

APPENDIX E – PROBE CALIBRATION



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 **Celltech**

Certificate No: **EX3-3600_Apr17/2**

CALIBRATION CERTIFICATE (Replacement of No: EX3-3600_Apr17)

Object **EX3DV4 - SN:3600**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5,
QA CAL-25.v6
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 27, 2017**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02525)	Apr-18
Reference 20 dB Attenuator	SN: S5277 (20x)	07-Apr-17 (No. 217-02528)	Apr-18
Reference Probe ES3DV2	SN: 3013	31-Dec-16 (No. ES3-3013_Dec16)	Dec-17
DAE4	SN: 660	7-Dec-16 (No. DAE4-660_Dec16)	Dec-17
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-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Issued: October 12, 2017

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



Accredited by the Swiss Accreditation Service (SAS)

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

Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
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, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- 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 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).

Probe EX3DV4

SN:3600

Manufactured: January 10, 2007
Calibrated: April 27, 2017

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3600

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.51	0.49	0.38	$\pm 10.1 \%$
DCP (mV) ^B	98.2	96.9	98.6	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	128.6	$\pm 3.3 \%$
		Y	0.0	0.0	1.0		128.2	
		Z	0.0	0.0	1.0		146.4	

Note: For details on UID parameters see Appendix.

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	49.47	372.4	36.05	22.00	0.168	5.100	0.000	0.570	1.008
Y	54.90	416.1	36.34	21.28	0.857	5.095	0.049	0.644	1.010
Z	48.84	366.8	35.84	23.15	0.560	5.100	0.322	0.525	1.008

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 Pages 5 and 6).

^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:3600

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)
150	52.3	0.76	9.58	9.58	9.58	0.00	1.00	± 13.3 %
450	43.5	0.87	9.49	9.49	9.49	0.15	1.20	± 13.3 %
835	41.5	0.90	8.39	8.39	8.39	0.54	0.80	± 12.0 %
900	41.5	0.97	8.25	8.25	8.25	0.47	0.80	± 12.0 %
1640	40.2	1.31	7.34	7.34	7.34	0.29	0.80	± 12.0 %
1810	40.0	1.40	7.08	7.08	7.08	0.31	0.86	± 12.0 %
2450	39.2	1.80	6.44	6.44	6.44	0.31	0.84	± 12.0 %
5250	35.9	4.71	4.55	4.55	4.55	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.25	4.25	4.25	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.31	4.31	4.31	0.40	1.80	± 13.1 %

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3600

Calibration Parameter Determined in Body Tissue Simulating Media

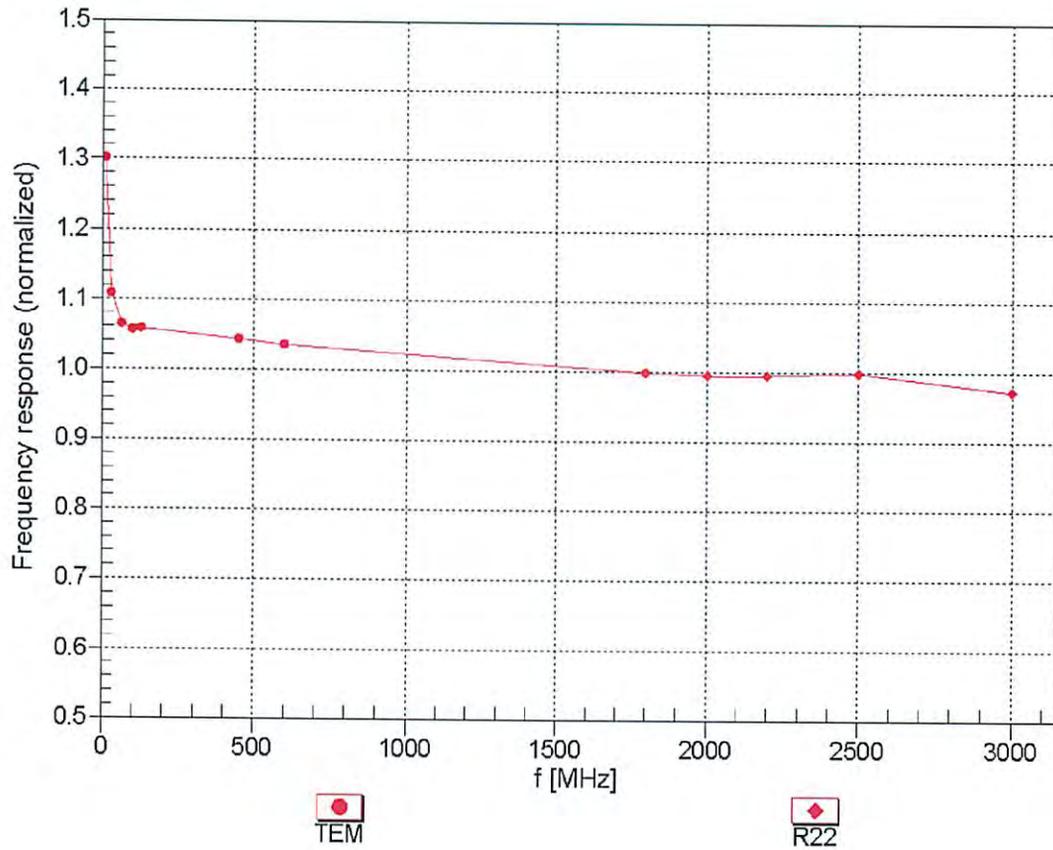
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
150	61.9	0.80	9.25	9.25	9.25	0.00	1.00	± 13.3 %
450	56.7	0.94	9.22	9.22	9.22	0.08	1.20	± 13.3 %
835	55.2	0.97	8.22	8.22	8.22	0.49	0.80	± 12.0 %
900	55.0	1.05	8.13	8.13	8.13	0.45	0.80	± 12.0 %
1640	53.7	1.42	7.33	7.33	7.33	0.33	0.95	± 12.0 %
1810	53.3	1.52	6.83	6.83	6.83	0.45	0.80	± 12.0 %
2450	52.7	1.95	6.56	6.56	6.56	0.31	0.93	± 12.0 %
5250	48.9	5.36	4.18	4.18	4.18	0.40	1.90	± 13.1 %
5600	48.5	5.77	3.55	3.55	3.55	0.45	1.90	± 13.1 %
5750	48.3	5.94	3.72	3.72	3.72	0.50	1.90	± 13.1 %

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

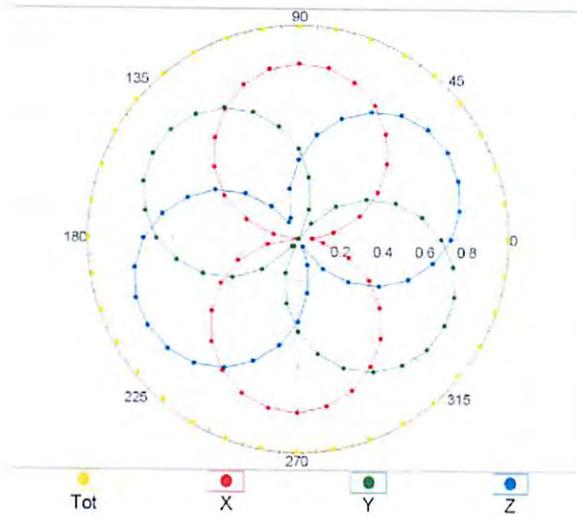
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



