

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	200037.58	3.28	0.00
Channel X + Input	20009.65	3.92	0.02
Channel X - Input	-20001.89	3.62	-0.02
Channel Y + Input	200037.90	3.50	0.00
Channel Y + Input	20005.83	0.31	0.00
Channel Y - Input	-20005.73	-0.03	0.00
Channel Z + Input	200033.51	-0.62	-0.00
Channel Z + Input	20006.48	0.89	0.00
Channel Z - Input	-20006.01	-0.27	0.00

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2001.68	0.24	0.01
Channel X + Input	201.09	-0.22	-0.11
Channel X - Input	-198.93	-0.12	0.06
Channel Y + Input	2001.70	0.49	0.02
Channel Y + Input	200.70	-0.24	-0.12
Channel Y - Input	-199.76	-0.76	0.38
Channel Z + Input	2001.03	-0.04	-0.00
Channel Z + Input	201.25	0.40	0.20
Channel Z - Input	-199.29	-0.32	0.16

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	9.59	7.82
	- 200	-7.34	-8.76
Channel Y	200	14.74	14.93
	- 200	-16.81	-17.15
Channel Z	200	-3.39	-3.82
	- 200	3.03	3.16

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	-	3.19	-1.66
Channel Y	200	6.79	-	4.73
Channel Z	200	7.16	5.28	-

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



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Accreditation No.: SCS 0108

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: MY41495087	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

Calibrated by:	Name Leif Klysner	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature

Issued: April 30, 2020

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization θ	θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\theta = 0$ 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: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 ^C (k=2)
0	CW ^D	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 TSI, (see Page 5).

^B Numerical linearization parameter; uncertainty not required.

^C Uncertainty is determined using the r_{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

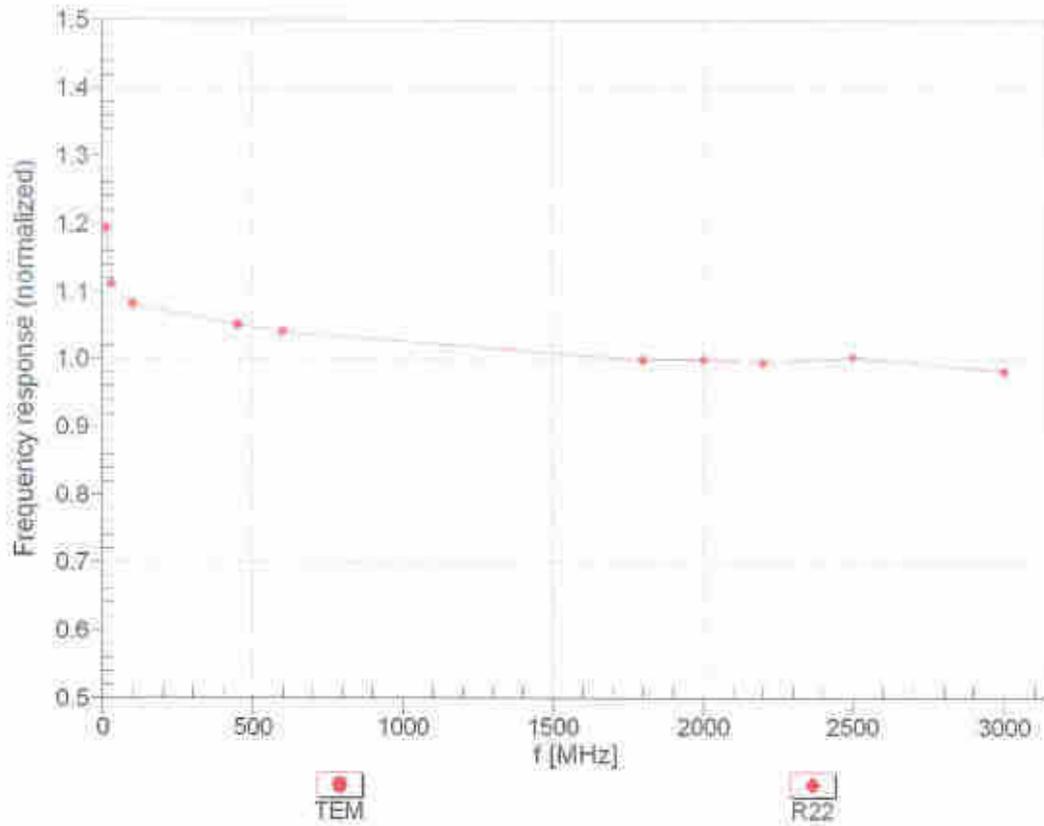
f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth (mm) ^g	Unc (k=2)
750	41.9	0.89	9.64	9.64	9.64	0.52	0.80	± 12.0 %
835	41.5	0.90	9.39	9.39	9.39	0.50	0.80	± 12.0 %
900	41.5	0.97	9.26	9.26	9.26	0.39	0.96	± 12.0 %
1750	40.1	1.37	8.43	8.43	8.43	0.34	0.80	± 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)



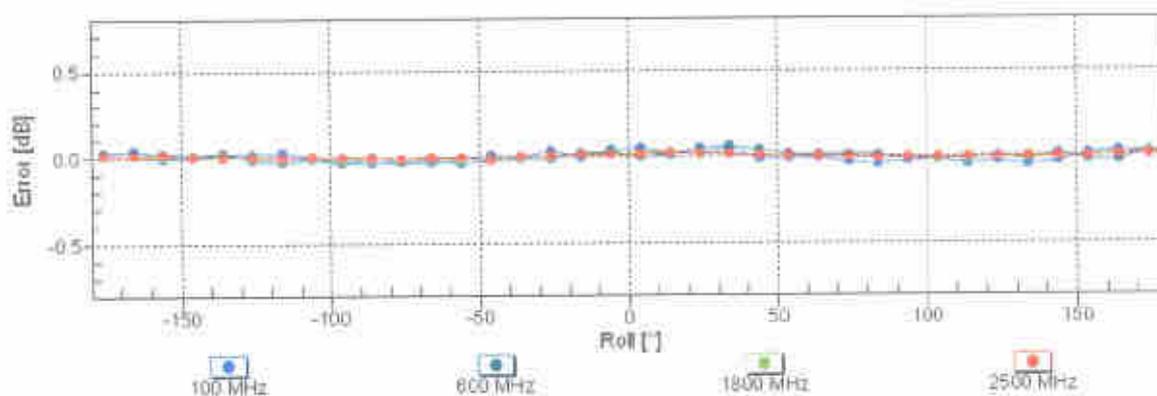
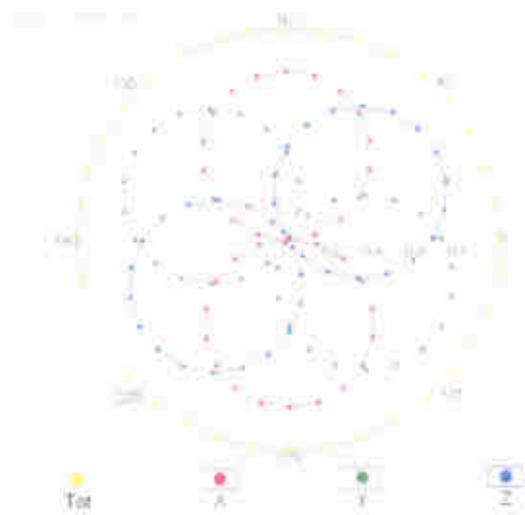
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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

f=600 MHz,TEM

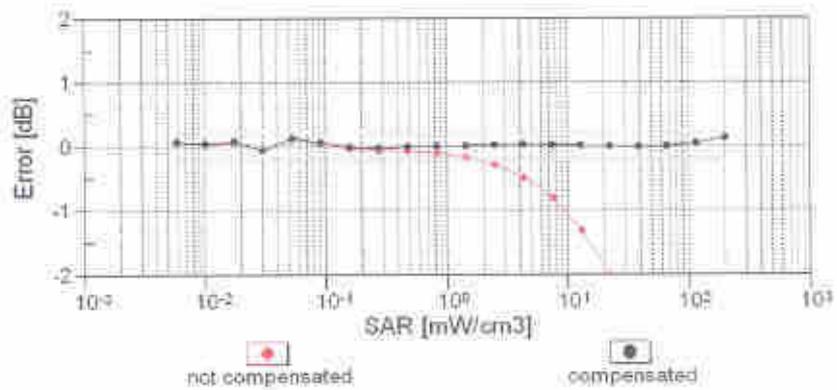
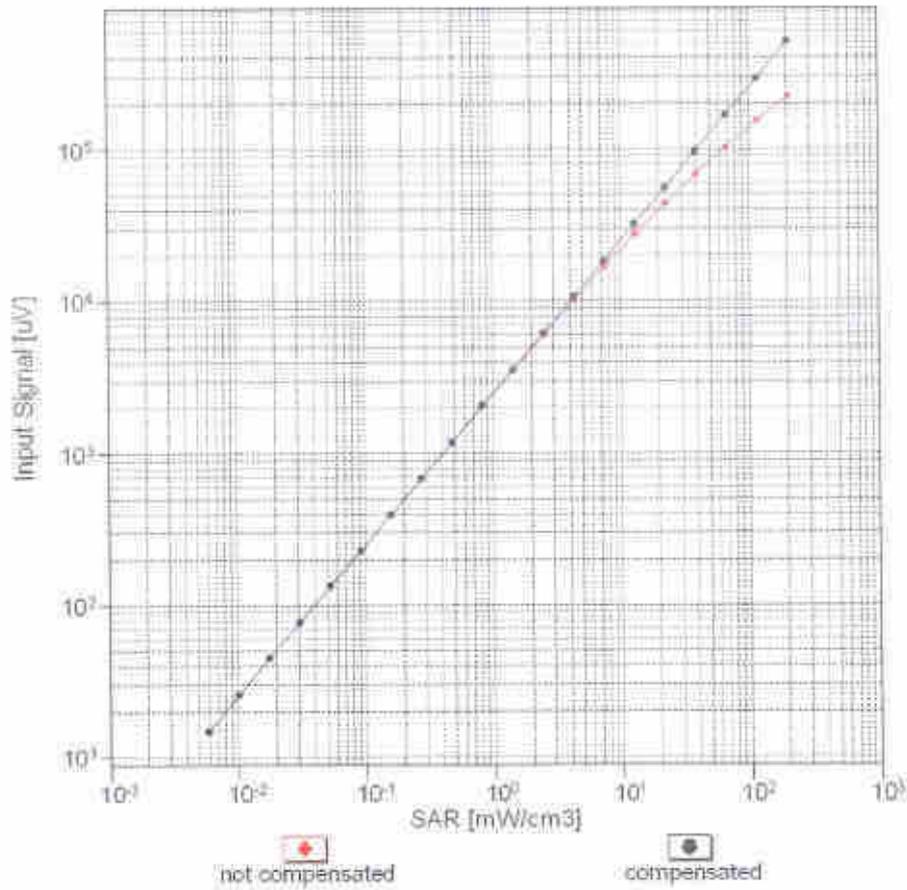


f=1800 MHz,R22



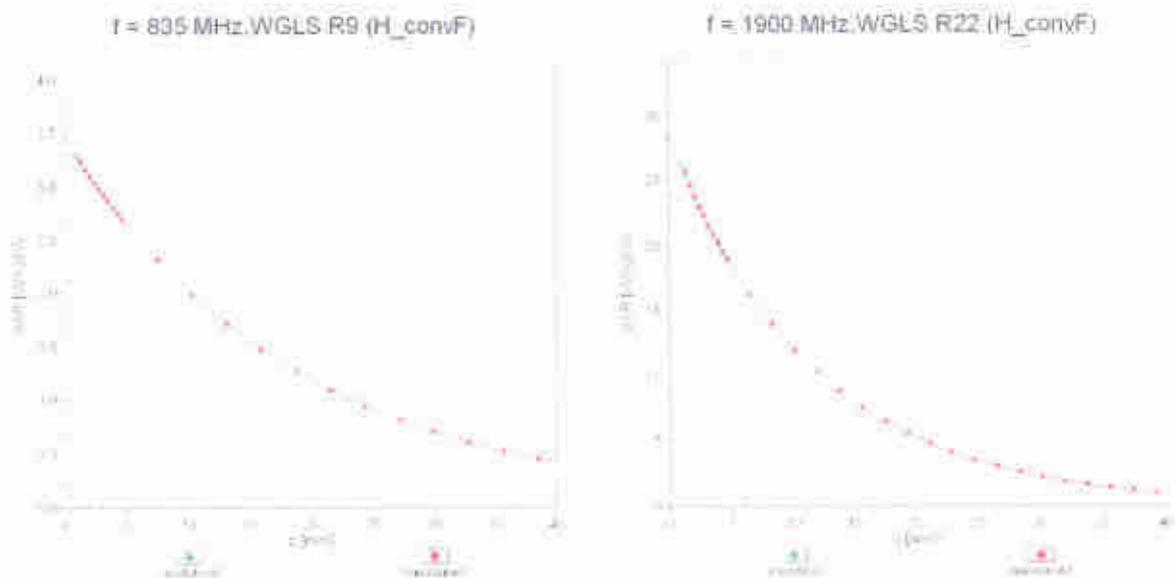
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

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

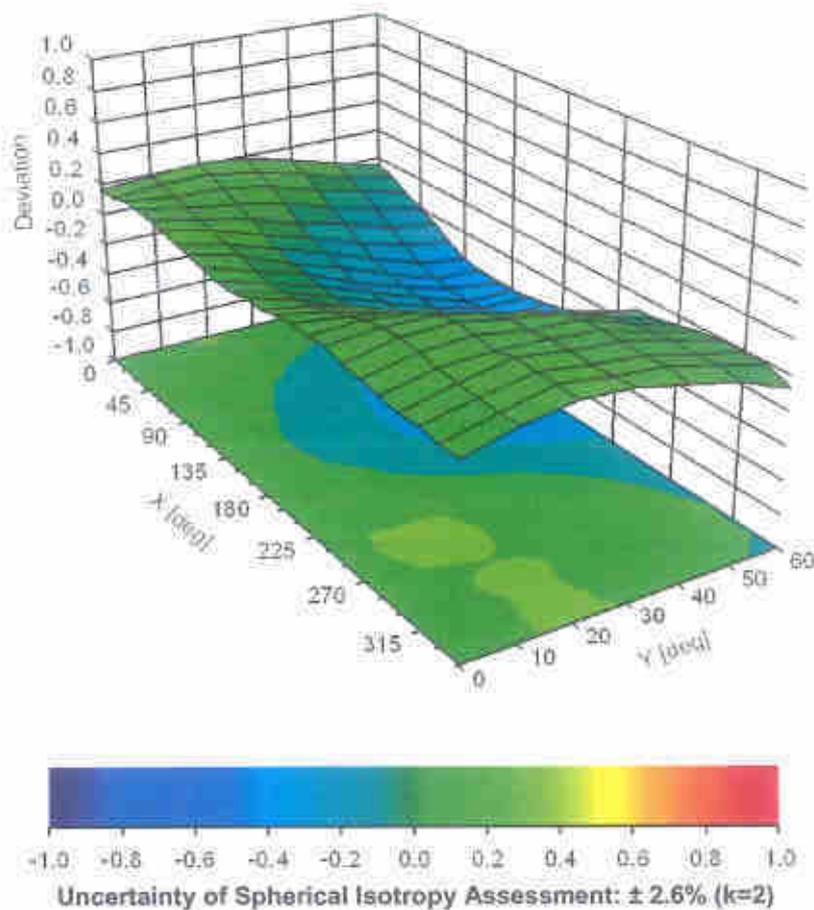


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz





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Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **EX3-3976_Jan20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3976**

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 27, 2020**

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

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

Calibration Equipment used (M&TE critical for calibration)

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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
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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:	Name Katja Pokovic	Technical Manager	

Issued: February 4, 2020

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Accreditation No.: **SCS 0108**

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- 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:3976

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$) ^A	0.48	0.50	0.54	± 10.1 %
DCP (mV) ^B	104.2	97.4	106.5	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\cdot\mu V$	C	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	191.8	± 3.0 %	± 4.7 %
		Y	0.00	0.00	1.00		186.3		
		Z	0.00	0.00	1.00		175.8		
10352- AAA	Pulse Waveform (200Hz, 10%)	X	20.00	94.27	22.80	10.00	60.0	± 2.9 %	± 9.6 %
		Y	20.00	92.24	21.74		60.0		
		Z	20.00	93.79	22.86		60.0		
10353- AAA	Pulse Waveform (200Hz, 20%)	X	20.00	99.71	24.52	6.99	80.0	± 1.9 %	± 9.6 %
		Y	20.00	94.54	21.52		80.0		
		Z	20.00	94.46	22.10		80.0		
10354- AAA	Pulse Waveform (200Hz, 40%)	X	20.00	112.84	29.50	3.98	95.0	± 1.2 %	± 9.6 %
		Y	20.00	97.96	21.49		95.0		
		Z	20.00	101.35	24.09		95.0		
10355- AAA	Pulse Waveform (200Hz, 60%)	X	20.00	141.13	41.02	2.22	120.0	± 1.4 %	± 9.6 %
		Y	20.00	112.18	26.31		120.0		
		Z	20.00	111.64	27.45		120.0		
10387- AAA	QPSK Waveform, 1 MHz	X	20.00	102.43	23.93	0.00	150.0	± 2.8 %	± 9.6 %
		Y	0.53	60.11	7.40		150.0		
		Z	0.96	65.89	11.65		150.0		
10388- AAA	QPSK Waveform, 10 MHz	X	3.27	75.78	19.98	0.00	150.0	± 1.1 %	± 9.6 %
		Y	2.23	68.86	16.32		150.0		
		Z	2.57	71.08	17.44		150.0		
10396- AAA	64-QAM Waveform, 100 kHz	X	3.94	77.03	22.30	3.01	150.0	± 1.2 %	± 9.6 %
		Y	2.66	69.29	18.75		150.0		
		Z	3.79	75.30	21.02		150.0		
10399- AAA	64-QAM Waveform, 40 MHz	X	3.91	69.68	17.48	0.00	150.0	± 2.0 %	± 9.6 %
		Y	3.48	67.32	16.03		150.0		
		Z	3.66	68.29	16.51		150.0		
10414- AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.94	66.38	16.22	0.00	150.0	± 4.0 %	± 9.6 %
		Y	4.77	65.66	15.68		150.0		
		Z	4.94	66.22	15.93		150.0		

