	20.25		
15	QPSK	36	39	20.18	20.03	20.12	20.17	20.5	1
15	QPSK	75	0	19.98	20.00	20.02	20.10		
15	16QAM	1	0	20.03	19.97	20.10	20.08	19.5	2
15	16QAM	1	37	20.16	20.19	20.19	20.21		
15	16QAM	1	74	20.03	20.09	20.07	20.15	19.5	2
15	16QAM	36	0	18.91	18.98	19.02	19.14		
15	16QAM	36	20	19.02	19.03	18.97	19.12	19.5	2
15	16QAM	36	39	19.03	18.93	19.02	19.08		
15	16QAM	75	0	19.08	18.95	19.02	19.14	19.5	2
15	64QAM	1	0	18.82	18.72	18.72	18.84		
15	64QAM	1	37	18.89	18.91	18.92	18.97	18.5	3
15	64QAM	1	74	18.81	18.77	18.79	18.89		
15	64QAM	36	0	17.99	17.96	18.11	18.15	18.5	3
15	64QAM	36	20	18.11	18.11	18.03	18.22		
15	64QAM	36	39	18.06	18.03	17.95	18.18	18.5	3
15	64QAM	75	0	18.07	17.96	18.03	18.16		
Channel				40090	40390	40690	41190	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2540	2570	2600	2650	21.5	0
10	QPSK	1	0	20.88	21.00	21.11	21.14		
10	QPSK	1	25	20.93	20.93	20.93	21.12	20.5	1
10	QPSK	1	49	21.00	21.05	21.02	21.15		
10	QPSK	25	0	20.03	20.03	20.12	20.25	20.5	1
10	QPSK	25	12	20.07	20.05	20.09	20.22		
10	QPSK	25	25	20.12	20.01	20.05	20.20	20.5	1
10	QPSK	50	0	20.00	20.02	20.02	20.24		
10	16QAM	1	0	20.14	20.05	20.22	20.23	20.5	1
10	16QAM	1	25	19.99	20.00	20.06	20.17		
10	16QAM	1	49	20.12	20.09	20.11	20.26	19.5	2
10	16QAM	25	0	19.00	19.02	19.07	19.27		
10	16QAM	25	12	19.08	19.05	19.13	19.25	19.5	2
10	16QAM	25	25	19.09	19.02	19.06	19.26		
10	16QAM	50	0	19.11	18.91	19.08	19.14	19.5	2
10	64QAM	1	0	18.90	18.77	18.96	18.96		
10	64QAM	1	25	18.79	18.83	18.80	18.98	18.5	3
10	64QAM	1	49	18.84	18.81	18.82	18.97		
10	64QAM	25	0	18.00	17.97	18.03	18.23	18.5	3
10	64QAM	25	12	18.02	18.05	18.04	18.17		
10	64QAM	25	25	18.01	17.92	17.99	18.22	18.5	3
10	64QAM	50	0	17.96	17.93	18.00	18.08		
Channel				40065	40385	40705	41215	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2537.5	2569.5	2601.5	2632.5	21.5	0
5	QPSK	1	0	20.90	20.92	21.03	21.07		
5	QPSK	1	12	21.11	21.07	21.23	21.18	20.5	1
5	QPSK	1	24	20.95	20.91	20.95	21.10		
5	QPSK	12	0	20.02	20.01	20.08	20.20	20.5	1
5	QPSK	12	7	20.11	20.14	20.12	20.25		
5	QPSK	12	13	20.03	19.98	20.11	20.22	20.5	1
5	QPSK	25	0	20.03	20.07	20.04	20.16		
5	16QAM	1	0	20.10	20.02	20.00	20.12	20.5	1
5	16QAM	1	12	20.20	20.26	20.20	20.21		
5	16QAM	1	24	19.97	20.01	20.10	20.14	19.5	2
5	16QAM	12	0	18.94	18.98	18.99	19.16		
5	16QAM	12	7	19.03	19.02	19.03	19.21	19.5	2
5	16QAM	12	13	19.01	18.93	18.98	19.18		
5	16QAM	25	0	19.07	19.00	19.05	19.22	19.5	2
5	64QAM	1	0	18.72	18.75	19.00	18.88		
5	64QAM	1	12	19.01	19.00	19.14	19.08	18.5	3
5	64QAM	1	24	18.76	18.74	18.76	18.86		
5	64QAM	12	0	17.95	17.92	17.99	18.20	18.5	3
5	64QAM	12	7	18.08	18.02	18.05	18.24		
5	64QAM	12	13	18.02	17.91	17.99	18.14	18.5	3
5	64QAM	25	0	18.02	17.95	18.00	18.21		

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	17.12	18	100.00
		6	2437	17.58	18	
		11	2462	17.25	18	
	802.11g 6Mbps	1	2412	14.52	16	100.00
		6	2437	14.85	16	
		11	2462	13.65	15	
	802.11n-HT20 MCS0	1	2412	14.04	16	100.00
		6	2437	14.79	16	
		11	2462	14.24	16	

BT BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	7.05	5.75	5.57
	CH 39	2441	8.09	6.16	6.19
	CH 78	2480	8.02	6.19	5.47
Tune-up Limit			8.5	6.5	6.5

BT LE

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	-5.10
	CH 19	2440	-3.73
	CH 39	2480	-4.78
Tune-up Limit			-3.5