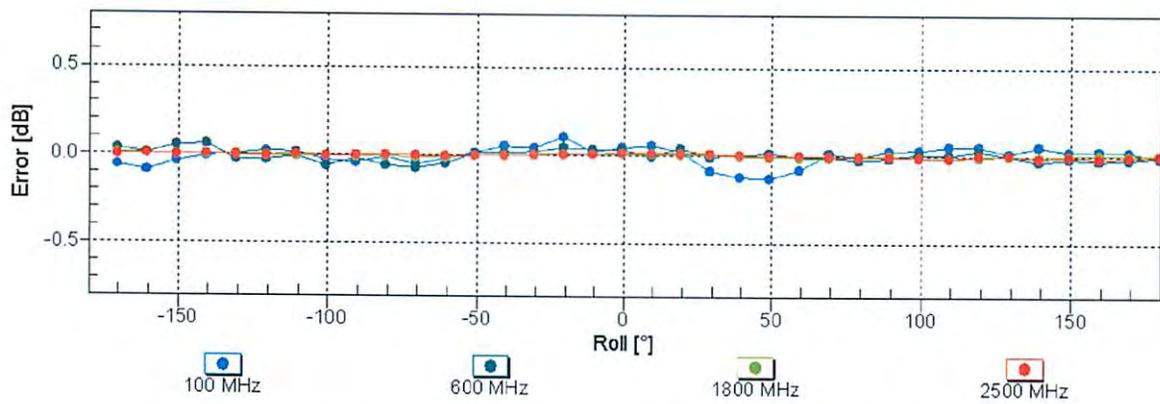
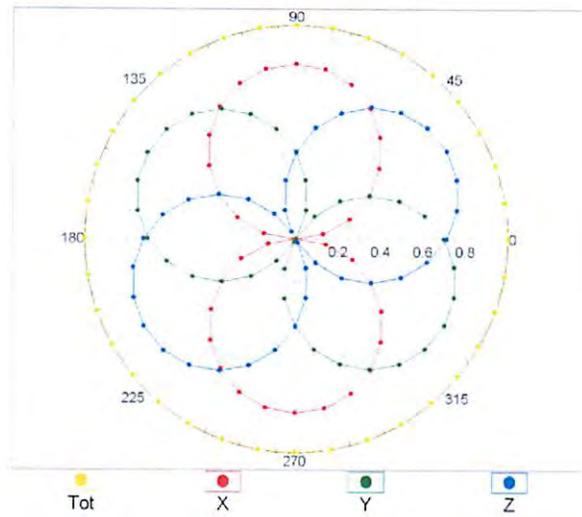
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

f=600 MHz, TEM

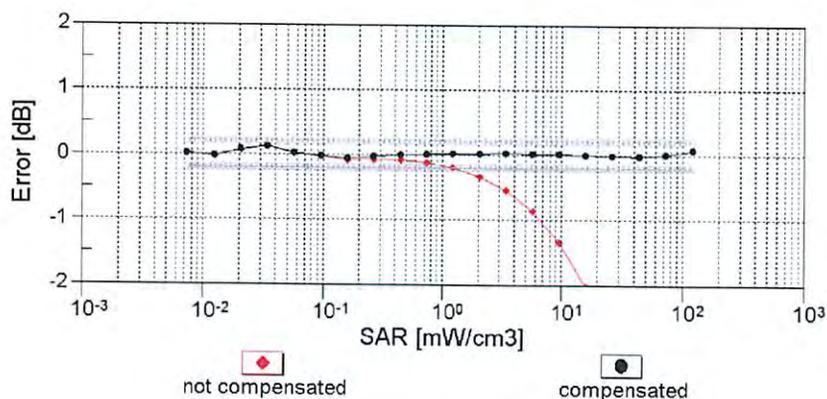
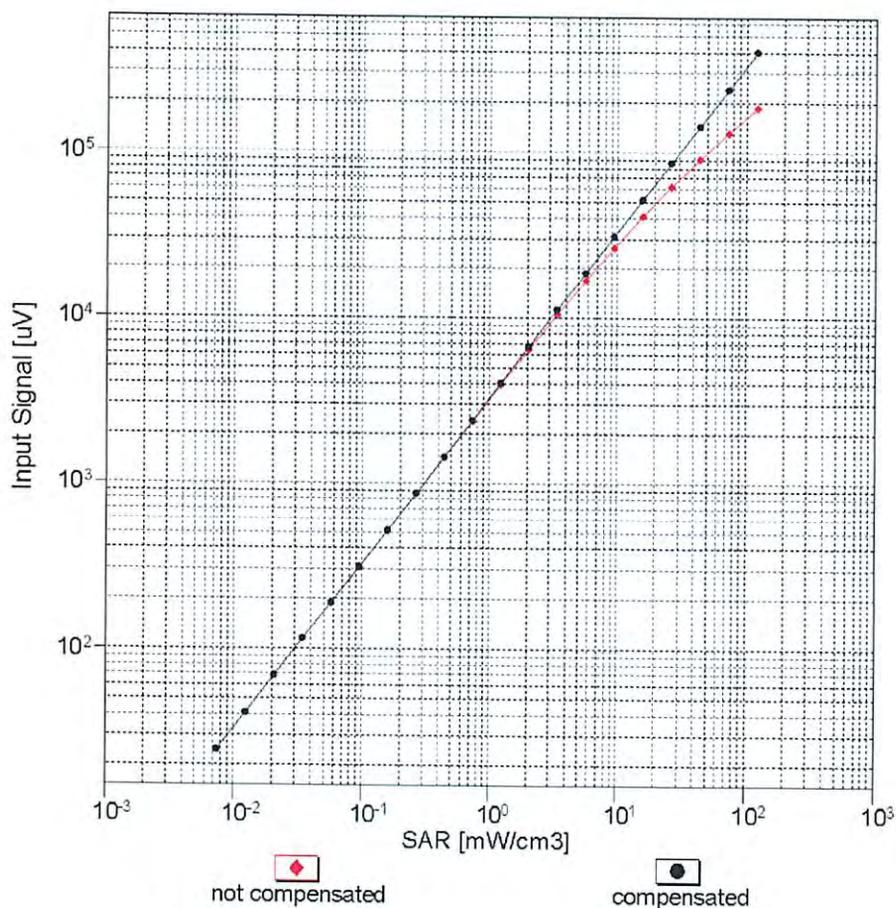


f=1800 MHz, R22



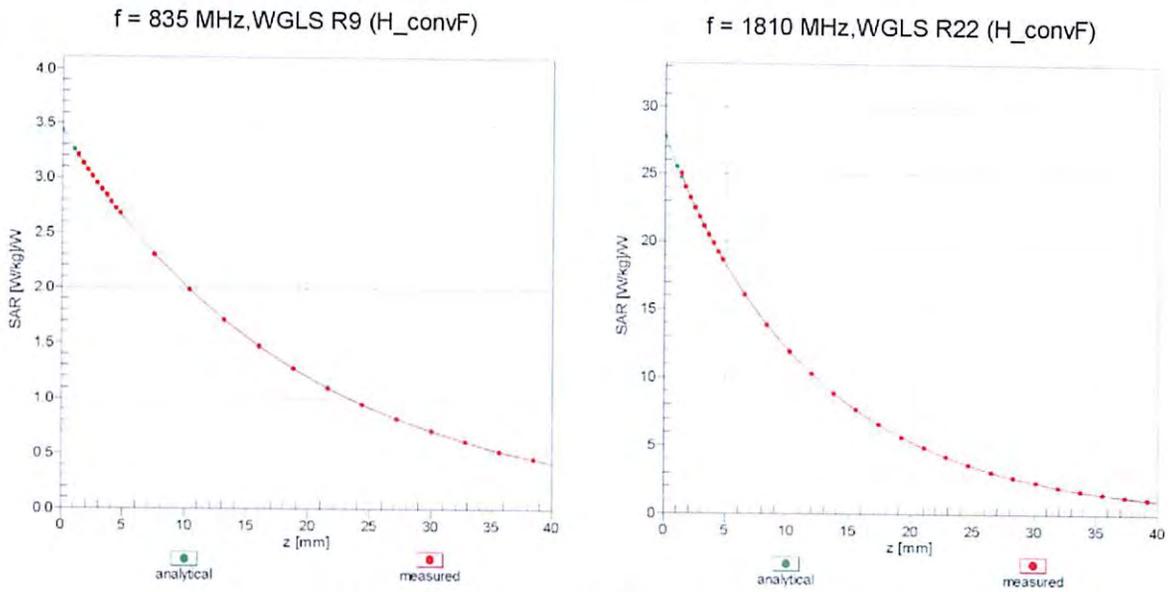
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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