Note: For details on UID parameters see Appendix

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

^A The uncertainties of Norm X,Y,Z do not affect the E^2 -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:3976

Sensor Model Parameters

	C1 fF	C2 fF	α V ⁻¹	T1 ms.V ⁻²	T2 ms.V ⁻¹	T3 ms	T4 V ⁻²	T5 V ⁻¹	T6
X	43.7	320.71	34.86	15.41	0.32	5.10	1.25	0.27	1.01
Y	39.8	301.78	36.70	10.48	0.56	5.08	0.00	0.43	1.01
Z	45.2	331.44	34.65	19.40	0.54	5.10	1.65	0.25	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-5.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3976

Calibration Parameter Determined in Head Tissue Simulating Media

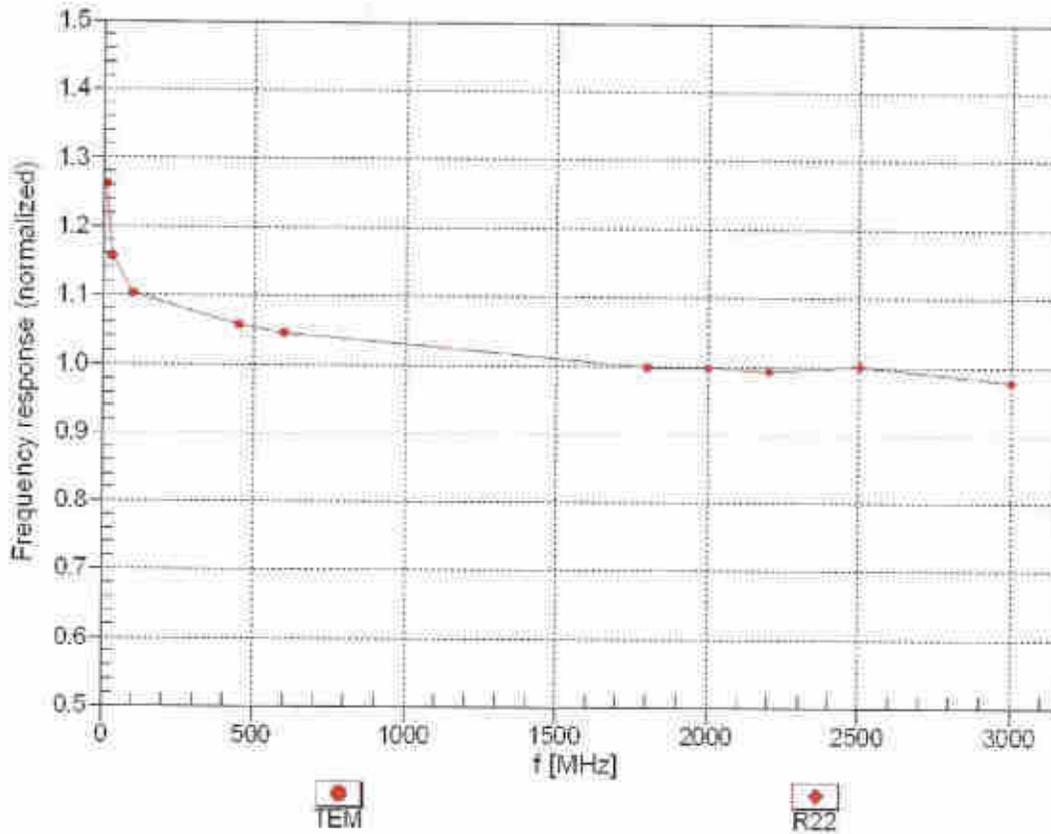
f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth ^g (mm)	Unc (k=2)
750	41.9	0.89	10.23	10.23	10.23	0.65	0.80	± 12.0 %
835	41.5	0.90	10.16	10.16	10.16	0.48	0.88	± 12.0 %
900	41.5	0.97	9.89	9.89	9.89	0.52	0.80	± 12.0 %
1450	40.5	1.20	8.97	8.97	8.97	0.48	0.80	± 12.0 %
1750	40.1	1.37	8.63	8.63	8.63	0.34	0.80	± 12.0 %
1900	40.0	1.40	8.33	8.33	8.33	0.29	0.80	± 12.0 %
2000	40.0	1.40	8.30	8.30	8.30	0.36	0.80	± 12.0 %
2300	39.5	1.67	7.89	7.89	7.89	0.35	0.80	± 12.0 %
2450	39.2	1.80	7.74	7.74	7.74	0.33	0.80	± 12.0 %
2600	39.0	1.96	7.48	7.48	7.48	0.38	0.80	± 12.0 %
3500	37.9	2.91	7.15	7.15	7.15	0.30	1.35	± 14.0 %
3700	37.7	3.12	6.92	6.92	6.92	0.30	1.35	± 14.0 %
5250	35.9	4.71	5.37	5.37	5.37	0.40	1.80	± 14.0 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 14.0 %
5750	35.4	5.22	4.87	4.87	4.87	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^h 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.

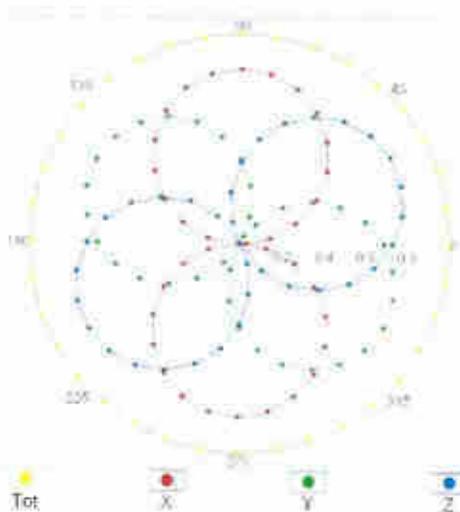
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



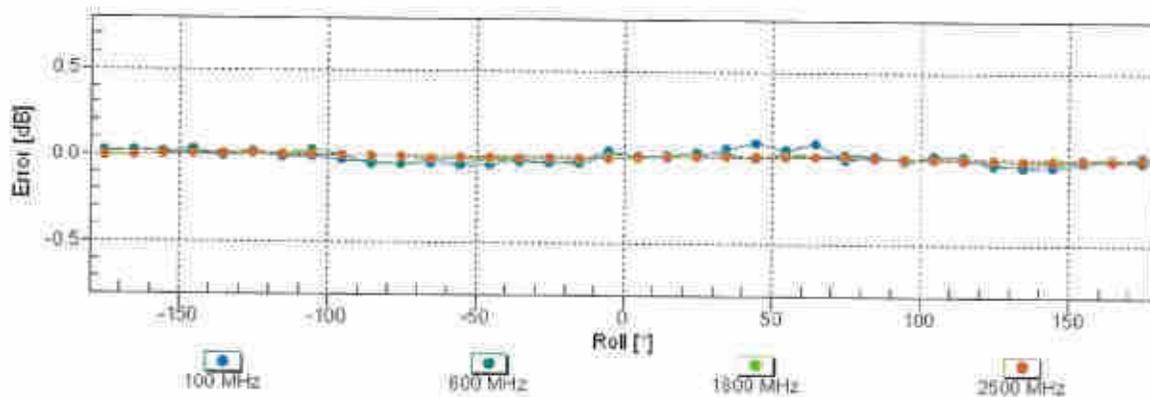
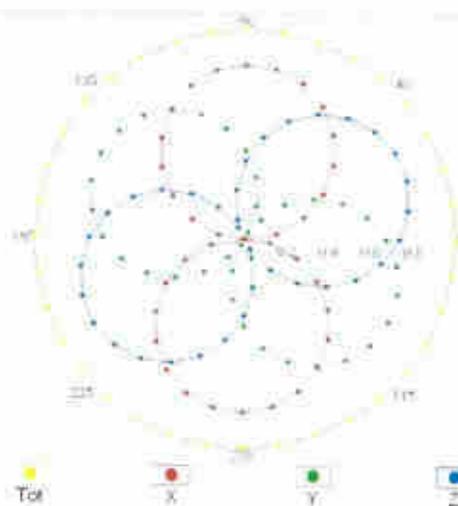
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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

f=600 MHz,TEM

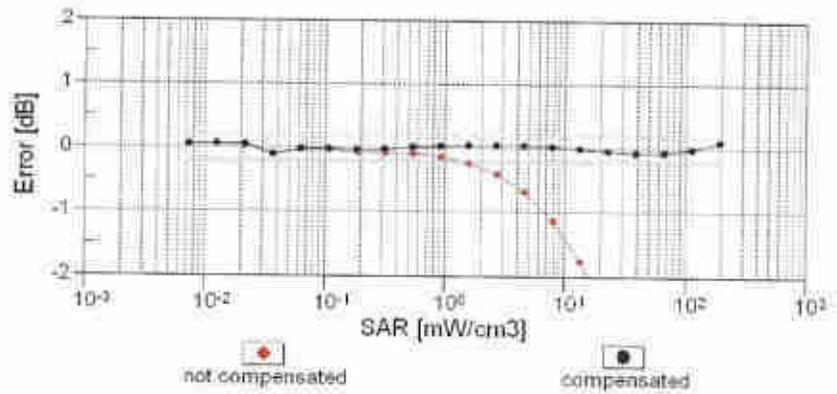
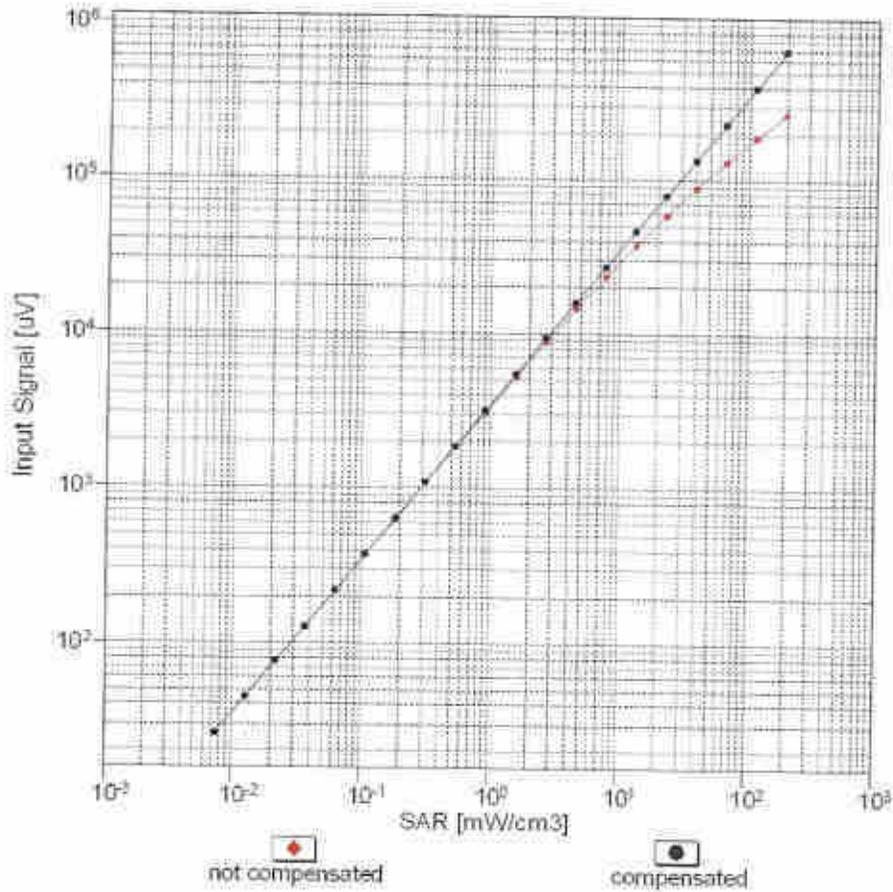


f=1800 MHz,R22



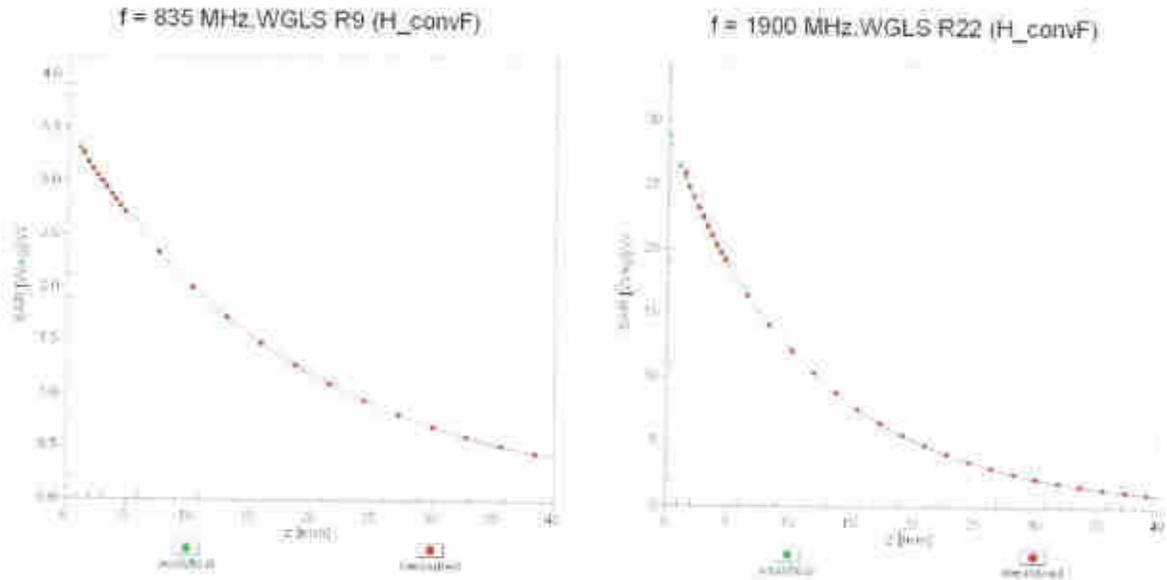
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range f(SAR_{head}) (TEM cell , f_{eval}= 1900 MHz)

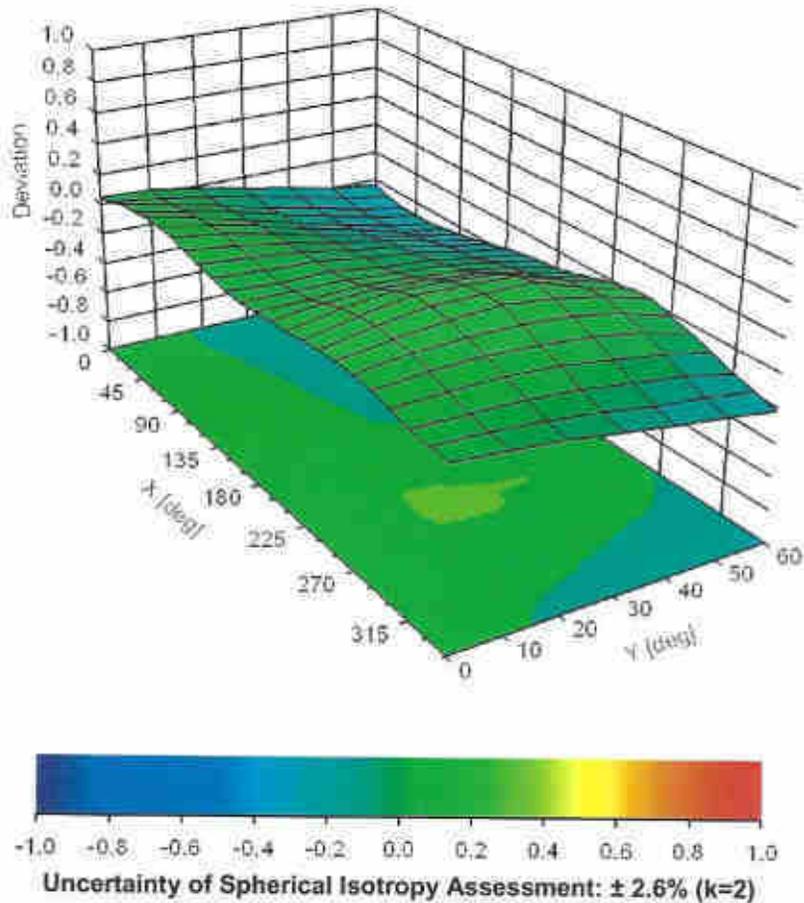


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz



Appendix: Modulation Calibration Parameters

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

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

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

10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WiMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	± 9.6 %
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WiMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WiMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WiMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	iDEN 1:3	iDEN	10.51	± 9.6 %
10314	AAA	iDEN 1:6	iDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SQ32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	±9.6 %
10453	AAD	Validation (Square, 10ms, 1ms)	Test	10.00	±9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	±9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	±9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	±9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	±9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	±9.6 %
10461	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10462	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	±9.6 %
10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6 %
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	±9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	±9.6 %
10483	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	±9.6 %
10484	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	±9.6 %
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	±9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	±9.6 %
10487	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	±9.6 %
10488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	±9.6 %
10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6 %