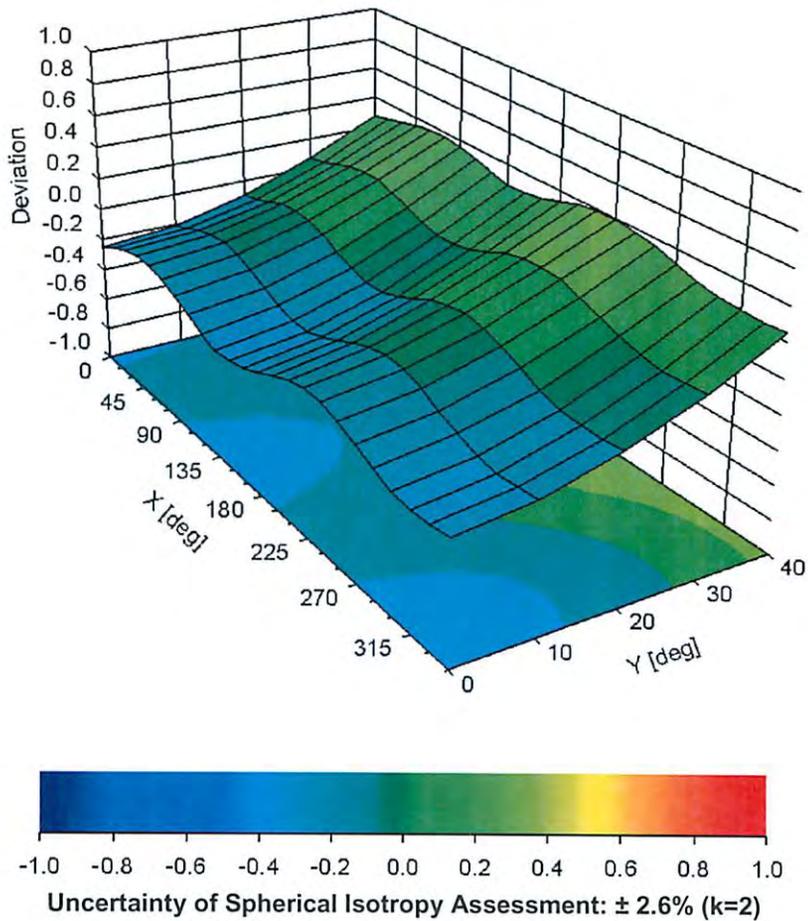


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



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



DASY/EASY - Parameters of Probe: EX3DV4 - SN:3600

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	69.2
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

Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu V}$	C	D dB	VR mV	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	128.6	$\pm 3.3\%$
		Y	0.00	0.00	1.00		128.2	
		Z	0.00	0.00	1.00		146.4	
10010- CAA	SAR Validation (Square, 100ms, 10ms)	X	4.34	73.25	13.43	10.00	20.0	$\pm 9.6\%$
		Y	6.79	78.69	16.76		20.0	
		Z	10.12	82.86	17.73		20.0	
10011- CAB	UMTS-FDD (WCDMA)	X	0.98	66.15	14.48	0.00	150.0	$\pm 9.6\%$
		Y	0.89	63.71	12.76		150.0	
		Z	0.93	64.83	13.60		150.0	
10012- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.19	63.82	15.12	0.41	150.0	$\pm 9.6\%$
		Y	1.16	62.58	13.99		150.0	
		Z	1.19	63.36	14.64		150.0	
10013- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	4.92	66.70	17.15	1.46	150.0	$\pm 9.6\%$
		Y	4.96	66.40	16.87		150.0	
		Z	4.93	66.65	17.05		150.0	
10021- DAC	GSM-FDD (TDMA, GMSK)	X	100.00	115.56	27.91	9.39	50.0	$\pm 9.6\%$
		Y	100.00	119.60	30.60		50.0	
		Z	100.00	118.33	29.81		50.0	
10023- DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	100.00	115.20	27.77	9.57	50.0	$\pm 9.6\%$
		Y	100.00	119.42	30.56		50.0	
		Z	100.00	118.06	29.73		50.0	
10024- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	100.00	114.21	26.60	6.56	60.0	$\pm 9.6\%$
		Y	100.00	116.79	28.33		60.0	
		Z	100.00	116.13	27.94		60.0	
10025- DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	9.92	101.04	41.89	12.57	50.0	$\pm 9.6\%$
		Y	4.05	66.92	23.91		50.0	
		Z	6.25	81.89	32.38		50.0	
10026- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	21.43	115.06	41.26	9.56	60.0	$\pm 9.6\%$
		Y	10.93	93.58	32.84		60.0	
		Z	16.09	104.92	37.31		60.0	
10027- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	114.76	26.24	4.80	80.0	$\pm 9.6\%$
		Y	100.00	115.97	27.21		80.0	
		Z	100.00	116.00	27.19		80.0	
10028- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	116.29	26.31	3.55	100.0	$\pm 9.6\%$
		Y	100.00	116.00	26.54		100.0	
		Z	100.00	116.87	26.93		100.0	
10029- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	9.51	93.33	32.37	7.80	80.0	$\pm 9.6\%$
		Y	7.35	84.46	28.18		80.0	
		Z	8.87	89.90	30.64		80.0	
10030- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	100.00	112.79	25.62	5.30	70.0	$\pm 9.6\%$
		Y	100.00	114.82	27.00		70.0	
		Z	100.00	114.42	26.76		70.0	
10031- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	100.00	115.72	24.80	1.88	100.0	$\pm 9.6\%$
		Y	100.00	113.38	24.09		100.0	
		Z	100.00	115.89	25.18		100.0	

10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	100.00	120.41	25.79	1.17	100.0	± 9.6 %
		Y	100.00	114.16	23.51		100.0	
		Z	100.00	119.12	25.59		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	100.00	129.47	35.05	5.30	70.0	± 9.6 %
		Y	18.38	101.08	27.98		70.0	
		Z	81.90	124.60	33.79		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	6.64	87.84	22.13	1.88	100.0	± 9.6 %
		Y	3.00	75.57	17.88		100.0	
		Z	4.74	82.07	20.06		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	2.97	77.58	18.32	1.17	100.0	± 9.6 %
		Y	1.90	70.39	15.43		100.0	
		Z	2.48	74.29	16.88		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	100.00	129.89	35.25	5.30	70.0	± 9.6 %
		Y	27.68	108.02	30.00		70.0	
		Z	100.00	128.17	34.71		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	6.03	86.58	21.70	1.88	100.0	± 9.6 %
		Y	2.87	75.04	17.64		100.0	
		Z	4.39	81.10	19.69		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	3.02	78.09	18.62	1.17	100.0	± 9.6 %
		Y	1.91	70.64	15.63		100.0	
		Z	2.51	74.67	17.13		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	1.60	69.78	14.71	0.00	150.0	± 9.6 %
		Y	1.37	66.49	13.17		150.0	
		Z	1.42	67.90	13.72		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	100.00	111.15	25.33	7.78	50.0	± 9.6 %
		Y	100.00	114.74	27.58		50.0	
		Z	100.00	113.75	27.01		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.00	95.22	3.63	0.00	150.0	± 9.6 %
		Y	0.04	107.19	11.02		150.0	
		Z	0.00	92.83	6.31		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	184.96	127.11	31.97	13.80	25.0	± 9.6 %
		Y	100.00	122.15	33.13		25.0	
		Z	100.00	121.24	32.28		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	100.00	114.31	27.52	10.79	40.0	± 9.6 %
		Y	100.00	119.49	30.89		40.0	
		Z	100.00	117.79	29.83		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	100.00	126.62	34.76	9.03	50.0	± 9.6 %
		Y	32.10	107.16	30.32		50.0	
		Z	100.00	125.89	34.80		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	6.41	84.14	27.94	6.55	100.0	± 9.6 %
		Y	5.65	79.23	25.29		100.0	
		Z	6.33	82.53	26.93		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.27	65.30	15.95	0.61	110.0	± 9.6 %
		Y	1.22	63.72	14.64		110.0	
		Z	1.27	64.75	15.42		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	100.00	135.81	35.03	1.30	110.0	± 9.6 %
		Y	3.70	84.73	21.19		110.0	
		Z	17.78	108.23	28.29		110.0	

10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	5.86	91.71	26.23	2.04	110.0	± 9.6 %
		Y	3.09	78.72	21.07		110.0	
		Z	4.57	85.89	23.93		110.0	
10062-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.70	66.60	16.49	0.49	100.0	± 9.6 %
		Y	4.73	66.26	16.20		100.0	
		Z	4.70	66.51	16.37		100.0	
10063-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.73	66.72	16.61	0.72	100.0	± 9.6 %
		Y	4.76	66.38	16.32		100.0	
		Z	4.72	66.63	16.49		100.0	
10064-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	5.02	67.01	16.87	0.86	100.0	± 9.6 %
		Y	5.08	66.72	16.60		100.0	
		Z	5.02	66.93	16.75		100.0	
10065-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	4.90	66.95	17.00	1.21	100.0	± 9.6 %
		Y	4.95	66.67	16.73		100.0	
		Z	4.90	66.88	16.89		100.0	
10066-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	4.92	67.00	17.19	1.46	100.0	± 9.6 %
		Y	4.98	66.73	16.92		100.0	
		Z	4.93	66.94	17.09		100.0	
10067-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	5.22	67.17	17.66	2.04	100.0	± 9.6 %
		Y	5.28	66.89	17.39		100.0	
		Z	5.24	67.15	17.57		100.0	
10068-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	5.28	67.30	17.94	2.55	100.0	± 9.6 %
		Y	5.37	67.09	17.69		100.0	
		Z	5.30	67.28	17.85		100.0	
10069-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.36	67.28	18.12	2.67	100.0	± 9.6 %
		Y	5.45	67.04	17.86		100.0	
		Z	5.39	67.27	18.04		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	5.02	66.82	17.49	1.99	100.0	± 9.6 %
		Y	5.07	66.54	17.22		100.0	
		Z	5.04	66.80	17.40		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	5.01	67.20	17.75	2.30	100.0	± 9.6 %
		Y	5.08	66.93	17.47		100.0	
		Z	5.04	67.19	17.66		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	5.08	67.40	18.12	2.83	100.0	± 9.6 %
		Y	5.15	67.13	17.83		100.0	
		Z	5.12	67.41	18.04		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	5.06	67.32	18.30	3.30	100.0	± 9.6 %
		Y	5.14	67.07	18.03		100.0	
		Z	5.12	67.36	18.24		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	5.11	67.49	18.67	3.82	90.0	± 9.6 %
		Y	5.21	67.31	18.42		90.0	
		Z	5.18	67.57	18.61		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	5.11	67.25	18.78	4.15	90.0	± 9.6 %
		Y	5.21	67.06	18.51		90.0	
		Z	5.19	67.36	18.74		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	5.13	67.31	18.88	4.30	90.0	± 9.6 %
		Y	5.23	67.11	18.60		90.0	
		Z	5.21	67.43	18.84		90.0	

10081-CAB	CDMA2000 (1xRTT, RC3)	X	0.79	64.69	11.87	0.00	150.0	± 9.6 %
		Y	0.74	62.88	10.84		150.0	
		Z	0.74	63.63	11.17		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	0.87	60.00	4.88	4.77	80.0	± 9.6 %
		Y	0.98	60.00	5.43		80.0	
		Z	0.98	60.00	5.33		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	100.00	114.25	26.64	6.56	60.0	± 9.6 %
		Y	100.00	116.84	28.38		60.0	
		Z	100.00	116.18	27.98		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	1.77	66.86	15.19	0.00	150.0	± 9.6 %
		Y	1.66	65.10	14.06		150.0	
		Z	1.72	66.07	14.64		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.74	66.81	15.15	0.00	150.0	± 9.6 %
		Y	1.62	65.02	14.00		150.0	
		Z	1.68	66.00	14.60		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	21.77	115.42	41.36	9.56	60.0	± 9.6 %
		Y	10.99	93.70	32.88		60.0	
		Z	16.24	105.11	37.37		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	3.06	69.68	16.31	0.00	150.0	± 9.6 %
		Y	2.87	68.12	15.32		150.0	
		Z	2.94	68.91	15.86		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.22	67.20	15.71	0.00	150.0	± 9.6 %
		Y	3.16	66.42	15.11		150.0	
		Z	3.17	66.83	15.43		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.33	67.18	15.81	0.00	150.0	± 9.6 %
		Y	3.28	66.45	15.25		150.0	
		Z	3.28	66.84	15.55		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	7.53	78.63	21.76	3.98	65.0	± 9.6 %
		Y	7.21	76.77	20.79		65.0	
		Z	7.93	78.90	21.74		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	7.28	76.36	21.68	3.98	65.0	± 9.6 %
		Y	7.04	74.69	20.73		65.0	
		Z	7.36	75.96	21.36		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	6.49	74.01	20.98	3.98	65.0	± 9.6 %
		Y	6.79	73.93	20.72		65.0	
		Z	7.19	75.46	21.47		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	2.67	68.90	16.12	0.00	150.0	± 9.6 %
		Y	2.54	67.35	15.10		150.0	
		Z	2.58	68.13	15.65		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	2.88	66.99	15.58	0.00	150.0	± 9.6 %
		Y	2.83	66.10	14.94		150.0	
		Z	2.83	66.57	15.27		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	2.17	67.95	15.70	0.00	150.0	± 9.6 %
		Y	2.06	66.30	14.62		150.0	
		Z	2.09	67.13	15.17		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.57	67.58	15.76	0.00	150.0	± 9.6 %
		Y	2.50	66.37	15.00		150.0	
		Z	2.51	67.05	15.38		150.0	

10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	3.00	66.99	15.65	0.00	150.0	± 9.6 %
		Y	2.96	66.16	15.05		150.0	
		Z	2.96	66.61	15.36		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.72	67.73	15.90	0.00	150.0	± 9.6 %
		Y	2.65	66.58	15.19		150.0	
		Z	2.67	67.25	15.55		150.0	
10114-CAB	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	5.13	67.06	16.34	0.00	150.0	± 9.6 %
		Y	5.13	66.71	16.03		150.0	
		Z	5.11	66.94	16.21		150.0	
10115-CAB	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.43	67.23	16.44	0.00	150.0	± 9.6 %
		Y	5.49	67.04	16.22		150.0	
		Z	5.41	67.11	16.31		150.0	
10116-CAB	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.23	67.27	16.37	0.00	150.0	± 9.6 %
		Y	5.24	66.95	16.08		150.0	
		Z	5.21	67.13	16.24		150.0	
10117-CAB	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	5.10	66.94	16.30	0.00	150.0	± 9.6 %
		Y	5.12	66.66	16.03		150.0	
		Z	5.08	66.82	16.16		150.0	
10118-CAB	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.52	67.44	16.55	0.00	150.0	± 9.6 %
		Y	5.56	67.20	16.31		150.0	
		Z	5.49	67.31	16.42		150.0	
10119-CAB	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	5.20	67.20	16.35	0.00	150.0	± 9.6 %
		Y	5.22	66.89	16.06		150.0	
		Z	5.18	67.08	16.22		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.36	67.19	15.74	0.00	150.0	± 9.6 %
		Y	3.32	66.47	15.19		150.0	
		Z	3.32	66.85	15.48		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.49	67.29	15.91	0.00	150.0	± 9.6 %
		Y	3.45	66.59	15.38		150.0	
		Z	3.45	66.97	15.66		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	1.94	67.79	15.30	0.00	150.0	± 9.6 %
		Y	1.83	65.97	14.20		150.0	
		Z	1.85	66.87	14.71		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.40	68.10	15.40	0.00	150.0	± 9.6 %
		Y	2.30	66.60	14.59		150.0	
		Z	2.32	67.42	14.94		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	2.22	66.14	13.96	0.00	150.0	± 9.6 %
		Y	2.18	65.11	13.40		150.0	
		Z	2.16	65.61	13.57		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	1.20	64.54	11.58	0.00	150.0	± 9.6 %
		Y	1.20	63.64	11.28		150.0	
		Z	1.15	63.81	11.07		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	2.00	66.51	12.15	0.00	150.0	± 9.6 %
		Y	2.20	66.98	12.79		150.0	
		Z	1.94	65.93	11.72		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	2.35	68.52	13.24	0.00	150.0	± 9.6 %
		Y	2.55	68.94	13.87		150.0	
		Z	2.24	67.67	12.70		150.0	