10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	±9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	±9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6 %
10497	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6 %
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	±9.6 %
10499	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.68	±9.6 %
10500	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6 %
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	±9.6 %
10502	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	±9.6 %
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	±9.6 %
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6 %
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6 %
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.36	±9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	±9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	±9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	±9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	±9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	±9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	±9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	±9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	±9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	±9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	±9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	±9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	±9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	±9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	±9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	±9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	±9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.38	±9.6 %

10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.45	±9.6 %
10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	±9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	±9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	±9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	±9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	±9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	±9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.49	±9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	±9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	±9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	±9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	±9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	±9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	±9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	±9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	±9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	±9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	±9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	±9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	±9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.25	±9.6 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.13	±9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.00	±9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.37	±9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.10	±9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.30	±9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	±9.6 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	±9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	±9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	±9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	±9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	±9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	±9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	±9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	±9.6 %

10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	±9.6 %
10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	±9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	±9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	±9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	±9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	±9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	±9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	±9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	±9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	±9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	±9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	±9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	±9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	±9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	±9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	±9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	±9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	±9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	±9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	±9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	±9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	±9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	±9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	±9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	±9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	±9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	±9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	±9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	±9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	±9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	±9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	±9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.11	±9.6 %
10646	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	±9.6 %
10652	AAE	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±9.6 %
10653	AAE	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	±9.6 %

10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	±9.6 %
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	±9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	±9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	±9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	±9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	±9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	±9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	±9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	±9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	±9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	±9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	±9.6 %
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	±9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.78	±9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	±9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	±9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	±9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.83	±9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)	WLAN	8.26	±9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.6 %
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)	WLAN	8.28	±9.6 %
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN	8.45	±9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN	8.29	±9.6 %
10689	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)	WLAN	8.55	±9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	WLAN	8.25	±9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)	WLAN	8.29	±9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)	WLAN	8.25	±9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)	WLAN	8.57	±9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN	8.78	±9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)	WLAN	8.91	±9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle)	WLAN	8.61	±9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN	8.89	±9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)	WLAN	8.82	±9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc duty cycle)	WLAN	8.73	±9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)	WLAN	8.86	±9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)	WLAN	8.70	±9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)	WLAN	8.69	±9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)	WLAN	8.66	±9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)	WLAN	8.32	±9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.29	±9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)	WLAN	8.39	±9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.67	±9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	±9.6 %
10714	AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.26	±9.6 %
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)	WLAN	8.45	±9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)	WLAN	8.30	±9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)	WLAN	8.48	±9.6 %
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)	WLAN	8.24	±9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)	WLAN	8.81	±9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)	WLAN	8.87	±9.6 %
10721	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)	WLAN	8.76	±9.6 %
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)	WLAN	8.55	±9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.6 %
10724	AAA	IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)	WLAN	8.90	±9.6 %
10725	AAA	IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6 %
10726	AAA	IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle)	WLAN	8.72	±9.6 %

10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	±9.6 %
10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	±9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	±9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	±9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.6 %
10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	±9.6 %
10733	AAA	IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)	WLAN	8.40	±9.6 %
10734	AAA	IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)	WLAN	8.25	±9.6 %
10735	AAA	IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)	WLAN	8.33	±9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	±9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.6 %
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8.42	±9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	±9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)	WLAN	8.48	±9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)	WLAN	8.40	±9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	±9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	±9.6 %
10744	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	±9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	±9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	±9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	±9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.93	±9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN	8.90	±9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN	9.00	±9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)	WLAN	8.94	±9.6 %
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.64	±9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	±9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	±9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	±9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	±9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8.49	±9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	±9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.49	±9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	±9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	±9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	±9.6 %
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	±9.6 %
10767	AAB	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	±9.6 %
10768	AAB	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6 %
10769	AAB	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6 %
10770	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6 %
10771	AAB	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6 %
10772	AAB	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	±9.6 %
10773	AAB	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	±9.6 %
10774	AAB	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6 %
10776	AAB	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6 %
10778	AAB	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10780	AAB	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6 %
10781	AAB	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6 %

10782	AAB	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	±9.6 %
10783	AAB	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6 %
10784	AAB	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	±9.6 %
10785	AAB	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	±9.6 %
10786	AAB	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	±9.6 %
10787	AAB	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	±9.6 %
10788	AAB	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	±9.6 %
10789	AAB	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	±9.6 %
10790	AAB	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	±9.6 %
10791	AAB	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	±9.6 %
10792	AAB	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	±9.6 %
10793	AAB	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	±9.6 %
10794	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6 %
10795	AAB	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.84	±9.6 %
10796	AAB	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6 %
10797	AAB	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	±9.6 %
10798	AAB	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	±9.6 %
10799	AAB	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	±9.6 %
10801	AAB	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	±9.6 %
10802	AAB	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	±9.6 %
10803	AAB	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	±9.6 %
10805	AAB	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10806	AAB	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	±9.6 %
10809	AAB	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10810	AAB	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10812	AAB	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6 %
10817	AAB	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6 %
10818	AAB	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10819	AAB	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	±9.6 %
10820	AAB	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	±9.6 %
10821	AAB	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10822	AAB	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10823	AAB	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	±9.6 %

10824	AAB	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.39	±9.6 %
10825	AAB	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10827	AAB	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	±9.6 %
10828	AAB	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	±9.6 %
10829	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	±9.6 %
10830	AAB	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	±9.6 %
10831	AAB	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	±9.6 %
10832	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	±9.6 %
10833	AAB	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6 %
10834	AAB	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	±9.6 %
10835	AAB	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6 %
10836	AAB	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	±9.6 %
10837	AAB	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	±9.6 %
10839	AAB	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6 %
10840	AAB	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	±9.6 %
10841	AAB	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	±9.6 %
10843	AAB	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	±9.6 %
10844	AAB	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10846	AAB	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10854	AAB	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10855	AAB	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6 %
10856	AAB	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	±9.6 %
10857	AAB	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	±9.6 %
10858	AAB	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6 %
10859	AAB	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6 %
10860	AAB	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10861	AAB	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	±9.6 %
10863	AAB	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10864	AAB	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	±9.6 %
10865	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10866	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6 %
10868	AAB	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	±9.6 %
10869	AAC	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6 %

10870	AAC	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	±9.6 %
10871	AAC	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	±9.6 %
10872	AAC	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	±9.6 %
10873	AAC	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6 %
10874	AAC	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6 %
10875	AAC	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6 %
10876	AAC	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	±9.6 %
10877	AAC	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	±9.6 %
10878	AAC	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6 %
10879	AAC	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	±9.6 %
10880	AAC	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	±9.6 %
10881	AAC	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6 %
10882	AAC	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	±9.6 %
10883	AAC	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	±9.6 %
10884	AAC	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	±9.6 %
10885	AAC	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6 %
10886	AAC	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6 %
10887	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6 %
10888	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	±9.6 %
10889	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	±9.6 %
10890	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	±9.6 %
10891	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	±9.6 %
10892	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6 %

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

Accreditation No.: SCS 0108

Client **Tejet (Auden)**

Certificate No: **ES3-3241_May20**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3241**

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

Calibration date: **May 14, 2020**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	31-Mar-20 (No. 217-03106)	Apr-21
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-10)	In house check: Oct-20

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature
Approved by:	Name Kalja Pokovic	Function Technical Manager	Signature
			Issued: May 16, 2020
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
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 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: ES3DV3 - SN:3241

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.16	0.84	1.11	$\pm 10.1 \%$
DCP (mV) ^B	103.3	108.0	103.8	

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 ^C (k=2)
0	CW	X	0.0	0.0	1.0	0.00	177.6	$\pm 3.3 \%$	$\pm 4.7 \%$
		Y	0.0	0.0	1.0		168.8		
		Z	0.0	0.0	1.0		173.6		

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

^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.

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3241

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	69
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3241

Calibration Parameter Determined in Head Tissue Simulating Media

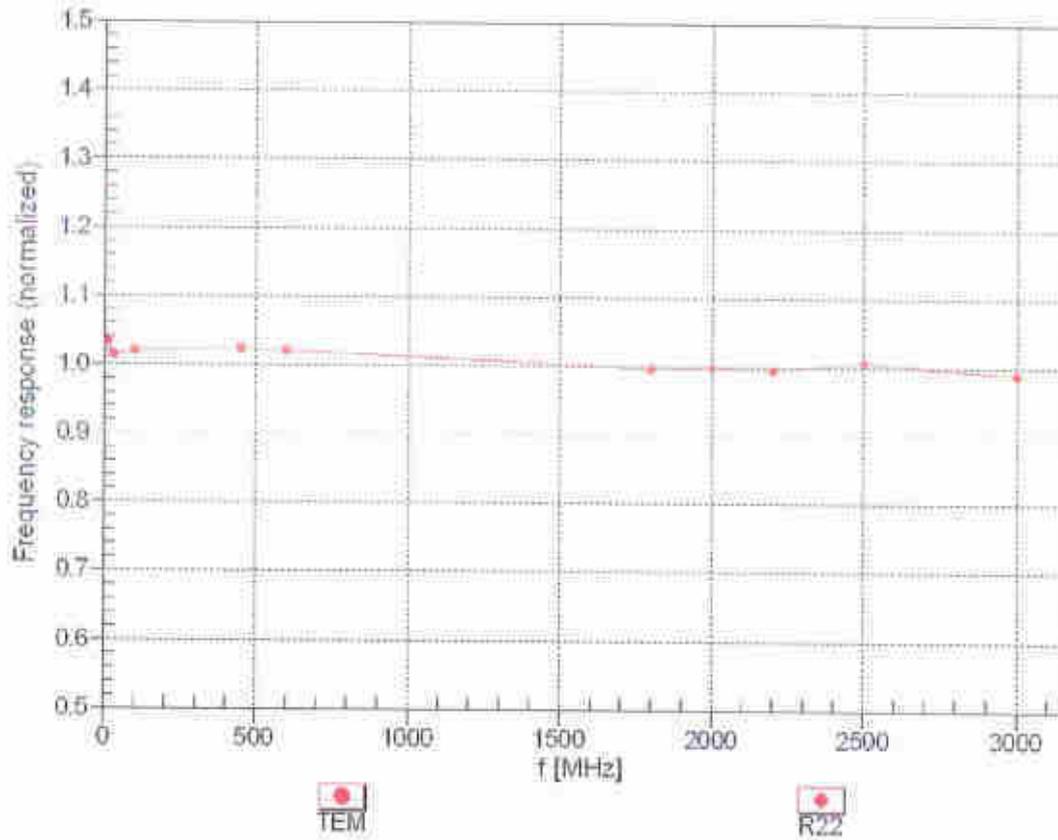
f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth (mm) ^g	Unc (k=2)
750	41.9	0.89	6.45	6.45	6.45	0.80	1.25	± 12.0 %
835	41.5	0.90	6.26	6.26	6.26	0.60	1.38	± 12.0 %
1750	40.1	1.37	5.22	5.22	5.22	0.31	1.81	± 12.0 %
1900	40.0	1.40	5.04	5.04	5.04	0.49	1.42	± 12.0 %
2000	40.0	1.40	4.99	4.99	4.99	0.47	1.43	± 12.0 %
2300	39.5	1.67	4.81	4.81	4.81	0.62	1.50	± 12.0 %
2450	39.2	1.80	4.59	4.59	4.59	0.56	1.60	± 12.0 %
2600	39.0	1.96	4.42	4.42	4.42	0.65	1.50	± 12.0 %

^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, 160 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)



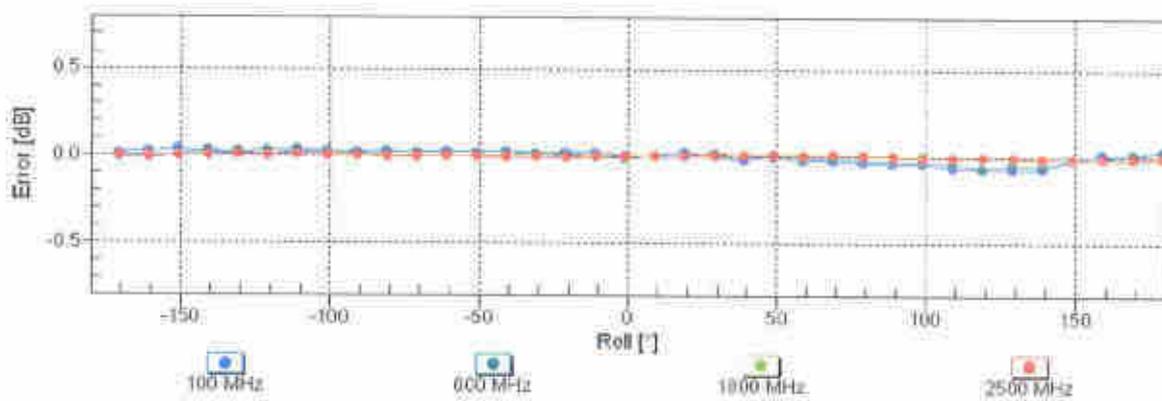
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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

f=600 MHz,TEM

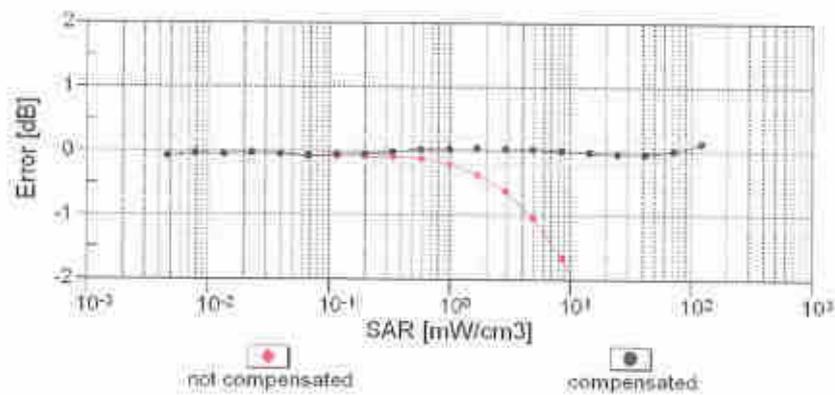
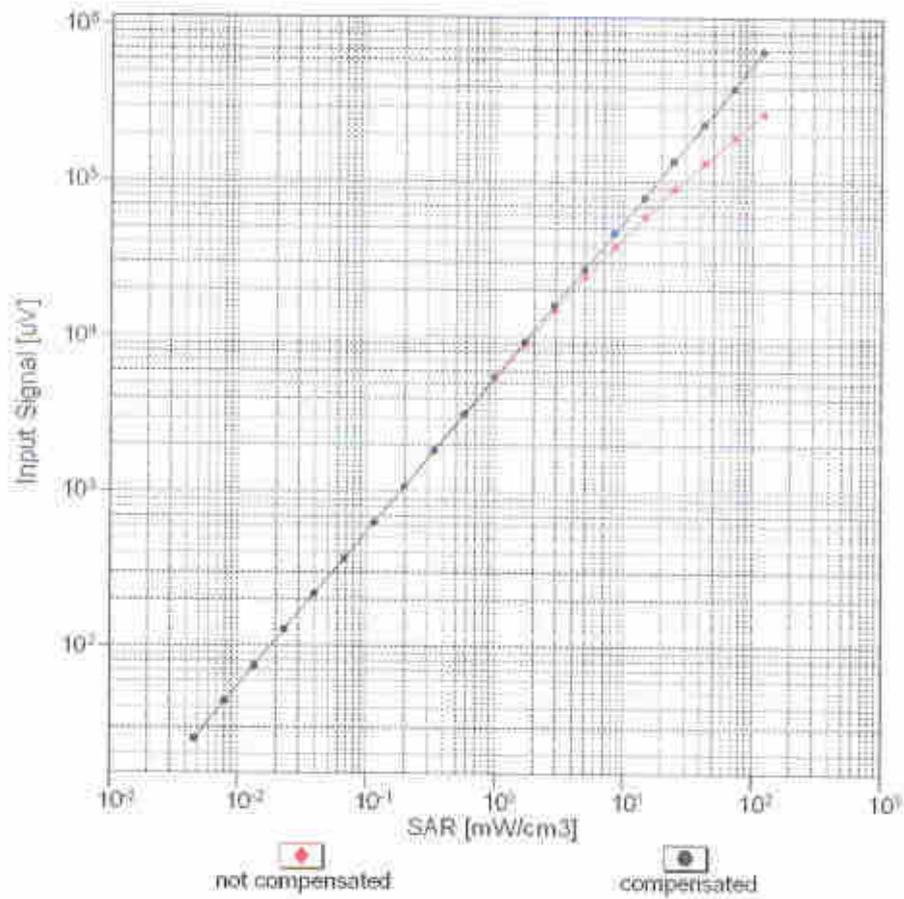


f=1800 MHz,R22



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

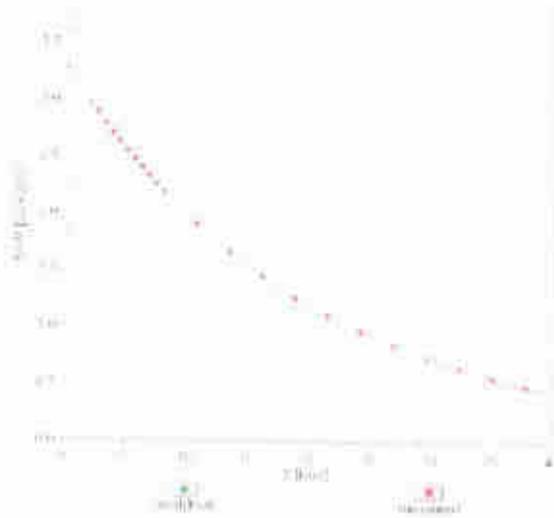
Dynamic Range f(SAR_{head}) (TEM cell , f_{eval}= 1900 MHz)