10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	2.88	67.04	15.63	0.00	150.0	± 9.6 %
		Y	2.83	66.15	14.98		150.0	
		Z	2.84	66.62	15.31		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	3.01	67.04	15.69	0.00	150.0	± 9.6 %
		Y	2.96	66.20	15.08		150.0	
		Z	2.96	66.66	15.40		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	8.73	82.80	23.45	3.98	65.0	± 9.6 %
		Y	7.53	78.91	21.73		65.0	
		Z	8.49	81.56	22.84		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	6.88	76.62	21.52	3.98	65.0	± 9.6 %
		Y	6.57	74.62	20.46		65.0	
		Z	6.93	76.10	21.14		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	7.30	77.59	22.28	3.98	65.0	± 9.6 %
		Y	6.97	75.60	21.25		65.0	
		Z	7.37	77.12	21.93		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.21	68.31	15.93	0.00	150.0	± 9.6 %
		Y	2.10	66.64	14.84		150.0	
		Z	2.13	67.47	15.39		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.57	67.59	15.77	0.00	150.0	± 9.6 %
		Y	2.50	66.37	15.01		150.0	
		Z	2.51	67.06	15.40		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	1.78	67.76	15.05	0.00	150.0	± 9.6 %
		Y	1.67	65.83	13.92		150.0	
		Z	1.69	66.74	14.41		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	2.04	66.56	13.93	0.00	150.0	± 9.6 %
		Y	1.98	65.30	13.29		150.0	
		Z	1.97	65.89	13.47		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.73	67.79	15.94	0.00	150.0	± 9.6 %
		Y	2.66	66.63	15.23		150.0	
		Z	2.67	67.30	15.59		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	2.14	66.97	14.19	0.00	150.0	± 9.6 %
		Y	2.08	65.69	13.56		150.0	
		Z	2.07	66.29	13.74		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	2.70	68.08	15.96	0.00	150.0	± 9.6 %
		Y	2.59	66.76	15.07		150.0	
		Z	2.62	67.46	15.55		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	2.90	66.96	15.61	0.00	150.0	± 9.6 %
		Y	2.86	66.09	15.00		150.0	
		Z	2.86	66.57	15.31		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	3.01	67.11	15.72	0.00	150.0	± 9.6 %
		Y	2.97	66.22	15.11		150.0	
		Z	2.97	66.73	15.43		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	3.58	69.08	18.90	3.01	150.0	± 9.6 %
		Y	3.66	68.62	18.52		150.0	
		Z	3.57	68.93	18.72		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	4.32	71.62	19.24	3.01	150.0	± 9.6 %
		Y	4.44	71.05	18.84		150.0	
		Z	4.33	71.56	19.10		150.0	

10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	4.72	73.57	20.43	3.01	150.0	± 9.6 %
		Y	4.88	73.09	20.10		150.0	
		Z	4.77	73.65	20.36		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	2.98	68.46	18.63	3.01	150.0	± 9.6 %
		Y	3.13	68.48	18.40		150.0	
		Z	2.99	68.40	18.47		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	3.89	73.35	20.55	3.01	150.0	± 9.6 %
		Y	4.19	73.57	20.42		150.0	
		Z	3.99	73.62	20.53		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	3.31	69.97	18.14	3.01	150.0	± 9.6 %
		Y	3.49	69.74	17.80		150.0	
		Z	3.34	69.93	17.97		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	11.55	97.77	31.19	6.02	65.0	± 9.6 %
		Y	11.40	94.31	29.41		65.0	
		Z	16.01	102.73	32.36		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	32.34	112.09	33.30	6.02	65.0	± 9.6 %
		Y	19.08	99.88	29.45		65.0	
		Z	28.90	108.74	32.12		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	19.17	101.17	29.63	6.02	65.0	± 9.6 %
		Y	12.62	91.53	26.38		65.0	
		Z	23.83	103.74	30.12		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	2.95	68.20	18.41	3.01	150.0	± 9.6 %
		Y	3.09	68.16	18.15		150.0	
		Z	2.96	68.12	18.23		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	3.90	73.37	20.56	3.01	150.0	± 9.6 %
		Y	4.19	73.59	20.43		150.0	
		Z	3.99	73.64	20.54		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	2.97	68.33	18.49	3.01	150.0	± 9.6 %
		Y	3.12	68.32	18.26		150.0	
		Z	2.98	68.26	18.32		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	3.86	73.19	20.45	3.01	150.0	± 9.6 %
		Y	4.14	73.34	20.29		150.0	
		Z	3.96	73.44	20.43		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	3.57	71.58	19.23	3.01	150.0	± 9.6 %
		Y	3.79	71.47	18.95		150.0	
		Z	3.63	71.65	19.12		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	3.30	69.91	18.10	3.01	150.0	± 9.6 %
		Y	3.48	69.66	17.74		150.0	
		Z	3.33	69.86	17.92		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	2.96	68.32	18.49	3.01	150.0	± 9.6 %
		Y	3.11	68.30	18.25		150.0	
		Z	2.98	68.24	18.31		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	3.86	73.17	20.44	3.01	150.0	± 9.6 %
		Y	4.14	73.32	20.28		150.0	
		Z	3.95	73.42	20.42		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	3.29	69.89	18.09	3.01	150.0	± 9.6 %
		Y	3.47	69.64	17.73		150.0	
		Z	3.32	69.84	17.91		150.0	

10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	2.97	68.36	18.51	3.01	150.0	± 9.6 %
		Y	3.12	68.35	18.27		150.0	
		Z	2.99	68.28	18.34		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	3.87	73.23	20.48	3.01	150.0	± 9.6 %
		Y	4.16	73.38	20.32		150.0	
		Z	3.97	73.49	20.45		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	3.31	69.95	18.12	3.01	150.0	± 9.6 %
		Y	3.49	69.69	17.76		150.0	
		Z	3.34	69.90	17.95		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	2.98	68.40	18.56	3.01	150.0	± 9.6 %
		Y	3.13	68.38	18.32		150.0	
		Z	3.00	68.33	18.40		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	3.97	73.76	20.80	3.01	150.0	± 9.6 %
		Y	4.29	74.05	20.71		150.0	
		Z	4.08	74.08	20.80		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	3.37	70.31	18.37	3.01	150.0	± 9.6 %
		Y	3.56	70.09	18.03		150.0	
		Z	3.41	70.28	18.20		150.0	
10193-CAB	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.53	66.46	16.04	0.00	150.0	± 9.6 %
		Y	4.54	66.08	15.74		150.0	
		Z	4.51	66.32	15.89		150.0	
10194-CAB	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.70	66.77	16.16	0.00	150.0	± 9.6 %
		Y	4.72	66.42	15.86		150.0	
		Z	4.68	66.64	16.02		150.0	
10195-CAB	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.74	66.81	16.18	0.00	150.0	± 9.6 %
		Y	4.77	66.45	15.88		150.0	
		Z	4.72	66.67	16.04		150.0	
10196-CAB	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.53	66.52	16.06	0.00	150.0	± 9.6 %
		Y	4.55	66.16	15.76		150.0	
		Z	4.51	66.38	15.91		150.0	
10197-CAB	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.71	66.80	16.17	0.00	150.0	± 9.6 %
		Y	4.74	66.44	15.87		150.0	
		Z	4.69	66.66	16.03		150.0	
10198-CAB	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.74	66.82	16.19	0.00	150.0	± 9.6 %
		Y	4.77	66.46	15.89		150.0	
		Z	4.72	66.69	16.05		150.0	
10219-CAB	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.48	66.53	16.01	0.00	150.0	± 9.6 %
		Y	4.50	66.15	15.72		150.0	
		Z	4.46	66.39	15.87		150.0	
10220-CAB	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.71	66.77	16.16	0.00	150.0	± 9.6 %
		Y	4.74	66.43	15.87		150.0	
		Z	4.69	66.63	16.02		150.0	
10221-CAB	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.75	66.75	16.18	0.00	150.0	± 9.6 %
		Y	4.78	66.41	15.88		150.0	
		Z	4.73	66.62	16.04		150.0	
10222-CAB	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	5.08	66.95	16.29	0.00	150.0	± 9.6 %
		Y	5.10	66.67	16.02		150.0	
		Z	5.06	66.82	16.16		150.0	