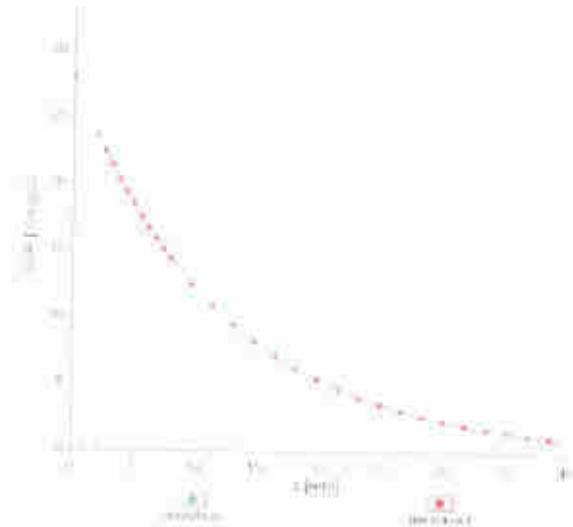
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz, WGLS R9 (H_convF)

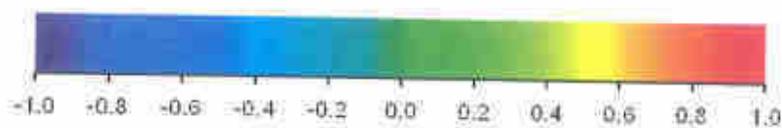
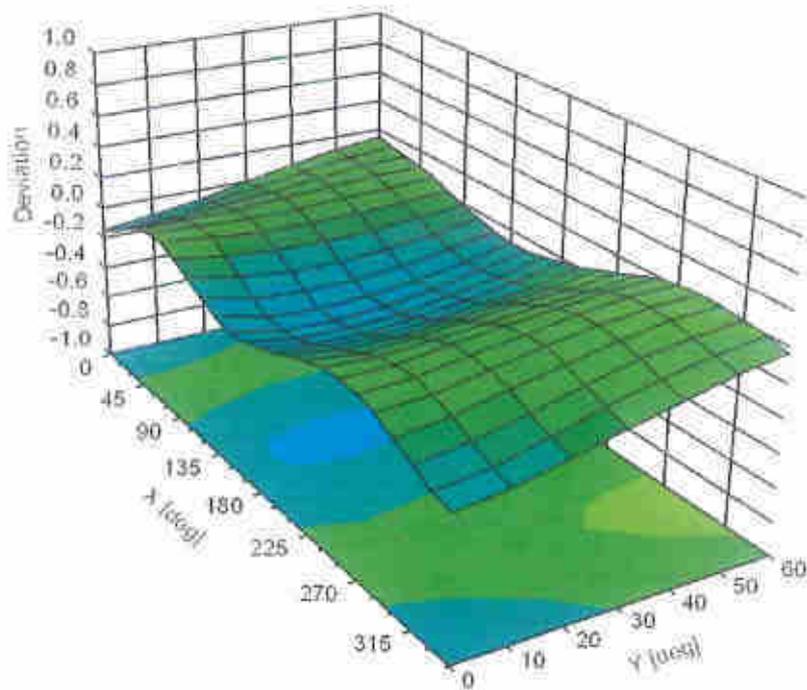


f = 1900 MHz, WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, θ), f = 900 MHz



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



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

Accreditation No.: **SCS 0108**

Client: **Sporton**

Certificate No: **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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&E 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-18)	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
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: SCS 0108

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

Glossary:

TSL	tissue simulating liquid
NORM _{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: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/ μV	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

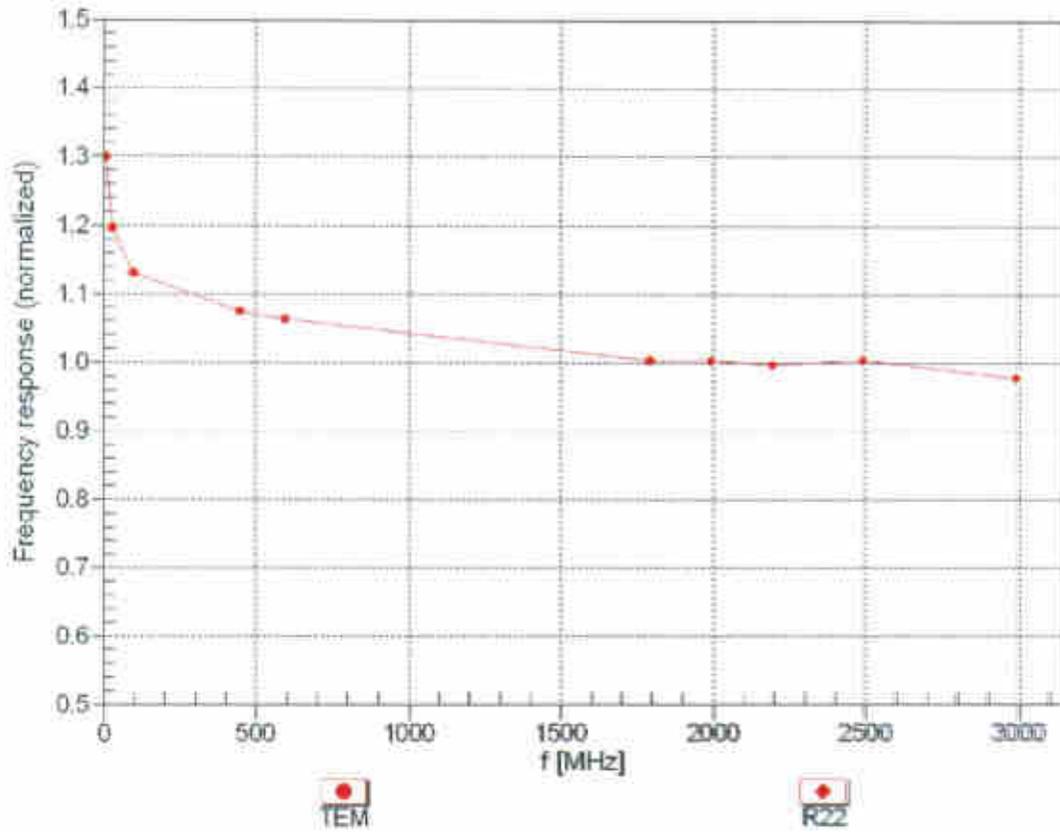
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth (mm) ^D	Unc (k=2)
750	41.9	0.89	10.71	10.71	10.71	0.62	0.80	± 12.0 %
835	41.5	0.90	10.45	10.45	10.45	0.46	0.94	± 12.0 %
900	41.5	0.97	10.16	10.16	10.16	0.33	1.09	± 12.0 %
1750	40.1	1.37	8.88	8.88	8.88	0.42	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.

^D 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.

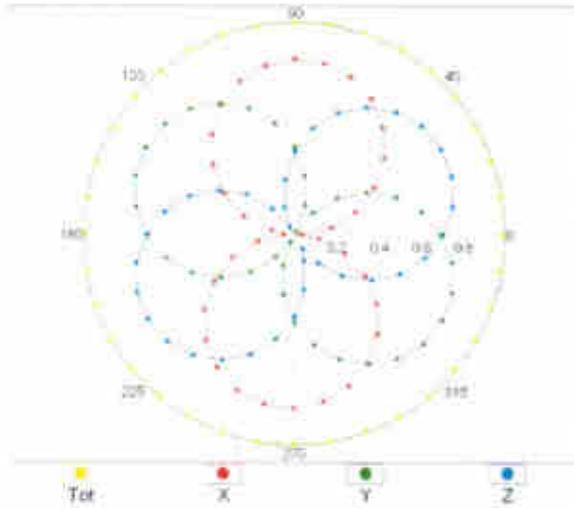
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



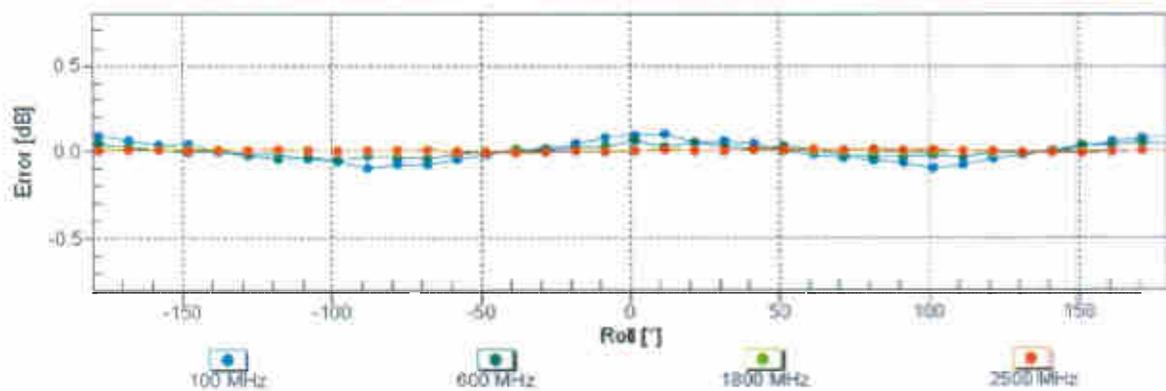
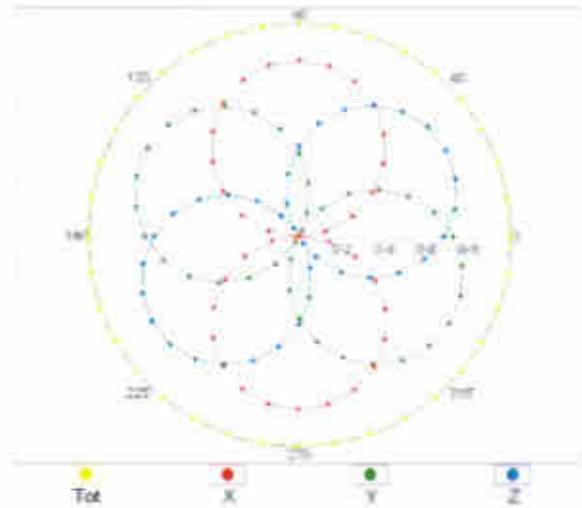
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

f=600 MHz,TEM

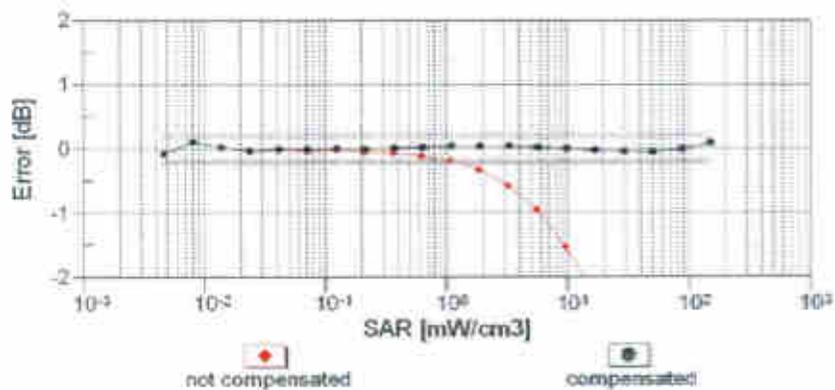
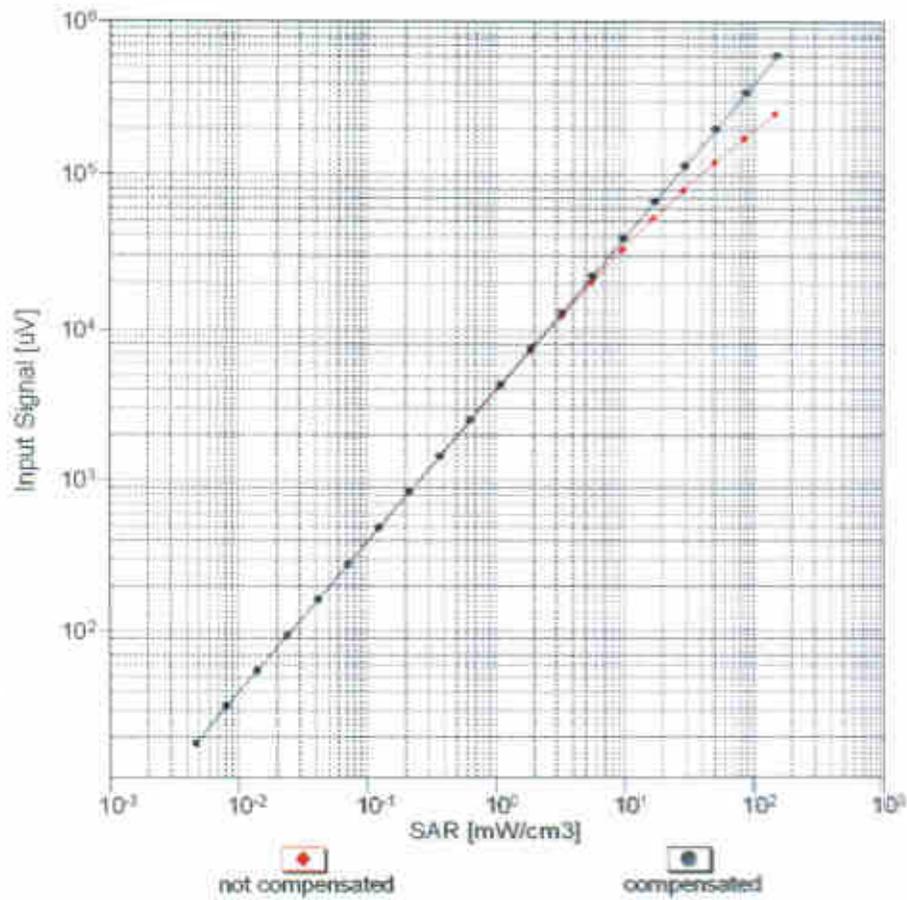


f=1800 MHz,R22



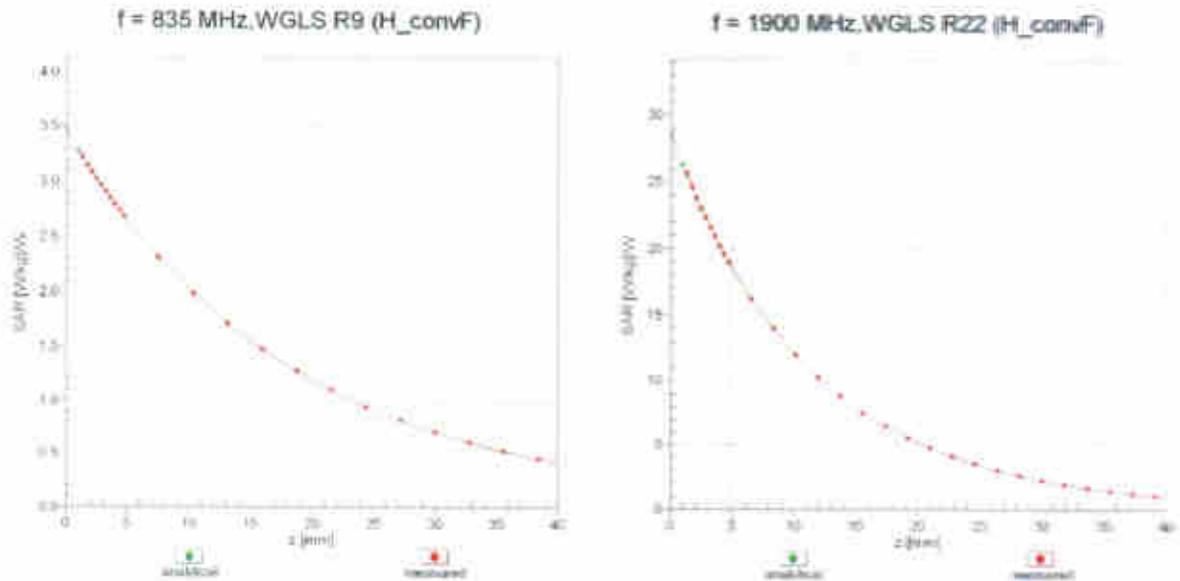
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



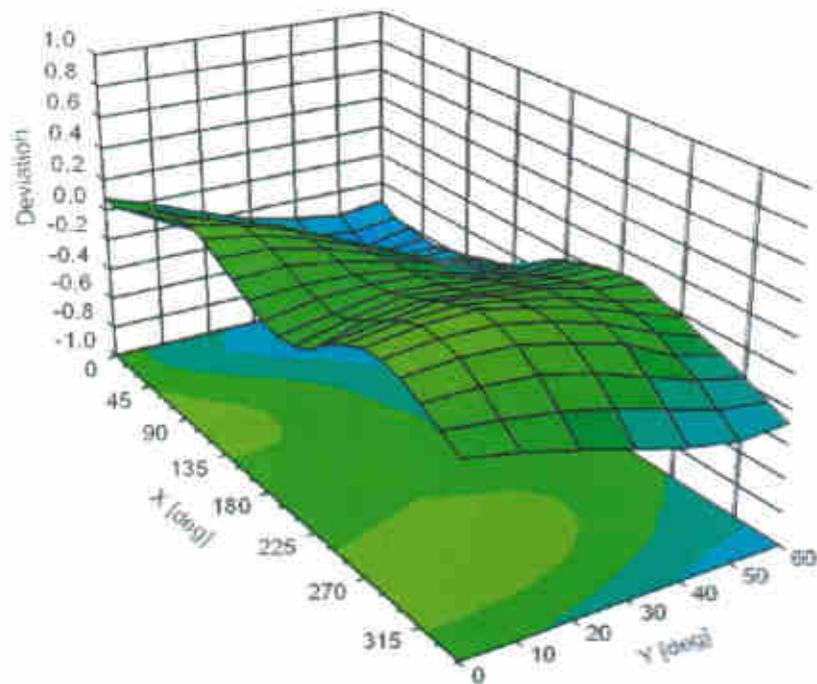
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), f = 900 MHz



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



Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.



Full Power Mode

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	23.07	23.09	23.01	24.00	23.25	23.30	23.30	24.00
3GPP Rel 99	RMC 12.2Kbps	23.08	23.10	23.02	24.00	23.27	23.33	23.31	24.00
3GPP Rel 6	HSDPA Subtest-1	21.88	21.76	21.69	22.50	22.25	22.27	22.27	23.00
3GPP Rel 6	HSDPA Subtest-2	21.90	21.78	21.68	22.50	22.29	22.28	22.31	23.00
3GPP Rel 6	HSDPA Subtest-3	21.34	21.30	21.22	22.00	21.83	21.83	21.78	22.50
3GPP Rel 6	HSDPA Subtest-4	21.44	21.26	21.23	22.00	21.79	21.77	21.82	22.50
3GPP Rel 6	HSUPA Subtest-1	21.59	21.69	21.70	22.50	21.89	22.09	21.96	22.50
3GPP Rel 6	HSUPA Subtest-2	19.88	20.13	20.14	21.00	20.18	20.53	20.40	21.00
3GPP Rel 6	HSUPA Subtest-3	21.34	21.47	21.56	22.50	21.64	21.87	21.82	22.50
3GPP Rel 6	HSUPA Subtest-4	20.03	20.45	20.25	21.50	20.33	20.40	20.51	21.50
3GPP Rel 6	HSUPA Subtest-5	21.67	21.68	21.59	22.50	21.97	22.08	21.85	22.50



Band 2 (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				18700	18900	19100	23	0	
Frequency (MHz)				1860	1880	1900			
20	QPSK	1	0	22.24	22.42	22.23	22	1	
20	QPSK	1	49	22.21	22.27	22.23			
20	QPSK	1	99	22.11	22.19	22.12			
20	QPSK	50	0	21.10	21.35	21.24	22	1	
20	QPSK	50	24	21.24	21.30	21.33			
20	QPSK	50	50	21.12	21.27	21.34			
20	QPSK	100	0	21.22	21.26	21.21	22	1	
20	16QAM	1	0	21.67	21.85	21.58			
20	16QAM	1	49	21.56	21.66	21.55			
20	16QAM	1	99	21.55	21.54	21.45	21	2	
20	16QAM	50	0	20.43	20.42	20.45			
20	16QAM	50	24	20.34	20.43	20.34			
20	16QAM	50	50	20.33	20.40	20.33	21	2	
20	16QAM	100	0	20.34	20.39	20.31			
Channel				18675	18900	19125			
Frequency (MHz)				1857.5	1880	1902.5			
15	QPSK	1	0	22.11	22.33	22.36	22	1	
15	QPSK	1	37	22.33	22.18	22.36			
15	QPSK	1	74	22.23	22.10	22.25			
15	QPSK	36	0	21.22	21.13	21.37	22	1	
15	QPSK	36	20	21.36	21.21	21.46			
15	QPSK	36	39	21.24	21.18	21.47			
15	QPSK	75	0	21.34	21.17	21.34	22	1	
15	16QAM	1	0	21.79	21.76	21.69			
15	16QAM	1	37	21.68	21.57	21.68			
15	16QAM	1	74	21.67	21.45	21.58	21	2	
15	16QAM	36	0	20.55	20.33	20.58			
15	16QAM	36	20	20.46	20.34	20.47			
15	16QAM	36	39	20.45	20.31	20.46	21	2	
15	16QAM	36	75	20.46	20.30	20.44			
Channel				18650	18900	19150			
Frequency (MHz)				1855	1880	1905			
10	QPSK	1	0	22.23	22.24	22.23	22	1	
10	QPSK	1	25	22.21	22.09	22.12			
10	QPSK	1	49	22.35	22.01	22.38			
10	QPSK	25	0	21.34	21.43	21.50	22	1	
10	QPSK	25	12	21.48	21.12	21.59			
10	QPSK	25	25	21.36	21.30	21.60			
10	QPSK	50	0	21.46	21.08	21.47	22	1	
10	16QAM	1	0	21.91	21.67	21.82			
10	16QAM	1	25	21.80	21.48	21.81			
10	16QAM	1	49	21.79	21.54	21.71	21	2	
10	16QAM	25	0	20.67	20.24	20.71			
10	16QAM	25	12	20.58	20.25	20.60			
10	16QAM	25	25	20.57	20.22	20.59	21	2	
10	16QAM	25	50	20.58	20.21	20.57			
Channel				18625	18900	19175			
Frequency (MHz)				1852.5	1880	1907.5			
5	QPSK	1	0	22.02	22.24	22.33	22	1	
5	QPSK	1	12	22.24	22.09	22.33			
5	QPSK	1	24	22.14	22.01	22.22			
5	QPSK	12	0	21.13	21.04	21.34	22	1	
5	QPSK	12	7	21.27	21.12	21.43			
5	QPSK	12	13	21.15	21.09	21.44			
5	QPSK	25	0	21.25	21.08	21.31	22	1	
5	16QAM	1	0	21.70	21.67	21.66			
5	16QAM	1	12	21.59	21.48	21.65			
5	16QAM	1	24	21.58	21.36	21.55	21	2	
5	16QAM	12	0	20.46	20.24	20.55			
5	16QAM	12	7	20.37	20.25	20.44			
5	16QAM	12	13	20.36	20.22	20.43	21	2	
5	16QAM	12	25	20.37	20.21	20.41			
Channel				18615	18900	19185			
Frequency (MHz)				1851.5	1880	1908.5			
3	QPSK	1	0	22.21	22.33	22.20	22	1	
3	QPSK	1	8	22.12	22.18	22.20			
3	QPSK	1	14	22.02	22.10	22.09			
3	QPSK	8	0	21.01	21.13	21.21	22	1	
3	QPSK	8	4	21.15	21.21	21.30			
3	QPSK	8	7	21.03	21.18	21.31			
3	QPSK	15	0	21.13	21.17	21.18	22	1	
3	16QAM	1	0	21.58	21.76	21.53			
3	16QAM	1	8	21.47	21.57	21.52			
3	16QAM	1	14	21.46	21.45	21.42	21	2	
3	16QAM	8	0	20.34	20.33	20.42			
3	16QAM	8	4	20.25	20.34	20.31			
3	16QAM	8	7	20.24	20.31	20.30	21	2	
3	16QAM	15	0	20.25	20.30	20.28			
Channel				18607	18900	19193			
Frequency (MHz)				1850.7	1880	1909.3			
1.4	QPSK	1	0	22.11	22.23	22.36	22	1	
1.4	QPSK	1	3	22.33	22.21	22.36			
1.4	QPSK	1	5	22.23	22.38	22.25			
1.4	QPSK	3	0	22.13	22.34	22.23	22	1	
1.4	QPSK	3	1	22.30	22.34	22.34			
1.4	QPSK	3	3	22.24	22.23	22.32			
1.4	QPSK	6	0	21.34	21.45	21.34	22	1	
1.4	16QAM	1	0	21.79	21.90	21.69			
1.4	16QAM	1	3	21.68	21.85	21.68			
1.4	16QAM	1	5	21.67	21.73	21.58	22	1	
1.4	16QAM	3	0	21.35	21.34	21.34			
1.4	16QAM	3	1	21.23	21.33	21.33			
1.4	16QAM	3	3	21.22	21.34	21.32	21	2	
1.4	16QAM	3	3	21.22	21.34	21.32			
1.4	16QAM	6	0	20.46	20.58	20.44			

Band 4 (AWS Band) Part 27L (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				20050	20175	20300	23	0	
Frequency (MHz)				1720	1732.5	1745			
20	QPSK	1	0	22.23	22.26	22.12	22	1	
20	QPSK	1	49	22.10	22.13	22.21			
20	QPSK	1	99	22.09	22.05	22.23			
20	QPSK	50	0	21.15	21.26	21.20	22	1	
20	QPSK	50	24	21.11	21.18	21.25			
20	QPSK	50	50	21.09	21.13	21.22			
20	QPSK	100	0	21.10	21.18	21.09	22	1	
20	16QAM	1	0	21.45	21.54	21.34			
20	16QAM	1	49	21.44	21.51	21.33			
20	16QAM	1	99	21.34	21.42	21.12	21	2	
20	16QAM	50	0	20.44	20.32	20.21			
20	16QAM	50	24	20.34	20.31	20.22			
20	16QAM	50	50	20.21	20.25	20.21	21	2	
20	16QAM	100	0	20.45	20.30	20.11			
Channel				20025	20175	20325			
Frequency (MHz)				1717.5	1732.5	1747.5			
15	QPSK	1	0	22.12	22.21	22.25	22	1	
15	QPSK	1	37	22.22	22.09	22.11			
15	QPSK	1	74	22.21	22.24	22.12			
15	QPSK	36	0	21.27	21.37	21.33	22	1	
15	QPSK	36	20	21.23	21.37	21.38			
15	QPSK	36	39	21.21	21.32	21.35			
15	QPSK	75	0	21.22	21.37	21.22	22	1	
15	16QAM	1	0	21.57	21.73	21.47			
15	16QAM	1	37	21.56	21.70	21.46			
15	16QAM	1	74	21.46	21.61	21.25	21	2	
15	16QAM	36	0	20.56	20.51	20.34			
15	16QAM	36	20	20.46	20.50	20.35			
15	16QAM	36	39	20.33	20.44	20.34	21	2	
15	16QAM	36	75	20.57	20.49	20.24			
Channel				20000	20175	20350			
Frequency (MHz)				1715	1732.5	1750			
10	QPSK	1	0	22.04	22.12	22.19	22	1	
10	QPSK	1	25	22.14	22.00	22.05			
10	QPSK	1	49	22.13	22.15	22.06			
10	QPSK	25	0	21.19	21.28	21.27	22	1	
10	QPSK	25	12	21.15	21.28	21.32			
10	QPSK	25	25	21.13	21.23	21.29			
10	QPSK	50	0	21.14	21.28	21.16	22	1	
10	16QAM	1	0	21.49	21.64	21.41			
10	16QAM	1	25	21.48	21.61	21.40			
10	16QAM	1	49	21.38	21.52	21.19	21	2	
10	16QAM	25	0	20.48	20.42	20.28			
10	16QAM	25	12	20.38	20.41	20.29			
10	16QAM	25	25	20.25	20.35	20.28	21	2	
10	16QAM	25	50	20.49	20.40	20.18			
Channel				19975	20175	20375			
Frequency (MHz)				1712.5	1732.5	1752.5			
5	QPSK	1	0	22.15	22.15	22.17	22	1	
5	QPSK	1	12	22.13	22.00				



Band 5 (Cellular Band) Part 22H(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				20450	20525	20600			
Frequency (MHz)				829	836.5	844			
10	QPSK	1	0	22.80	22.89	22.83	23.5	0	
10	QPSK	1	25	22.78	22.85	22.83			
10	QPSK	1	49	22.76	22.83	22.80			
10	QPSK	25	0	21.63	21.92	21.83	22.5	1	
10	QPSK	25	12	21.88	21.86	21.90			
10	QPSK	25	25	21.85	21.77	21.91			
10	QPSK	50	0	21.90	21.91	21.78	22.5	1	
10	16QAM	1	0	21.93	21.99	22.34			
10	16QAM	1	25	21.87	22.07	22.04			
10	16QAM	1	49	22.02	21.94	21.92	21.5	2	
10	16QAM	25	0	20.88	20.93	20.91			
10	16QAM	25	12	21.03	20.96	21.00			
10	16QAM	25	25	21.02	20.96	20.90	21.5	2	
10	16QAM	50	0	20.96	20.89	20.84			
Channel				20425	20525	20625			Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5			
5	QPSK	1	0	22.76	22.88	22.84	23.5	0	
5	QPSK	1	12	22.83	22.85	22.75			
5	QPSK	1	24	22.64	22.80	22.68			
5	QPSK	12	0	21.78	21.85	21.81	22.5	1	
5	QPSK	12	7	21.86	21.81	21.82			
5	QPSK	12	13	21.74	21.77	21.72			
5	QPSK	25	0	21.83	21.73	21.77	22.5	1	
5	16QAM	1	0	22.08	21.97	21.93			
5	16QAM	1	12	21.95	21.95	21.96			
5	16QAM	1	24	21.84	22.00	21.86	21.5	2	
5	16QAM	12	0	20.97	20.97	20.90			
5	16QAM	12	7	20.95	20.92	20.92			
5	16QAM	12	13	20.84	20.99	20.92	21.5	2	
5	16QAM	25	0	20.93	20.94	20.98			
Channel				20416	20525	20635			Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5			
3	QPSK	1	0	22.79	22.84	22.87	23.5	0	
3	QPSK	1	8	22.75	22.83	22.80			
3	QPSK	1	14	22.77	22.81	22.75			
3	QPSK	8	0	21.80	21.76	21.81	22.5	1	
3	QPSK	8	4	21.90	21.91	21.84			
3	QPSK	8	7	21.78	21.81	21.78			
3	QPSK	15	0	21.84	21.81	21.83	22.5	1	
3	16QAM	1	0	21.96	21.96	21.94			
3	16QAM	1	8	21.87	22.04	21.92			
3	16QAM	1	14	21.86	21.99	21.93	21.5	2	
3	16QAM	8	0	20.85	20.94	20.87			
3	16QAM	8	4	20.95	20.99	20.91			
3	16QAM	8	7	20.83	20.98	20.84	21.5	2	
3	16QAM	15	0	20.89	20.92	20.78			
Channel				20407	20525	20643			Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3			
1.4	QPSK	1	0	22.75	22.74	22.71	23.5	0	
1.4	QPSK	1	3	22.69	22.81	22.76			
1.4	QPSK	1	5	22.65	22.78	22.65			
1.4	QPSK	3	0	22.75	22.80	22.75	22.5	1	
1.4	QPSK	3	1	22.80	22.84	22.83			
1.4	QPSK	3	3	22.77	22.88	22.81			
1.4	QPSK	6	0	21.74	21.69	21.73	22.5	1	
1.4	16QAM	1	0	21.84	22.03	21.82			
1.4	16QAM	1	3	21.92	22.03	21.90			
1.4	16QAM	1	5	21.87	21.97	21.76	22.5	1	
1.4	16QAM	3	0	21.70	21.84	21.71			
1.4	16QAM	3	1	21.74	21.77	21.88			
1.4	16QAM	3	3	21.70	21.71	21.73	21.5	2	
1.4	16QAM	6	0	20.83	20.90	20.82			

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				20850	21100	21350			
Frequency (MHz)				2510	2535	2560			
20	QPSK	1	0	22.47	22.61	22.45	23.5	0	
20	QPSK	1	49	22.42	22.39	22.36			
20	QPSK	1	99	22.38	22.41	22.51			
20	QPSK	50	0	21.56	21.56	21.46	22.5	1	
20	QPSK	50	24	21.51	21.43	21.48			
20	QPSK	50	50	21.52	21.43	21.43			
20	QPSK	100	0	21.47	21.53	21.52	22.5	1	
20	16QAM	1	0	21.56	21.47	21.45			
20	16QAM	1	49	21.47	21.46	21.45			
20	16QAM	1	99	21.64	21.48	21.63	21.5	2	
20	16QAM	50	0	20.48	20.42	20.43			
20	16QAM	50	24	20.56	20.48	20.54			
20	16QAM	50	50	20.48	20.46	20.50	21.5	2	
20	16QAM	100	0	20.48	20.46	20.61			
Channel				20825	21100	21375			Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5			
15	QPSK	1	0	22.40	22.39	22.35	23.5	0	
15	QPSK	1	37	22.37	22.44	22.25			
15	QPSK	1	74	22.80	22.56	22.47			
15	QPSK	36	0	21.37	21.32	21.42	22.5	1	
15	QPSK	36	20	21.42	21.43	21.38			
15	QPSK	36	39	21.46	21.45	21.33			
15	QPSK	75	0	21.44	21.43	21.39	22.5	1	
15	16QAM	1	0	21.56	21.59	21.55			
15	16QAM	1	37	21.48	21.56	21.37			
15	16QAM	1	74	21.73	21.67	21.63	21.5	2	
15	16QAM	36	0	20.46	20.44	20.54			
15	16QAM	36	20	20.52	20.46	20.52			
15	16QAM	36	39	20.57	20.57	20.56	21.5	2	
15	16QAM	75	0	20.49	20.41	20.48			
Channel				20800	21100	21400			Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565			
10	QPSK	1	0	22.44	22.30	22.25	23.5	0	
10	QPSK	1	25	22.44	22.36	22.27			
10	QPSK	1	49	22.39	22.43	22.47			
10	QPSK	25	0	21.40	21.32	21.20	22.5	1	
10	QPSK	25	12	21.40	21.34	21.26			
10	QPSK	25	25	21.36	21.41	21.29			
10	QPSK	50	0	21.32	21.40	21.28	22.5	1	
10	16QAM	1	0	21.43	21.48	21.35			
10	16QAM	1	25	21.53	21.46	21.33			
10	16QAM	1	49	21.50	21.55	21.44	21.5	2	
10	16QAM	25	0	20.38	20.43	20.30			
10	16QAM	25	12	20.39	20.46	20.37			
10	16QAM	25	25	20.45	20.52	20.41	21.5	2	
10	16QAM	50	0	20.38	20.39	20.37			
Channel				20775	21100	21425			Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5			
5	QPSK	1	0	22.36	22.36	22.39	23.5	0	
5	QPSK	1	12	22.30	22.39	22.29			
5	QPSK	1	24	22.43	22.44	22.23			
5	QPSK	12	0	21.34	21.35	21.20	22.5	1	
5	QPSK	12	7	21.37	21.38	21.24			
5	QPSK	12	13	21.41	21.38	21.23			
5	QPSK	25	0	21.43	21.38	21.24	22.5	1	
5	16QAM	1	0	21.43	21.47	21.38			
5	16QAM	1	12	21.48	21.50	21.40			
5	16QAM	1	24	21.50	21.47	21.43	21.5	2	
5	16QAM	12	0	20.42	20.45	20.31			
5	16QAM	12	7	20.46	20.49	20.46			
5	16QAM	12	13	20.49	20.42	20.34	21.5	2	
5	16QAM	25	0	20.43	20.55	20.35			