10223-CAB	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.38	67.15	16.42	0.00	150.0	± 9.6 %
		Y	5.42	66.92	16.18		150.0	
		Z	5.36	67.04	16.29		150.0	
10224-CAB	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	5.12	67.06	16.27	0.00	150.0	± 9.6 %
		Y	5.14	66.77	16.00		150.0	
		Z	5.10	66.93	16.14		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	2.79	65.81	15.12	0.00	150.0	± 9.6 %
		Y	2.77	65.08	14.64		150.0	
		Z	2.76	65.50	14.85		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	35.68	114.09	33.94	6.02	65.0	± 9.6 %
		Y	20.60	101.42	30.01		65.0	
		Z	31.84	110.68	32.75		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	31.15	109.62	32.04	6.02	65.0	± 9.6 %
		Y	18.77	98.35	28.54		65.0	
		Z	28.39	106.83	31.05		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	20.06	109.32	34.77	6.02	65.0	± 9.6 %
		Y	13.21	97.68	30.60		65.0	
		Z	17.58	104.98	33.12		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	32.55	112.18	33.33	6.02	65.0	± 9.6 %
		Y	19.22	99.99	29.50		65.0	
		Z	29.11	108.85	32.16		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	28.53	107.93	31.50	6.02	65.0	± 9.6 %
		Y	17.56	97.07	28.07		65.0	
		Z	26.03	105.18	30.51		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	18.75	107.81	34.25	6.02	65.0	± 9.6 %
		Y	12.53	96.52	30.15		65.0	
		Z	16.49	103.58	32.61		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	32.52	112.18	33.33	6.02	65.0	± 9.6 %
		Y	19.19	99.97	29.49		65.0	
		Z	29.08	108.84	32.15		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	28.47	107.91	31.49	6.02	65.0	± 9.6 %
		Y	17.52	97.05	28.07		65.0	
		Z	25.98	105.16	30.50		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	17.68	106.40	33.71	6.02	65.0	± 9.6 %
		Y	11.95	95.43	29.69		65.0	
		Z	15.61	102.28	32.10		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	32.63	112.27	33.36	6.02	65.0	± 9.6 %
		Y	19.21	100.01	29.50		65.0	
		Z	29.15	108.90	32.17		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	28.97	108.18	31.56	6.02	65.0	± 9.6 %
		Y	17.70	97.20	28.11		65.0	
		Z	26.35	105.38	30.56		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	18.87	107.98	34.30	6.02	65.0	± 9.6 %
		Y	12.55	96.59	30.17		65.0	
		Z	16.56	103.70	32.65		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	32.49	112.18	33.33	6.02	65.0	± 9.6 %
		Y	19.15	99.96	29.48		65.0	
		Z	29.04	108.83	32.15		65.0	

10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	28.40	107.89	31.49	6.02	65.0	± 9.6 %
		Y	17.48	97.02	28.06		65.0	
		Z	25.91	105.13	30.50		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	18.79	107.91	34.28	6.02	65.0	± 9.6 %
		Y	12.51	96.54	30.16		65.0	
		Z	16.51	103.64	32.64		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	9.37	84.09	26.88	6.98	65.0	± 9.6 %
		Y	9.00	81.48	25.58		65.0	
		Z	9.64	84.05	26.66		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	8.12	81.00	25.56	6.98	65.0	± 9.6 %
		Y	8.55	80.38	25.06		65.0	
		Z	9.37	83.46	26.36		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	6.40	77.14	24.85	6.98	65.0	± 9.6 %
		Y	6.84	76.95	24.45		65.0	
		Z	7.32	79.56	25.70		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	8.16	80.65	20.72	3.98	65.0	± 9.6 %
		Y	7.84	79.38	20.61		65.0	
		Z	8.14	79.93	20.35		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	7.83	79.71	20.30	3.98	65.0	± 9.6 %
		Y	7.66	78.75	20.31		65.0	
		Z	7.84	79.07	19.96		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	9.87	87.16	23.15	3.98	65.0	± 9.6 %
		Y	7.04	80.78	21.05		65.0	
		Z	8.70	84.28	22.05		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	6.51	77.88	20.45	3.98	65.0	± 9.6 %
		Y	5.98	75.48	19.58		65.0	
		Z	6.46	77.04	19.99		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	6.37	77.00	20.08	3.98	65.0	± 9.6 %
		Y	5.96	74.87	19.30		65.0	
		Z	6.35	76.24	19.64		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	11.72	90.67	25.27	3.98	65.0	± 9.6 %
		Y	7.95	82.86	22.54		65.0	
		Z	10.24	87.46	24.05		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	7.35	79.99	22.89	3.98	65.0	± 9.6 %
		Y	6.77	77.28	21.67		65.0	
		Z	7.36	79.26	22.43		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	6.80	77.27	21.44	3.98	65.0	± 9.6 %
		Y	6.40	74.99	20.37		65.0	
		Z	6.83	76.65	21.02		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	10.21	87.88	25.28	3.98	65.0	± 9.6 %
		Y	7.87	81.78	22.87		65.0	
		Z	9.51	85.69	24.35		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	6.68	75.93	21.23	3.98	65.0	± 9.6 %
		Y	6.40	74.02	20.23		65.0	
		Z	6.75	75.48	20.88		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	7.07	76.85	21.92	3.98	65.0	± 9.6 %
		Y	6.78	74.95	20.95		65.0	
		Z	7.16	76.44	21.59		65.0	

10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	8.17	81.88	23.35	3.98	65.0	± 9.6 %
		Y	7.16	78.19	21.68		65.0	
		Z	8.02	80.77	22.77		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	6.36	76.31	17.99	3.98	65.0	± 9.6 %
		Y	6.65	76.53	18.59		65.0	
		Z	6.39	75.76	17.71		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	6.00	75.09	17.39	3.98	65.0	± 9.6 %
		Y	6.42	75.61	18.13		65.0	
		Z	6.07	74.65	17.16		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	6.89	80.77	20.02	3.98	65.0	± 9.6 %
		Y	5.76	77.33	19.04		65.0	
		Z	6.39	78.86	19.25		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	6.85	78.66	21.33	3.98	65.0	± 9.6 %
		Y	6.29	76.08	20.30		65.0	
		Z	6.82	77.85	20.86		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	6.81	78.20	21.15	3.98	65.0	± 9.6 %
		Y	6.32	75.84	20.21		65.0	
		Z	6.80	77.46	20.71		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	10.08	87.99	24.80	3.98	65.0	± 9.6 %
		Y	7.48	81.48	22.36		65.0	
		Z	9.21	85.51	23.77		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	7.34	79.93	22.84	3.98	65.0	± 9.6 %
		Y	6.76	77.23	21.62		65.0	
		Z	7.35	79.20	22.39		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	6.79	77.25	21.43	3.98	65.0	± 9.6 %
		Y	6.39	74.98	20.36		65.0	
		Z	6.82	76.63	21.02		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	10.08	87.62	25.17	3.98	65.0	± 9.6 %
		Y	7.79	81.58	22.77		65.0	
		Z	9.40	85.45	24.24		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	6.88	76.62	21.52	3.98	65.0	± 9.6 %
		Y	6.56	74.62	20.47		65.0	
		Z	6.93	76.10	21.15		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	7.29	77.57	22.27	3.98	65.0	± 9.6 %
		Y	6.97	75.59	21.24		65.0	
		Z	7.36	77.10	21.92		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	8.71	82.74	23.43	3.98	65.0	± 9.6 %
		Y	7.52	78.86	21.71		65.0	
		Z	8.47	81.51	22.82		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	7.37	76.01	21.65	3.98	65.0	± 9.6 %
		Y	7.17	74.48	20.77		65.0	
		Z	7.47	75.69	21.37		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	7.29	75.48	21.48	3.98	65.0	± 9.6 %
		Y	7.12	74.04	20.65		65.0	
		Z	7.40	75.21	21.22		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	7.79	78.59	21.97	3.98	65.0	± 9.6 %
		Y	7.27	76.27	20.81		65.0	
		Z	7.80	77.99	21.60		65.0	