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				23060	23095	23130			
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	22.60	22.86	22.73	23.5	0	
10	QPSK	1	25	22.69	22.73	22.72			
10	QPSK	1	49	22.85	22.82	22.73			
10	QPSK	25	0	21.80	21.96	21.80	22.5	1	
10	QPSK	25	12	21.95	21.85	21.88			
10	QPSK	25	25	21.87	21.78	21.81			
10	QPSK	50	0	21.86	21.89	21.87	22.5	1	
10	16QAM	1	0	21.68	21.80	21.87			
10	16QAM	1	25	21.83	21.95	21.89			
10	16QAM	1	49	21.93	21.83	21.84	21.5	2	
10	16QAM	25	0	20.85	21.00	20.91			
10	16QAM	25	12	21.09	20.96	20.90			
10	16QAM	25	25	21.02	20.91	20.84	21.5	2	
10	16QAM	50	0	20.98	20.97	20.86			
Channel				23035	23095	23155			
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	22.74	22.73	22.71	23.5	0	
5	QPSK	1	12	22.83	22.72	22.68			
5	QPSK	1	24	22.71	22.80	22.65			
5	QPSK	12	0	21.82	21.87	21.81	22.5	1	
5	QPSK	12	7	21.83	21.82	21.71			
5	QPSK	12	13	21.79	21.81	21.69			
5	QPSK	25	0	21.76	21.84	21.80	22.5	1	
5	16QAM	1	0	21.62	21.83	21.84			
5	16QAM	1	12	21.81	21.70	21.57			
5	16QAM	1	24	21.84	21.92	21.83	21.5	2	
5	16QAM	12	0	20.84	20.85	20.82			
5	16QAM	12	7	20.87	20.94	20.82			
5	16QAM	12	13	20.89	20.92	20.89	21.5	2	
5	16QAM	25	0	20.91	20.95	20.82			
Channel				23025	23095	23165			
Frequency (MHz)				700.5	707.5	714.5			
3	QPSK	1	0	22.66	22.85	22.75	23.5	0	
3	QPSK	1	8	22.66	22.72	22.64			
3	QPSK	1	14	22.79	22.76	22.70			
3	QPSK	8	0	21.71	21.87	21.71	22.5	1	
3	QPSK	8	4	21.76	21.80	21.75			
3	QPSK	8	7	21.82	21.81	21.73			
3	QPSK	15	0	21.76	21.82	21.73	22.5	1	
3	16QAM	1	0	21.79	21.93	21.75			
3	16QAM	1	8	21.72	21.84	21.76			
3	16QAM	1	14	21.84	21.85	21.78	21.5	2	
3	16QAM	8	0	20.80	21.05	20.92			
3	16QAM	8	4	20.86	20.98	20.81			
3	16QAM	8	7	20.92	21.02	20.78	21.5	2	
3	16QAM	15	0	20.85	20.98	20.79			
Channel				23017	23095	23173			
Frequency (MHz)				699.7	707.5	715.3			
1.4	QPSK	1	0	22.58	22.79	22.70	23.5	0	
1.4	QPSK	1	3	22.58	22.68	22.50			
1.4	QPSK	1	5	22.47	22.60	22.54			
1.4	QPSK	3	0	22.62	22.65	22.62	22.5	1	
1.4	QPSK	3	1	22.63	22.78	22.66			
1.4	QPSK	3	3	22.65	22.69	22.60			
1.4	QPSK	6	0	21.70	21.74	21.79	22.5	1	
1.4	16QAM	1	0	21.53	21.68	21.51			
1.4	16QAM	1	3	21.55	21.78	21.57			
1.4	16QAM	1	5	21.47	21.63	21.55	22.5	1	
1.4	16QAM	3	0	21.75	21.84	21.72			
1.4	16QAM	3	1	21.75	21.90	21.56			
1.4	16QAM	3	3	21.68	21.84	21.71	21.5	2	
1.4	16QAM	6	0	20.65	20.77	20.80			

Band 13(700MHz Band) Part 27F									
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				23230					
Frequency (MHz)				782					
10	QPSK	1	0		22.83		23.5	0	
10	QPSK	1	25		22.69				
10	QPSK	1	49		22.69				
10	QPSK	25	0		21.92		22.5	1	
10	QPSK	25	12		21.89				
10	QPSK	25	25		21.75				
10	QPSK	50	0		21.95		22.5	1	
10	16QAM	1	0		21.61				
10	16QAM	1	25		21.69				
10	16QAM	1	49		21.63		21.5	2	
10	16QAM	25	0		20.95				
10	16QAM	25	12		20.93				
10	16QAM	25	25		20.91		21.5	2	
10	16QAM	50	0		20.95				
Channel				23205	23230	23255			
Frequency (MHz)				779.5	782	784.5			
5	QPSK	1	0		22.80	22.74	23.5	0	
5	QPSK	1	12		22.69	22.82			
5	QPSK	1	24		22.72	22.69			
5	QPSK	12	0		21.70	21.85	22.5	1	
5	QPSK	12	7		21.88	21.87			
5	QPSK	12	13		21.79	21.63			
5	QPSK	25	0		21.75	21.88	22.5	1	
5	16QAM	1	0		21.66	21.73			
5	16QAM	1	12		21.68	21.81			
5	16QAM	1	24		21.80	21.77	21.5	2	
5	16QAM	12	0		20.92	20.97			
5	16QAM	12	7		21.04	21.00			
5	16QAM	12	13		20.92	20.98	21.5	2	
5	16QAM	25	0		20.94	20.96			



**Band 17 (700MHz Band)
Part 27H(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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.60	22.76	22.72	23.5	0
10	QPSK	1	25	22.62	22.68	22.69		
10	QPSK	1	49	22.73	22.65	22.64		
10	QPSK	25	0	21.87	21.83	21.79	22.5	1
10	QPSK	25	12	21.83	21.81	21.78		
10	QPSK	25	25	21.81	21.78	21.79		
10	QPSK	50	0	21.81	21.75	21.76	22.5	1
10	16QAM	1	0	21.57	21.58	21.71		
10	16QAM	1	25	21.69	21.64	21.61		
10	16QAM	1	49	21.61	21.61	21.65	21.5	2
10	16QAM	25	0	20.86	20.92	20.90		
10	16QAM	25	12	20.93	20.91	20.89		
10	16QAM	25	25	20.82	20.80	20.81	21.5	2
10	16QAM	50	0	20.88	20.91	20.94		
Channel				23755	23790	23825		
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.61	22.60	22.71	23.5	0
5	QPSK	1	12	22.75	22.74	22.63		
5	QPSK	1	24	22.71	22.74	22.58		
5	QPSK	12	0	21.71	21.78	21.78	22.5	1
5	QPSK	12	7	21.78	21.82	21.79		
5	QPSK	12	13	21.86	21.86	21.77		
5	QPSK	25	0	21.82	21.82	21.75	22.5	1
5	16QAM	1	0	21.58	21.66	21.60		
5	16QAM	1	12	21.66	21.64	21.52		
5	16QAM	1	24	21.70	21.54	21.64	21.5	2
5	16QAM	12	0	20.85	20.93	20.82		
5	16QAM	12	7	21.03	20.97	20.92		
5	16QAM	12	13	20.90	20.84	20.89	21.5	2
5	16QAM	25	0	20.93	20.84	20.86		



Band 42 (3.5GHz 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				43190	43340	43490	20.5	0
Frequency (MHz)				3560	3575	3590		
20	QPSK	1	0	19.89	19.86	19.88	19.5	1
20	QPSK	1	49	19.67	19.67	19.66		
20	QPSK	1	99	19.63	19.51	19.55		
20	QPSK	50	0	18.91	18.86	18.89		
20	QPSK	50	24	18.78	18.79	18.66		
20	QPSK	50	50	18.76	18.69	18.63		
20	QPSK	100	0	18.75	18.83	18.79	19.5	1
20	16QAM	1	0	18.98	19.01	19.00		
20	16QAM	1	49	18.78	18.79	18.78		
20	16QAM	1	99	18.72	18.61	18.57		
20	16QAM	50	0	17.97	18.03	17.93		
20	16QAM	50	24	17.86	17.97	17.74		
20	16QAM	50	50	17.73	17.83	17.71	18.5	2
20	16QAM	100	0	17.93	17.80	17.68		
Channel				43165	43340	43515	20.5	0
Frequency (MHz)				3557.5	3575	3592.5		
15	QPSK	1	0	19.86	19.87	19.81	19.5	1
15	QPSK	1	37	19.70	19.77	19.62		
15	QPSK	1	74	19.65	19.66	19.61		
15	QPSK	36	0	18.80	18.90	18.77		
15	QPSK	36	20	18.71	18.73	18.71		
15	QPSK	36	39	18.68	18.71	18.62		
15	QPSK	75	0	18.80	18.78	18.65	19.5	1
15	16QAM	1	0	18.98	19.03	18.91		
15	16QAM	1	37	18.83	18.79	18.73		
15	16QAM	1	74	18.78	18.78	18.63		
15	16QAM	36	0	17.85	17.83	17.80		
15	16QAM	36	20	17.85	17.78	17.64		
15	16QAM	36	39	17.73	17.76	17.66	18.5	2
15	16QAM	75	0	17.89	17.87	17.74		
Channel				43140	43340	43540	20.5	0
Frequency (MHz)				3555	3575	3595		
10	QPSK	1	0	19.82	19.81	19.72	19.5	1
10	QPSK	1	25	19.67	19.70	19.51		
10	QPSK	1	49	19.63	19.64	19.58		
10	QPSK	25	0	18.72	18.76	18.70		
10	QPSK	25	12	18.67	18.71	18.62		
10	QPSK	25	25	18.62	18.65	18.56		
10	QPSK	50	0	18.72	18.76	18.70	19.5	1
10	16QAM	1	0	18.89	19.01	18.85		
10	16QAM	1	25	18.74	18.81	18.75		
10	16QAM	1	49	18.77	18.84	18.67		
10	16QAM	25	0	17.87	17.96	17.80		
10	16QAM	25	12	17.81	17.88	17.83		
10	16QAM	25	25	17.77	17.83	17.65	18.5	2
10	16QAM	50	0	17.77	17.84	17.78		
Channel				43115	43340	43565	20.5	0
Frequency (MHz)				3552.5	3575	3597.5		
5	QPSK	1	0	19.67	19.78	19.58	19.5	1
5	QPSK	1	12	19.58	19.67	19.60		
5	QPSK	1	24	19.63	19.63	19.53		
5	QPSK	12	0	18.70	18.70	18.61		
5	QPSK	12	7	18.64	18.71	18.64		
5	QPSK	12	13	18.70	18.70	18.60		
5	QPSK	25	0	18.67	18.74	18.58	19.5	1
5	16QAM	1	0	18.76	18.87	18.69		
5	16QAM	1	12	18.71	18.80	18.61		
5	16QAM	1	24	18.79	18.79	18.69		
5	16QAM	12	0	17.73	17.80	17.65		
5	16QAM	12	7	17.77	17.74	17.68		
5	16QAM	12	13	17.64	17.73	17.64	18.5	2
5	16QAM	25	0	17.77	17.77	17.68		

Band 43 (3.7GHz Band) for FCC use

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				43890	44090	44490	20.5	0
Frequency (MHz)				3610	3650	3690		
20	QPSK	1	0	19.81	19.86	19.84	20.5	0
20	QPSK	1	49	19.63	19.63	19.60		
20	QPSK	1	99	19.44	19.48	19.43		
20	QPSK	50	0	18.87	18.90	18.76		
20	QPSK	50	24	18.61	18.64	18.72		
20	QPSK	50	50	18.59	18.50	18.58		
20	QPSK	100	0	18.65	18.71	18.68	19.5	1
20	16QAM	1	0	18.92	18.94	19.01		
20	16QAM	1	49	18.76	18.76	18.62		
20	16QAM	1	99	18.56	18.59	18.55		
20	16QAM	50	0	17.95	17.88	17.85		
20	16QAM	50	24	17.69	17.72	17.80		
20	16QAM	50	50	17.68	17.66	17.68	18.5	2
20	16QAM	100	0	17.74	17.77	17.73		
Channel				43665	44090	44515	20.5	0
Frequency (MHz)				3607.5	3650	3692.5		
15	QPSK	1	0	19.85	19.84	19.82	20.5	0
15	QPSK	1	37	19.64	19.61	19.59		
15	QPSK	1	74	19.56	19.53	19.50		
15	QPSK	36	0	18.75	18.83	18.72		
15	QPSK	36	20	18.73	18.59	18.57		
15	QPSK	36	39	18.50	18.52	18.60		
15	QPSK	75	0	18.61	18.63	18.71	19.5	1
15	16QAM	1	0	18.88	18.97	18.95		
15	16QAM	1	37	18.77	18.74	18.63		
15	16QAM	1	74	18.59	18.56	18.62		
15	16QAM	36	0	17.80	17.88	17.66		
15	16QAM	36	20	17.77	17.74	17.61		
15	16QAM	36	39	17.65	17.57	17.55	18.5	2
15	16QAM	75	0	17.70	17.63	17.71		
Channel				43640	44090	44540	20.5	0
Frequency (MHz)				3605	3650	3695		
10	QPSK	1	0	19.85	19.81	19.84	20.5	0
10	QPSK	1	25	19.83	19.78	19.67		
10	QPSK	1	49	19.61	19.65	19.53		
10	QPSK	25	0	18.81	18.87	18.74		
10	QPSK	25	12	18.85	18.80	18.77		
10	QPSK	25	25	18.75	18.79	18.76		
10	QPSK	50	0	18.84	18.89	18.77	19.5	1
10	16QAM	1	0	18.98	18.95	19.02		
10	16QAM	1	25	18.86	18.92	18.80		
10	16QAM	1	49	18.74	18.69	18.66		
10	16QAM	25	0	17.91	17.97	17.85		
10	16QAM	25	12	17.94	17.90	17.88		
10	16QAM	25	25	17.85	17.89	17.77	18.5	2
10	16QAM	50	0	17.83	17.89	17.76		
Channel				43615	44090	44565	20.5	0
Frequency (MHz)				3602.5	3650	3697.5		
5	QPSK	1	0	19.80	19.83	19.76	20.5	0
5	QPSK	1	12	19.81	19.82	19.75		
5	QPSK	1	24	19.81	19.85	19.74		
5	QPSK	12	0	19.83	19.77	19.77		
5	QPSK	12	7	19.79	19.82	19.73		
5	QPSK	12	13	19.74	19.80	19.77		
5	QPSK	25	0	18.77	18.83	18.80	19.5	1
5	16QAM	1	0	18.94	18.91	18.89		
5	16QAM	1	12	18.94	18.92	18.88		
5	16QAM	1	24	18.84	18.90	18.55		
5	16QAM	12	0	18.17	18.22	18.18		
5	16QAM	12	7	18.26	18.19	18.22		
5	16QAM	12	13	18.16	18.24	18.11	18.5	2
5	16QAM	25	0	18.13	18.17	18.07		