10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	X	2.56	66.09	14.99	0.00	150.0	± 9.6 %
		Y	2.50	65.10	14.35		150.0	
		Z	2.52	65.70	14.67		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	1.56	66.99	14.99	0.00	150.0	± 9.6 %
		Y	1.44	65.00	13.67		150.0	
		Z	1.49	66.00	14.34		150.0	
10277-CAA	PHS (QPSK)	X	2.20	62.12	7.54	9.03	50.0	± 9.6 %
		Y	2.95	64.23	9.71		50.0	
		Z	2.73	63.45	8.82		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	12.02	86.88	21.32	9.03	50.0	± 9.6 %
		Y	9.61	83.75	21.26		50.0	
		Z	10.08	83.80	20.69		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	12.31	87.20	21.50	9.03	50.0	± 9.6 %
		Y	9.76	83.87	21.34		50.0	
		Z	10.25	83.99	20.81		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	1.34	67.25	13.27	0.00	150.0	± 9.6 %
		Y	1.23	65.06	12.21		150.0	
		Z	1.23	65.94	12.51		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	0.78	64.52	11.76	0.00	150.0	± 9.6 %
		Y	0.73	62.76	10.76		150.0	
		Z	0.73	63.49	11.07		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	0.92	67.57	13.69	0.00	150.0	± 9.6 %
		Y	0.78	64.18	11.87		150.0	
		Z	0.82	65.63	12.57		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	1.26	71.98	16.14	0.00	150.0	± 9.6 %
		Y	0.91	66.08	13.26		150.0	
		Z	1.03	68.67	14.48		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	14.84	95.74	28.21	9.03	50.0	± 9.6 %
		Y	8.91	84.62	24.53		50.0	
		Z	12.81	91.53	26.70		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	2.69	68.98	16.18	0.00	150.0	± 9.6 %
		Y	2.55	67.43	15.16		150.0	
		Z	2.59	68.22	15.71		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	1.50	66.65	13.59	0.00	150.0	± 9.6 %
		Y	1.43	65.00	12.74		150.0	
		Z	1.41	65.64	12.95		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	2.59	69.25	14.37	0.00	150.0	± 9.6 %
		Y	2.65	68.80	14.43		150.0	
		Z	2.50	68.57	13.91		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	1.99	65.10	11.65	0.00	150.0	± 9.6 %
		Y	2.16	65.32	12.07		150.0	
		Z	1.97	64.79	11.37		150.0	
10301-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	4.92	65.97	17.73	4.17	50.0	± 9.6 %
		Y	4.90	65.12	17.14		50.0	
		Z	4.93	65.81	17.52		50.0	
10302-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	5.34	66.33	18.31	4.96	50.0	± 9.6 %
		Y	5.41	65.80	17.88		50.0	
		Z	5.39	66.34	18.19		50.0	

10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	5.09	66.00	18.16	4.96	50.0	± 9.6 %
		Y	5.18	65.53	17.76		50.0	
		Z	5.16	66.05	18.06		50.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	4.89	65.81	17.60	4.17	50.0	± 9.6 %
		Y	4.95	65.27	17.18		50.0	
		Z	4.94	65.81	17.48		50.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	4.50	67.81	19.84	6.02	35.0	± 9.6 %
		Y	4.79	68.06	19.81		35.0	
		Z	4.79	68.83	20.16		35.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	4.81	66.77	19.38	6.02	35.0	± 9.6 %
		Y	5.03	66.83	19.26		35.0	
		Z	4.99	67.39	19.54		35.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	4.71	66.97	19.36	6.02	35.0	± 9.6 %
		Y	4.96	67.13	19.28		35.0	
		Z	4.92	67.66	19.55		35.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	4.69	67.17	19.50	6.02	35.0	± 9.6 %
		Y	4.93	67.30	19.40		35.0	
		Z	4.91	67.91	19.71		35.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	4.88	67.02	19.54	6.02	35.0	± 9.6 %
		Y	5.10	67.08	19.41		35.0	
		Z	5.06	67.62	19.69		35.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	4.76	66.83	19.35	6.02	35.0	± 9.6 %
		Y	4.98	66.92	19.24		35.0	
		Z	4.95	67.49	19.53		35.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	3.04	68.33	15.87	0.00	150.0	± 9.6 %
		Y	2.87	66.87	14.93		150.0	
		Z	2.93	67.62	15.44		150.0	
10313-AAA	iDEN 1:3	X	8.93	84.60	20.34	6.99	70.0	± 9.6 %
		Y	5.29	76.79	17.81		70.0	
		Z	7.61	81.75	19.55		70.0	
10314-AAA	iDEN 1:6	X	16.77	101.33	28.93	10.00	30.0	± 9.6 %
		Y	7.37	85.56	23.98		30.0	
		Z	12.54	94.77	26.95		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	1.09	63.49	14.87	0.17	150.0	± 9.6 %
		Y	1.05	62.22	13.71		150.0	
		Z	1.08	62.99	14.36		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.60	66.57	16.23	0.17	150.0	± 9.6 %
		Y	4.62	66.21	15.92		150.0	
		Z	4.58	66.45	16.09		150.0	
10317-AAB	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.60	66.57	16.23	0.17	150.0	± 9.6 %
		Y	4.62	66.21	15.92		150.0	
		Z	4.58	66.45	16.09		150.0	
10400-AAC	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.70	66.84	16.16	0.00	150.0	± 9.6 %
		Y	4.72	66.46	15.84		150.0	
		Z	4.67	66.68	16.01		150.0	
10401-AAC	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.40	67.06	16.35	0.00	150.0	± 9.6 %
		Y	5.40	66.70	16.04		150.0	
		Z	5.38	66.94	16.22		150.0	

10402-AAC	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.64	67.36	16.36	0.00	150.0	± 9.6 %
		Y	5.68	67.15	16.13		150.0	
		Z	5.63	67.25	16.24		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	1.34	67.25	13.27	0.00	115.0	± 9.6 %
		Y	1.23	65.06	12.21		115.0	
		Z	1.23	65.94	12.51		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	1.34	67.25	13.27	0.00	115.0	± 9.6 %
		Y	1.23	65.06	12.21		115.0	
		Z	1.23	65.94	12.51		115.0	
10406-AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	11.88	94.10	24.15	0.00	100.0	± 9.6 %
		Y	7.20	85.63	21.54		100.0	
		Z	12.10	93.11	23.46		100.0	
10410-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	124.75	31.89	3.23	80.0	± 9.6 %
		Y	100.00	122.93	31.42		80.0	
		Z	100.00	123.26	31.33		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	1.00	62.50	14.18	0.00	150.0	± 9.6 %
		Y	0.97	61.38	13.09		150.0	
		Z	0.99	62.01	13.68		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.53	66.50	16.10	0.00	150.0	± 9.6 %
		Y	4.55	66.12	15.79		150.0	
		Z	4.51	66.36	15.96		150.0	
10417-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.53	66.50	16.10	0.00	150.0	± 9.6 %
		Y	4.55	66.12	15.79		150.0	
		Z	4.51	66.36	15.96		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)	X	4.52	66.65	16.12	0.00	150.0	± 9.6 %
		Y	4.53	66.24	15.79		150.0	
		Z	4.50	66.50	15.97		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)	X	4.54	66.60	16.12	0.00	150.0	± 9.6 %
		Y	4.55	66.21	15.80		150.0	
		Z	4.52	66.46	15.97		150.0	
10422-AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.66	66.61	16.14	0.00	150.0	± 9.6 %
		Y	4.68	66.24	15.84		150.0	
		Z	4.64	66.48	16.00		150.0	
10423-AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.83	66.93	16.26	0.00	150.0	± 9.6 %
		Y	4.86	66.58	15.96		150.0	
		Z	4.80	66.79	16.11		150.0	
10424-AAA	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.75	66.87	16.23	0.00	150.0	± 9.6 %
		Y	4.77	66.51	15.92		150.0	
		Z	4.72	66.73	16.08		150.0	
10425-AAA	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.35	67.20	16.42	0.00	150.0	± 9.6 %
		Y	5.37	66.92	16.15		150.0	
		Z	5.33	67.08	16.29		150.0	
10426-AAA	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.35	67.22	16.43	0.00	150.0	± 9.6 %
		Y	5.37	66.92	16.15		150.0	
		Z	5.33	67.10	16.30		150.0	