Band 48 (3.5G 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.	Tune-up limit (dBm)	MPR (dB)		
Channel				55340	55830	56150	56640	Tune-up limit (dBm)	MPR (dB)		
Frequency (MHz)				3560	3609	3641	3690				
20	QPSK	1	0	19.91	19.72	19.72	19.66	20.5	0		
20	QPSK	1	49	19.88	19.68	19.66	19.51				
20	QPSK	1	99	19.81	19.66	19.67	19.50				
20	QPSK	50	0	18.89	18.71	18.81	18.57				
20	QPSK	50	24	18.86	18.70	18.76	18.51	19.5	1		
20	QPSK	50	50	18.87	18.65	18.69	18.52				
20	QPSK	100	0	18.78	18.59	18.75	18.60				
20	16QAM	1	0	18.90	18.73	18.77	18.55				
20	16QAM	1	49	18.90	18.71	18.68	18.54	19.5	1		
20	16QAM	1	99	18.85	18.70	18.71	18.63				
20	16QAM	50	0	17.98	17.80	17.80	17.66				
20	16QAM	50	24	17.98	17.79	17.85	17.51				
20	16QAM	50	50	17.86	17.74	17.77	17.60	18.5	2		
20	16QAM	100	0	17.89	17.69	17.85	17.70				
Channel				55315	55820	56160	56665			Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3557.5	3608	3642	3692.5				
15	QPSK	1	0	19.74	19.59	19.69	19.38	20.5	0		
15	QPSK	1	37	19.77	19.58	19.54	19.39				
15	QPSK	1	74	19.85	19.53	19.64	19.47				
15	QPSK	36	0	18.80	18.52	18.61	18.37				
15	QPSK	36	20	18.79	18.60	18.56	18.40	19.5	1		
15	QPSK	36	39	18.75	18.53	18.57	18.40				
15	QPSK	75	0	18.77	18.57	18.64	18.39				
15	16QAM	1	0	18.87	18.72	18.73	18.51				
15	16QAM	1	37	18.89	18.70	18.68	18.43	19.5	1		
15	16QAM	1	74	18.96	18.63	18.74	18.58				
15	16QAM	36	0	17.89	17.61	17.70	17.46				
15	16QAM	36	20	17.88	17.69	17.66	17.45				
15	16QAM	36	39	17.85	17.63	17.67	17.50	18.5	2		
15	16QAM	75	0	17.86	17.57	17.82	17.48				
Channel				55290	55815	56165	56690			Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3555	3607.5	3642.5	3695				
10	QPSK	1	0	19.85	19.59	19.51	19.38	20.5	0		
10	QPSK	1	25	19.80	19.62	19.50	19.35				
10	QPSK	1	49	19.87	19.66	19.61	19.43				
10	QPSK	25	0	18.83	18.55	18.55	18.40				
10	QPSK	25	12	18.83	18.64	18.53	18.36	19.5	1		
10	QPSK	25	25	18.75	18.55	18.51	18.34				
10	QPSK	50	0	18.79	18.62	18.49	18.33				
10	16QAM	1	0	18.69	18.45	18.35	18.22				
10	16QAM	1	25	18.65	18.38	18.36	18.20	19.5	1		
10	16QAM	1	49	18.71	18.42	18.35	18.18				
10	16QAM	25	0	17.88	17.62	17.60	17.35				
10	16QAM	25	12	17.88	17.61	17.58	17.41				
10	16QAM	25	25	17.79	17.61	17.56	17.39	18.5	2		
10	16QAM	50	0	17.85	17.59	17.55	17.48				
Channel				55265	55810	56170	56715			Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3552.5	3607	3643	3697.5				
5	QPSK	1	0	19.84	19.63	19.62	19.36	20.5	0		
5	QPSK	1	12	19.81	19.62	19.59	19.42				
5	QPSK	1	24	19.77	19.53	19.58	19.40				
5	QPSK	12	0	18.80	18.55	18.54	18.38				
5	QPSK	12	7	18.78	18.52	18.49	18.37	19.5	1		
5	QPSK	12	13	18.77	18.51	18.56	18.28				
5	QPSK	25	0	18.72	18.56	18.53	18.37				
5	16QAM	1	0	18.90	18.60	18.67	18.41				
5	16QAM	1	12	18.86	18.58	18.55	18.37	19.5	1		
5	16QAM	1	24	18.81	18.57	18.62	18.43				
5	16QAM	12	0	17.80	17.55	17.53	17.37				
5	16QAM	12	7	17.78	17.52	17.49	17.37				
5	16QAM	12	13	17.76	17.50	17.56	17.33	18.5	2		
5	16QAM	25	0	17.83	17.67	17.64	17.42				



Reduced Power Mode for Head

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	18.08	18.09	18.02	19.00
3GPP Rel 99	RMC 12.2Kbps	18.11	18.12	18.04	19.00
3GPP Rel 6	HSDPA Subtest-1	16.82	16.79	16.71	17.50
3GPP Rel 6	HSDPA Subtest-2	16.81	16.77	16.73	17.50
3GPP Rel 6	HSDPA Subtest-3	16.35	16.30	16.23	17.00
3GPP Rel 6	HSDPA Subtest-4	16.31	16.25	16.23	17.00
3GPP Rel 6	HSUPA Subtest-1	16.52	16.45	16.36	17.50
3GPP Rel 6	HSUPA Subtest-2	14.85	14.78	14.73	15.50
3GPP Rel 6	HSUPA Subtest-3	15.76	15.78	15.66	16.50
3GPP Rel 6	HSUPA Subtest-4	14.83	14.80	14.74	15.50
3GPP Rel 6	HSUPA Subtest-5	16.90	16.70	16.70	17.50



Band 2 (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				18700	18900	19100			
Frequency (MHz)				1860	1880	1900			
20	QPSK	1	0	18.31	18.43	18.24	19	0	
20	QPSK	1	49	18.26	18.31	18.19			
20	QPSK	1	99	18.27	18.19	18.00			
20	QPSK	50	0	18.38	18.39	18.32	19	0	
20	QPSK	50	24	18.31	18.34	18.25			
20	QPSK	50	50	18.29	18.35	18.23			
20	QPSK	100	0	18.31	18.35	18.21	19	0	
20	16QAM	1	0	18.20	18.21	18.27			
20	16QAM	1	49	18.37	18.38	18.24			
20	16QAM	1	99	18.40	18.24	18.07	19	0	
20	16QAM	50	0	18.17	18.13	18.14			
20	16QAM	50	24	18.23	18.22	18.08			
20	16QAM	50	50	18.14	18.18	18.03	19	0	
20	16QAM	100	0	18.16	18.16	18.00			
Channel				18675	18900	19125			
Frequency (MHz)				1857.5	1880	1902.5			
15	QPSK	1	0	18.30	18.28	18.16	19	0	
15	QPSK	1	37	18.23	18.29	18.20			
15	QPSK	1	74	18.21	18.15	18.01			
15	QPSK	36	0	18.35	18.36	18.20	19	0	
15	QPSK	36	20	18.38	18.42	18.31			
15	QPSK	36	39	18.31	18.35	18.24			
15	QPSK	75	0	18.32	18.35	18.23	19	0	
15	16QAM	1	0	18.21	18.32	18.22			
15	16QAM	1	37	18.30	18.38	18.25			
15	16QAM	1	74	18.28	18.26	18.09	19	0	
15	16QAM	36	0	18.22	18.17	18.06			
15	16QAM	36	20	18.17	18.23	18.08			
15	16QAM	36	39	18.13	18.15	18.01	19	0	
15	16QAM	75	0	18.30	18.15	18.04			
Channel				18650	18900	19150			
Frequency (MHz)				1855	1880	1905			
10	QPSK	1	0	18.30	18.23	18.22	19	0	
10	QPSK	1	25	18.24	18.32	18.11			
10	QPSK	1	49	18.30	18.41	18.06			
10	QPSK	25	0	18.12	18.37	18.27	19	0	
10	QPSK	25	12	18.32	18.41	18.29			
10	QPSK	25	25	18.29	18.36	18.16			
10	QPSK	50	0	18.30	18.38	18.26	19	0	
10	16QAM	1	0	18.31	18.30	18.30			
10	16QAM	1	25	18.23	18.40	18.24			
10	16QAM	1	49	18.41	18.13	18.17	19	0	
10	16QAM	25	0	18.25	18.20	18.04			
10	16QAM	25	12	18.27	18.23	18.07			
10	16QAM	25	25	18.12	18.19	17.93	19	0	
10	16QAM	50	0	18.14	18.20	18.04			
Channel				18625	18900	19175			
Frequency (MHz)				1852.5	1880	1907.5			
5	QPSK	1	0	18.24	18.35	18.12	19	0	
5	QPSK	1	12	18.17	18.37	18.14			
5	QPSK	1	24	18.35	18.31	18.09			
5	QPSK	12	0	18.31	18.39	18.14	19	0	
5	QPSK	12	7	18.32	18.39	18.18			
5	QPSK	12	13	18.31	18.38	18.16			
5	QPSK	25	0	18.40	18.33	18.14	19	0	
5	16QAM	1	0	18.22	18.39	18.18			
5	16QAM	1	12	18.36	18.29	18.20			
5	16QAM	1	24	18.43	18.37	18.14	19	0	
5	16QAM	12	0	18.24	18.22	17.98			
5	16QAM	12	7	18.25	18.20	18.00			
5	16QAM	12	13	18.24	18.20	17.93	19	0	
5	16QAM	25	0	18.23	18.15	17.97			
Channel				18615	18900	19185			
Frequency (MHz)				1851.5	1880	1908.5			
3	QPSK	1	0	18.37	18.31	18.07	19	0	
3	QPSK	1	8	18.26	18.32	18.10			
3	QPSK	1	14	18.38	18.33	18.06			
3	QPSK	8	0	18.42	18.35	18.11	19	0	
3	QPSK	8	4	18.29	18.41	18.15			
3	QPSK	8	7	18.42	18.39	18.12			
3	QPSK	15	0	18.38	18.36	18.13	19	0	
3	16QAM	1	0	18.42	18.35	18.19			
3	16QAM	1	8	18.22	18.43	18.15			
3	16QAM	1	14	18.21	18.39	18.06	19	0	
3	16QAM	8	0	18.29	18.22	18.01			
3	16QAM	8	4	18.32	18.23	18.01			
3	16QAM	8	7	18.31	18.22	17.96	19	0	
3	16QAM	15	0	18.24	18.16	17.93			
Channel				18607	18900	19193			
Frequency (MHz)				1850.7	1880	1909.3			
1.4	QPSK	1	0	18.32	18.26	18.09	19	0	
1.4	QPSK	1	3	18.19	18.34	18.09			
1.4	QPSK	1	5	18.31	18.35	18.01			
1.4	QPSK	3	0	18.39	18.39	18.08	19	0	
1.4	QPSK	3	1	18.39	18.30	18.06			
1.4	QPSK	3	3	18.41	18.30	18.14			
1.4	QPSK	6	0	18.40	18.24	18.05	19	0	
1.4	16QAM	1	0	18.36	18.23	18.32			
1.4	16QAM	1	3	18.26	18.28	18.07			
1.4	16QAM	1	5	18.21	18.29	18.03	19	0	
1.4	16QAM	3	0	18.30	17.96	17.81			
1.4	16QAM	3	1	18.26	18.21	17.88			
1.4	16QAM	3	3	18.25	18.12	17.70	19	0	
1.4	16QAM	6	0	18.21	18.14	17.75			

Band 4 (AWS Band) Part 27L (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				20050	20175	20300			
Frequency (MHz)				1720	1732.5	1745			
20	QPSK	1	0	18.55	18.64	18.61	19.5	0	
20	QPSK	1	49	18.53	18.45	18.54			
20	QPSK	1	99	18.41	18.46	18.41			
20	QPSK	50	0	18.59	18.61	18.57	19.5	0	
20	QPSK	50	24	18.51	18.39	18.53			
20	QPSK	50	50	18.54	18.54	18.50			
20	QPSK	100	0	18.45	18.53	18.41	19.5	0	
20	16QAM	1	0	18.33	18.15	18.17			
20	16QAM	1	49	18.21	18.46	18.47			
20	16QAM	1	99	18.33	18.26	18.15	19.5	0	
20	16QAM	50	0	18.18	18.33	18.19			
20	16QAM	50	24	18.23	18.23	18.26			
20	16QAM	50	50	18.26	18.10	18.20	19.5	0	
20	16QAM	100	0	18.26	18.21	18.21			
Channel				20025	20175	20325			
Frequency (MHz)				1717.5	1732.5	1747.5			
15	QPSK	1	0	18.50	18.57	18.39	19.5	0	
15	QPSK	1	37	18.61	18.53	18.55			
15	QPSK	1	74	18.51	18.47	18.57			
15	QPSK	36	0	18.58	18.39	18.56	19.5	0	
15	QPSK	36	20	18.59	18.60	18.62			
15	QPSK	36	39	18.43	18.52	18.41			
15	QPSK	75	0	18.41	18.62	18.60	19.5	0	
15	16QAM	1	0	18.36	18.22	18.51			
15	16QAM	1	37	18.57	18.18	18.22			
15	16QAM	1	74	18.21	18.41	18.15	19.5	0	
15	16QAM	36	0	18.31	18.24	18.21			
15	16QAM	36	20	18.26	18.24	18.33			
15	16QAM	36	39	18.20	18.24	18.23	19.5	0	
15	16QAM	75	0	18.18	18.20	18.19			
Channel				20000	20175	20350			
Frequency (MHz)				1715	1732.5	1750			
10	QPSK	1	0	18.56	18.61	18.61	19.5	0	
10	QPSK	1	25	18.57	18.39	18.42			
10	QPSK	1	49	18.56	18.51	18.57			
10	QPSK	25	0	18.39	18.41	18.39	19.5	0	
10	QPSK	25	12	18.60	18.61	18.61			
10	QPSK	25	25	18.60	18.57	18.61			
10	QPSK	50	0	18.60	18.60	18.39	19.5	0	
10	16QAM	1	0	18.50	18.48	18.47			
10	16QAM	1	25	18.40	18.49	18.46			
10	16QAM	1	49	18.40	18.37	18.50	19.5	0	
10	16QAM	25	0	18.22	18.25	18.20			
10	16QAM	25	12	18.27	18.24	18.27			
10	16QAM	25	25	18.17	18.18	18.28	19.5	0	
10	16QAM	50	0	18.20	18.21	18.24			
Channel				19975	20175	20375			
Frequency (MHz)				1712.5	1732.5	1752.5			
5	QPSK	1	0	18.54	18.56	18.41	19.5	0	
5	QPSK	1	12	18.55	18.58	18.61			
5	QPSK	1	24	18.53	18.54	18.56			
5	QPSK	12	0	18.60	18.39	18.41	19.5	0	



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				20850	21100	21350	16.5	0
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	15.96	16.01	15.97	16.5	0
20	QPSK	1	49	15.95	15.96	15.93		
20	QPSK	1	99	15.91	15.93	15.92		
20	QPSK	50	0	15.92	15.97	15.86	16.5	0
20	QPSK	50	24	15.79	15.73	15.80		
20	QPSK	50	50	15.89	15.73	15.83		
20	QPSK	100	0	15.79	15.81	15.78	16.5	0
20	16QAM	1	0	15.84	15.83	15.91		
20	16QAM	1	49	15.88	15.91	15.95		
20	16QAM	1	99	15.85	15.87	15.88	16.5	0
20	16QAM	50	0	15.61	15.55	15.74		
20	16QAM	50	24	15.67	15.68	15.82		
20	16QAM	50	50	15.63	15.72	15.75	16.5	0
20	16QAM	100	0	15.61	15.63	15.76		
Channel				20825	21100	21375		
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	15.86	15.84	15.92	16.5	0
15	QPSK	1	37	15.81	15.77	15.89		
15	QPSK	1	74	15.92	15.90	15.77		
15	QPSK	36	0	15.84	15.79	15.68	16.5	0
15	QPSK	36	20	15.84	15.87	15.74		
15	QPSK	36	39	15.88	15.88	15.77		
15	QPSK	75	0	15.84	15.84	15.83	16.5	0
15	16QAM	1	0	15.76	15.70	15.87		
15	16QAM	1	37	15.65	15.76	15.78		
15	16QAM	1	74	15.83	15.93	15.74	16.5	0
15	16QAM	36	0	15.44	15.44	15.59		
15	16QAM	36	20	15.53	15.51	15.60		
15	16QAM	36	39	15.53	15.59	15.61	16.5	0
15	16QAM	75	0	15.46	15.47	15.70		
Channel				20800	21100	21400		
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	15.84	15.71	15.83	16.5	0
10	QPSK	1	25	15.86	15.79	15.93		
10	QPSK	1	49	15.84	15.85	15.74		
10	QPSK	25	0	15.89	15.76	15.92	16.5	0
10	QPSK	25	12	15.80	15.81	15.68		
10	QPSK	25	25	15.79	15.85	15.68		
10	QPSK	50	0	15.83	15.77	15.93	16.5	0
10	16QAM	1	0	15.73	15.58	15.78		
10	16QAM	1	25	15.80	15.74	15.84		
10	16QAM	1	49	15.80	15.82	15.74	16.5	0
10	16QAM	25	0	15.49	15.43	15.53		
10	16QAM	25	12	15.49	15.48	15.59		
10	16QAM	25	25	15.50	15.48	15.63	16.5	0
10	16QAM	50	0	15.46	15.46	15.56		
Channel				20775	21100	21425		
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	15.82	15.70	15.86	16.5	0
5	QPSK	1	12	15.84	15.74	15.92		
5	QPSK	1	24	15.87	15.79	15.78		
5	QPSK	12	0	15.90	15.81	15.91	16.5	0
5	QPSK	12	7	15.91	15.84	15.77		
5	QPSK	12	13	15.78	15.83	15.77		
5	QPSK	25	0	15.88	15.77	15.68	16.5	0
5	16QAM	1	0	15.78	15.63	15.79		
5	16QAM	1	12	15.78	15.69	15.81		
5	16QAM	1	24	15.78	15.74	15.90	16.5	0
5	16QAM	12	0	15.50	15.41	15.58		
5	16QAM	12	7	15.58	15.53	15.67		
5	16QAM	12	13	15.54	15.49	15.66	16.5	0
5	16QAM	25	0	15.55	15.49	15.63		



Band 42 (3.5GHz 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				43190	43340	43490		
Frequency (MHz)				3560	3575	3590		
20	QPSK	1	0	16.96	16.80	16.80	17.5	0
20	QPSK	1	49	16.67	16.61	16.48		
20	QPSK	1	99	16.52	16.54	16.44		
20	QPSK	50	0	16.80	16.75	16.75	17.5	0
20	QPSK	50	24	16.77	16.69	16.70		
20	QPSK	50	50	16.66	16.64	16.53		
20	QPSK	100	0	16.78	16.72	16.69	17.5	0
20	16QAM	1	0	16.74	16.73	16.70		
20	16QAM	1	49	16.58	16.51	16.43		
20	16QAM	1	99	16.42	16.44	16.31	17.5	0
20	16QAM	50	0	16.64	16.62	16.62		
20	16QAM	50	24	16.62	16.56	16.58		
20	16QAM	50	50	16.52	16.46	16.41	17.5	0
20	16QAM	100	0	16.62	16.55	16.57		
Channel				43165	43340	43515		
Frequency (MHz)				3557.5	3575	3592.5		
Frequency (MHz)				3557.5	3575	3592.5		
15	QPSK	1	0	16.79	16.78	16.76	17.5	0
15	QPSK	1	37	16.66	16.61	16.51		
15	QPSK	1	74	16.56	16.59	16.50		
15	QPSK	36	0	16.79	16.73	16.73	17.5	0
15	QPSK	36	20	16.74	16.70	16.57		
15	QPSK	36	39	16.67	16.62	16.49		
15	QPSK	75	0	16.74	16.66	16.69	17.5	0
15	16QAM	1	0	16.73	16.68	16.69		
15	16QAM	1	37	16.56	16.52	16.44		
15	16QAM	1	74	16.48	16.50	16.39	17.5	0
15	16QAM	36	0	16.61	16.56	16.54		
15	16QAM	36	20	16.55	16.49	16.41		
15	16QAM	36	39	16.49	16.45	16.32	17.5	0
15	16QAM	75	0	16.62	16.54	16.57		
Channel				43140	43340	43540		
Frequency (MHz)				3555	3575	3595		
Frequency (MHz)				3555	3575	3595		
10	QPSK	1	0	16.75	16.71	16.61	17.5	0
10	QPSK	1	25	16.64	16.57	16.47		
10	QPSK	1	49	16.65	16.61	16.49		
10	QPSK	25	0	16.73	16.67	16.58	17.5	0
10	QPSK	25	12	16.70	16.68	16.56		
10	QPSK	25	25	16.67	16.61	16.50		
10	QPSK	50	0	16.72	16.66	16.57	17.5	0
10	16QAM	1	0	16.69	16.64	16.54		
10	16QAM	1	25	16.54	16.51	16.38		
10	16QAM	1	49	16.50	16.47	16.37	17.5	0
10	16QAM	25	0	16.58	16.58	16.47		
10	16QAM	25	12	16.57	16.52	16.44		
10	16QAM	25	25	16.53	16.48	16.38	17.5	0
10	16QAM	50	0	16.57	16.52	16.44		
Channel				43115	43340	43565		
Frequency (MHz)				3552.5	3575	3597.5		
Frequency (MHz)				3552.5	3575	3597.5		
5	QPSK	1	0	16.69	16.64	16.51	17.5	0
5	QPSK	1	12	16.63	16.59	16.49		
5	QPSK	1	24	16.59	16.54	16.41		
5	QPSK	12	0	16.70	16.62	16.57	17.5	0
5	QPSK	12	7	16.66	16.64	16.56		
5	QPSK	12	13	16.65	16.59	16.50		
5	QPSK	25	0	16.67	16.64	16.52	17.5	0
5	16QAM	1	0	16.60	16.54	16.47		
5	16QAM	1	12	16.55	16.50	16.42		
5	16QAM	1	24	16.55	16.50	16.40	17.5	0
5	16QAM	12	0	16.51	16.45	16.40		
5	16QAM	12	7	16.50	16.48	16.38		
5	16QAM	12	13	16.48	16.45	16.35	17.5	0
5	16QAM	12	13	16.48	16.45	16.35		
5	16QAM	25	0	16.54	16.54	16.44		

Band 43 (3.7GHz Band) for FCC use

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				43690	44090	44490		
Frequency (MHz)				3610	3650	3690		
20	QPSK	1	0	16.85	16.96	16.94	17.5	0
20	QPSK	1	49	16.62	16.73	16.73		
20	QPSK	1	99	16.57	16.56	16.64		
20	QPSK	50	0	16.81	16.87	16.89	17.5	0
20	QPSK	50	24	16.73	16.69	16.82		
20	QPSK	50	50	16.67	16.63	16.73		
20	QPSK	100	0	16.73	16.80	16.65	17.5	0
20	16QAM	1	0	16.80	16.85	16.89		
20	16QAM	1	49	16.60	16.67	16.70		
20	16QAM	1	99	16.48	16.46	16.57	17.5	0
20	16QAM	50	0	16.74	16.78	16.81		
20	16QAM	50	24	16.62	16.61	16.73		
20	16QAM	50	50	16.55	16.50	16.65	17.5	0
20	16QAM	100	0	16.63	16.60	16.65		
Channel				43665	44090	44515		
Frequency (MHz)				3607.5	3650	3692.5		
Frequency (MHz)				3607.5	3650	3692.5		
15	QPSK	1	0	16.84	16.92	16.94	17.5	0
15	QPSK	1	37	16.62	16.71	16.73		
15	QPSK	1	74	16.64	16.58	16.73		
15	QPSK	36	0	16.74	16.83	16.86	17.5	0
15	QPSK	36	20	16.68	16.69	16.81		
15	QPSK	36	39	16.65	16.62	16.73		
15	QPSK	75	0	16.72	16.67	16.81	17.5	0
15	16QAM	1	0	16.76	16.82	16.88		
15	16QAM	1	37	16.59	16.66	16.65		
15	16QAM	1	74	16.54	16.54	16.64	17.5	0
15	16QAM	36	0	16.61	16.69	16.70		
15	16QAM	36	20	16.57	16.54	16.65		
15	16QAM	36	39	16.48	16.50	16.60	17.5	0
15	16QAM	75	0	16.59	16.62	16.72		
Channel				43640	44090	44540		
Frequency (MHz)				3605	3650	3695		
Frequency (MHz)				3605	3650	3695		
10	QPSK	1	0	16.72	16.81	16.84	17.5	0
10	QPSK	1	25	16.56	16.66	16.68		
10	QPSK	1	49	16.58	16.59	16.71		
10	QPSK	25	0	16.71	16.76	16.79	17.5	0
10	QPSK	25	12	16.66	16.64	16.78		
10	QPSK	25	25	16.58	16.59	16.72		
10	QPSK	50	0	16.65	16.63	16.76	17.5	0
10	16QAM	1	0	16.68	16.75	16.82		
10	16QAM	1	25	16.51	16.62	16.62		
10	16QAM	1	49	16.48	16.50	16.64	17.5	0
10	16QAM	25	0	16.60	16.66	16.71		
10	16QAM	25	12	16.57	16.57	16.69		
10	16QAM	25	25	16.51	16.49	16.64	17.5	0
10	16QAM	50	0	16.56	16.56	16.70		
Channel				43615	44090	44565		
Frequency (MHz)				3602.5	3650	3697.5		
Frequency (MHz)				3602.5	3650	3697.5		
5	QPSK	1	0	16.62	16.70	16.79	17.5	0
5	QPSK	1	12	16.56	16.64	16.67		
5	QPSK	1	24	16.52	16.52	16.64		
5	QPSK	12	0	16.63	16.72	16.76	17.5	0
5	QPSK	12	7	16.61	16.61	16.74		
5	QPSK	12	13	16.60	16.57	16.72		
5	QPSK	25	0	16.59	16.59	16.70	17.5	0
5	16QAM	1	0	16.53	16.65	16.71		
5	16QAM	1	12	16.49	16.59	16.64		
5	16QAM	1	24	16.50	16.50	16.63	17.5	0
5	16QAM	12	0	16.47	16.56	16.63		
5	16QAM	12	7	16.48	16.46	16.60		
5	16QAM	12	13	16.45	16.47	16.57	17.5	0
5	16QAM	12	13	16.45	16.47	16.57		
5	16QAM	25	0	16.49	16.51	16.64		



Band 48 (3.5G Band)

Channel	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)			
Channel									
55340 55830 56150 56640									
Frequency (MHz)									
20	QPSK	1	0	17.13	17.03	17.06	17.05	17.5	0
20	QPSK	1	49	17.10	17.01	17.03	17.03		
20	QPSK	1	99	17.07	16.94	16.98	16.99		
20	QPSK	50	0	17.10	17.02	17.05	17.04		
20	QPSK	50	24	17.03	16.93	17.02	17.01	17.5	0
20	QPSK	50	50	17.02	16.94	16.98	16.99		
20	QPSK	100	0	17.09	16.92	17.02	17.03		
20	16QAM	1	0	17.08	16.89	17.00	16.99		
20	16QAM	1	49	17.03	16.80	16.99	16.98	17.5	0
20	16QAM	1	99	17.06	16.91	17.07	17.09		
20	16QAM	50	0	17.06	16.81	16.99	17.00		
20	16QAM	50	24	17.07	16.85	17.01	17.04		
20	16QAM	50	50	17.09	16.88	17.06	17.05	17.5	0
20	16QAM	100	0	17.09	16.86	17.06	17.04		
Channel									
55315 55820 56160 56665									
Frequency (MHz)									
15	QPSK	1	0	17.09	16.77	16.92	16.83	17.5	0
15	QPSK	1	37	16.94	16.65	16.86	17.00		
15	QPSK	1	74	16.87	16.80	16.82	16.87		
15	QPSK	36	0	16.81	16.71	16.98	17.07		
15	QPSK	36	20	17.12	16.86	16.97	17.09	17.5	0
15	QPSK	36	39	16.98	16.81	17.03	16.98		
15	QPSK	75	0	16.89	16.70	16.91	16.87		
15	16QAM	1	0	16.99	16.62	16.95	16.78		
15	16QAM	1	37	16.98	16.78	16.90	16.83	17.5	0
15	16QAM	1	74	17.05	16.65	16.85	16.92		
15	16QAM	36	0	16.93	16.75	16.74	16.89		
15	16QAM	36	20	16.97	16.66	16.86	16.76		
15	16QAM	36	39	16.90	16.69	16.94	17.03	17.5	0
15	16QAM	75	0	17.01	16.66	16.95	16.93		
Channel									
55290 55815 56165 56690									
Frequency (MHz)									
10	QPSK	1	0	16.87	16.73	16.93	17.02	17.5	0
10	QPSK	1	25	17.01	16.88	16.76	16.77		
10	QPSK	1	49	16.99	16.78	16.81	17.03		
10	QPSK	25	0	16.87	16.78	16.93	16.80		
10	QPSK	25	12	16.86	16.73	16.80	17.07	17.5	0
10	QPSK	25	25	17.11	16.70	16.95	17.07		
10	QPSK	50	0	17.11	16.72	16.91	16.85		
10	16QAM	1	0	17.04	16.70	16.90	16.73		
10	16QAM	1	25	16.87	16.58	16.95	16.96	17.5	0
10	16QAM	1	49	16.89	16.68	16.99	16.90		
10	16QAM	25	0	16.79	16.55	16.76	16.74		
10	16QAM	25	12	16.95	16.62	16.81	16.84		
10	16QAM	25	25	17.04	16.80	16.77	17.03	17.5	0
10	16QAM	50	0	16.99	16.58	16.87	16.78		
Channel									
55265 55810 56170 56715									
Frequency (MHz)									
5	QPSK	1	0	16.96	16.70	16.99	16.90	17.5	0
5	QPSK	1	12	17.09	16.68	16.98	16.82		
5	QPSK	1	24	16.94	16.84	16.88	17.08		
5	QPSK	12	0	16.92	16.61	16.95	16.92		
5	QPSK	12	7	17.12	16.89	17.05	17.03	17.5	0
5	QPSK	12	13	17.06	16.78	17.02	16.94		
5	QPSK	25	0	16.87	16.75	16.83	16.95		
5	16QAM	1	0	17.06	16.87	16.98	16.82		
5	16QAM	1	12	16.87	16.62	16.85	16.87	17.5	0
5	16QAM	1	24	16.77	16.67	17.06	16.84		
5	16QAM	12	0	16.89	16.53	16.83	16.99		
5	16QAM	12	7	17.06	16.65	16.90	17.02		
5	16QAM	12	13	16.94	16.59	17.03	17.02	17.5	0
5	16QAM	25	0	16.85	16.57	16.93	16.88		



CA DL Full power

Configure		CA List	PCC								SCC				Power	
			LTE	BW	UL	UL	UL#	UL	LTE	BW	DL	DL	With CA	Without CA		
			Band	(MHz)	Freq. (MHz)	Channel	Mod.	RB	RB Offset	Band	(MHz)	Freq. (MHz)	Channel	Tx. Power (dBm)	Tx. Power (dBm)	
Intra-Band	Contiguous	CA_42C	Band 42	20M	3560	43100	QPSK	-1	0	Band 42	20M	3579.8	43388	19.81	19.85	
		CA_43C	Band 43	20M	3650	44090	QPSK	-1	0	Band 43	20M	3669.8	44288	19.79	19.80	
		CA_48C	Band 48	20M	3560	55340	QPSK	-1	0	Band 48	20M	3579.8	55538	19.86	19.91	



CA DL Reduced Power Mode for Head

Configure		CA List	PCC								SCC				Power	
			LTE	BW	UL	UL	UL#	UL	LTE	BW	DL	DL	With CA	Without CA		
			Band	(MHz)	Freq. (MHz)	Channel	Mod.	RB	RB Offset	Band	(MHz)	Freq. (MHz)	Channel	Tx. Power (dBm)	Tx. Power (dBm)	
Intra-Band	Contiguous	CA_42C	Band 42	20M	3660	43100	QPSK	-1	0	Band 42	20M	3579.8	43388	17.24	17.38	
		CA_43C	Band 43	20M	3650	44090	QPSK	-1	0	Band 43	20M	3669.8	44288	17.38	17.43	
		CA_48C	Band 48	20M	3660	55340	QPSK	-1	0	Band 48	20M	3579.8	55538	17.41	17.49	



2.4GHz WLAN		Ant 1				
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
2.4GHz WLAN	802.11b 1Mbps	1	2412	17.38	18.00	100.00
		6	2437	17.19	18.00	
		11	2462	17.35	18.00	
	802.11g 6Mbps	1	2412	13.54	14.50	98.28
		6	2437	13.69	14.50	
		11	2462	13.71	14.50	
	802.11n-HT20 MCS0	1	2412	11.69	12.50	98.16
		6	2437	11.53	12.50	
		11	2462	11.62	12.50	
802.11n-HT40 MCS0	3	2422	10.55	11.50	94.93	
	6	2437	10.60	11.50		
	9	2452	10.75	11.50		

5GHz WLAN		Ant 1				
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.2GHz WLAN	802.11a 6Mbps	36	5180	13.33	14.00	97.93
		40	5200	13.35	14.00	
		44	5220	13.28	14.00	
		48	5240	13.38	14.00	
	802.11n-HT20 MCS0	36	5180	12.35	13.00	98.52
		40	5200	12.25	13.00	
		44	5220	12.24	13.00	
		48	5240	12.27	13.00	
	802.11n-HT40 MCS0	38	5190	10.91	11.50	96.32
		46	5230	10.88	11.50	

5GHz WLAN		Ant 1				
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.3GHz WLAN	802.11a 6Mbps	52	5260	13.40	14.00	97.93
		56	5280	13.37	14.00	
		60	5300	13.27	14.00	
		64	5320	13.12	14.00	
	802.11n-HT20 MCS0	52	5260	12.38	13.00	98.52
		56	5280	12.28	13.00	
		60	5300	12.22	13.00	
		64	5320	12.33	13.00	
	802.11n-HT40 MCS0	54	5270	10.74	11.50	96.32
		62	5310	10.81	11.50	

5GHz WLAN		Ant 1				
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.5GHz WLAN	802.11a 6Mbps	100	5500	13.67	14.00	97.93
		116	5580	13.68	14.00	
		124	5620	13.74	14.00	
		132	5660	13.45	14.00	
		140	5700	13.58	14.00	
		144	5720	13.47	14.00	
	802.11n-HT20 MCS0	100	5500	12.37	13.00	98.52
		116	5580	12.38	13.00	
		124	5620	12.64	13.00	
		132	5660	12.39	13.00	
		140	5700	12.35	13.00	
		144	5720	12.44	13.00	
	802.11n-HT40 MCS0	102	5510	10.92	11.50	96.32
		110	5550	11.01	11.50	
		126	5630	11.07	11.50	
		134	5670	10.98	11.50	
		142	5710	10.71	11.50	

5GHz WLAN		Ant 1				
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.8GHz WLAN	802.11a 6Mbps	149	5745	12.24	13.00	97.93
		157	5785	12.23	13.00	
		165	5825	12.21	13.00	
	802.11n-HT20 MCS0	149	5745	12.20	13.00	98.52
		157	5785	12.27	13.00	
		165	5825	12.35	13.00	
	802.11n-HT40 MCS0	151	5755	10.48	11.50	96.32
		159	5795	10.81	11.50	

BT BR / EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	16.74	12.08	12.14
	CH 39	2441	15.79	11.07	11.27
	CH 78	2480	16.12	11.49	11.46
Tune-up Limit			17.5	13	13

BT LE

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	4.45
	CH 19	2440	4.53
	CH 39	2480	4.61
Tune-up Limit			5

BT 5.0

Mode	Channel	Frequency (MHz)	Average power (dBm)
			1Mbps
LE	CH 00	2402	4.40
	CH 19	2440	4.76
	CH 39	2480	4.60
Tune-up Limit			5