10427-AAA	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.36	67.21	16.41	0.00	150.0	± 9.6 %
		Y	5.39	66.92	16.14		150.0	
		Z	5.34	67.09	16.29		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.16	70.13	17.79	0.00	150.0	± 9.6 %
		Y	4.16	69.45	17.46		150.0	
		Z	4.14	69.98	17.64		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	4.21	67.00	16.07	0.00	150.0	± 9.6 %
		Y	4.23	66.50	15.72		150.0	
		Z	4.18	66.80	15.89		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.51	66.90	16.16	0.00	150.0	± 9.6 %
		Y	4.54	66.49	15.84		150.0	
		Z	4.49	66.74	16.00		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.76	66.91	16.25	0.00	150.0	± 9.6 %
		Y	4.79	66.55	15.95		150.0	
		Z	4.74	66.77	16.10		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.23	70.87	17.71	0.00	150.0	± 9.6 %
		Y	4.20	70.04	17.36		150.0	
		Z	4.20	70.67	17.54		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	124.53	31.79	3.23	80.0	± 9.6 %
		Y	100.00	122.74	31.34		80.0	
		Z	100.00	123.05	31.23		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.49	66.90	15.34	0.00	150.0	± 9.6 %
		Y	3.49	66.24	14.98		150.0	
		Z	3.44	66.62	15.10		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.05	66.77	15.93	0.00	150.0	± 9.6 %
		Y	4.06	66.26	15.57		150.0	
		Z	4.02	66.58	15.74		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.32	66.72	16.05	0.00	150.0	± 9.6 %
		Y	4.33	66.29	15.72		150.0	
		Z	4.30	66.56	15.89		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.52	66.67	16.09	0.00	150.0	± 9.6 %
		Y	4.53	66.28	15.78		150.0	
		Z	4.50	66.52	15.94		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	3.37	67.03	14.94	0.00	150.0	± 9.6 %
		Y	3.38	66.35	14.62		150.0	
		Z	3.32	66.70	14.68		150.0	
10456-AAA	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.21	67.77	16.59	0.00	150.0	± 9.6 %
		Y	6.23	67.56	16.37		150.0	
		Z	6.19	67.67	16.48		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.79	65.14	15.80	0.00	150.0	± 9.6 %
		Y	3.78	64.76	15.48		150.0	
		Z	3.78	65.02	15.65		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	3.89	70.15	17.12	0.00	150.0	± 9.6 %
		Y	3.82	69.10	16.70		150.0	
		Z	3.83	69.86	16.89		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	5.04	67.99	17.89	0.00	150.0	± 9.6 %
		Y	5.08	67.55	17.74		150.0	
		Z	5.02	67.93	17.81		150.0	

10460-AAA	UMTS-FDD (WCDMA, AMR)	X	0.84	66.49	15.04	0.00	150.0	± 9.6 %
		Y	0.74	63.53	12.94		150.0	
		Z	0.79	64.90	13.97		150.0	
10461-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	129.32	34.06	3.29	80.0	± 9.6 %
		Y	100.00	125.72	32.81		80.0	
		Z	100.00	127.22	33.23		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.03	25.03	3.23	80.0	± 9.6 %
		Y	17.00	90.25	20.63		80.0	
		Z	31.48	96.77	21.90		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	8.23	81.26	17.08	3.23	80.0	± 9.6 %
		Y	5.50	76.44	15.94		80.0	
		Z	5.45	76.58	15.61		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	126.97	32.79	3.23	80.0	± 9.6 %
		Y	100.00	123.56	31.65		80.0	
		Z	100.00	124.92	32.00		80.0	
10465-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	31.92	97.31	22.00	3.23	80.0	± 9.6 %
		Y	9.36	83.39	18.60		80.0	
		Z	13.45	87.38	19.37		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.07	76.19	15.44	3.23	80.0	± 9.6 %
		Y	4.08	73.16	14.76		80.0	
		Z	3.86	72.97	14.33		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	127.25	32.92	3.23	80.0	± 9.6 %
		Y	100.00	123.80	31.76		80.0	
		Z	100.00	125.18	32.12		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	43.54	100.77	22.86	3.23	80.0	± 9.6 %
		Y	10.65	84.90	19.07		80.0	
		Z	16.32	89.54	19.98		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.15	76.36	15.50	3.23	80.0	± 9.6 %
		Y	4.11	73.25	14.79		80.0	
		Z	3.90	73.09	14.37		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	127.29	32.93	3.23	80.0	± 9.6 %
		Y	100.00	123.83	31.76		80.0	
		Z	100.00	125.21	32.12		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	43.27	100.65	22.81	3.23	80.0	± 9.6 %
		Y	10.60	84.82	19.03		80.0	
		Z	16.19	89.43	19.93		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.10	76.27	15.45	3.23	80.0	± 9.6 %
		Y	4.09	73.19	14.75		80.0	
		Z	3.87	73.01	14.33		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	127.25	32.91	3.23	80.0	± 9.6 %
		Y	100.00	123.80	31.75		80.0	
		Z	100.00	125.18	32.11		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	42.06	100.36	22.74	3.23	80.0	± 9.6 %
		Y	10.45	84.67	18.99		80.0	
		Z	15.89	89.24	19.88		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.04	76.16	15.42	3.23	80.0	± 9.6 %
		Y	4.06	73.11	14.73		80.0	
		Z	3.84	72.92	14.31		80.0	

10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	33.66	97.84	22.10	3.23	80.0	± 9.6 %
		Y	9.49	83.54	18.63		80.0	
		Z	13.79	87.64	19.42		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.97	75.99	15.35	3.23	80.0	± 9.6 %
		Y	4.02	73.00	14.68		80.0	
		Z	3.80	72.80	14.25		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	11.23	92.52	25.50	3.23	80.0	± 9.6 %
		Y	6.79	83.32	22.57		80.0	
		Z	9.78	89.56	24.40		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	12.19	87.96	22.19	3.23	80.0	± 9.6 %
		Y	8.09	81.55	20.41		80.0	
		Z	10.84	85.79	21.38		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	9.64	83.93	20.54	3.23	80.0	± 9.6 %
		Y	7.10	79.15	19.25		80.0	
		Z	8.69	82.06	19.81		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.07	76.08	18.57	2.23	80.0	± 9.6 %
		Y	2.93	70.30	16.31		80.0	
		Z	3.58	73.62	17.49		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	6.17	78.06	18.90	2.23	80.0	± 9.6 %
		Y	5.47	75.83	18.42		80.0	
		Z	5.76	76.63	18.26		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.57	76.44	18.31	2.23	80.0	± 9.6 %
		Y	5.15	74.75	18.01		80.0	
		Z	5.28	75.20	17.73		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.26	76.87	19.83	2.23	80.0	± 9.6 %
		Y	3.22	71.33	17.47		80.0	
		Z	3.89	74.79	18.86		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.73	71.42	17.16	2.23	80.0	± 9.6 %
		Y	3.29	68.59	15.95		80.0	
		Z	3.60	70.44	16.61		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.69	70.90	16.93	2.23	80.0	± 9.6 %
		Y	3.31	68.33	15.84		80.0	
		Z	3.59	70.01	16.42		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.26	74.99	19.78	2.23	80.0	± 9.6 %
		Y	3.62	71.15	17.92		80.0	
		Z	4.07	73.67	19.08		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.84	70.40	17.93	2.23	80.0	± 9.6 %
		Y	3.61	68.41	16.88		80.0	
		Z	3.82	69.88	17.56		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.92	70.16	17.84	2.23	80.0	± 9.6 %
		Y	3.71	68.30	16.86		80.0	
		Z	3.91	69.69	17.50		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.31	72.81	19.02	2.23	80.0	± 9.6 %
		Y	3.91	70.17	17.62		80.0	
		Z	4.23	71.98	18.53		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.13	69.38	17.79	2.23	80.0	± 9.6 %
		Y	3.99	67.95	16.95		80.0	
		Z	4.14	69.05	17.51		80.0	

10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.19	69.21	17.72	2.23	80.0	± 9.6 %
		Y	4.07	67.86	16.93		80.0	
		Z	4.21	68.91	17.46		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.78	74.65	19.59	2.23	80.0	± 9.6 %
		Y	4.19	71.48	18.00		80.0	
		Z	4.61	73.56	19.01		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.18	69.82	18.00	2.23	80.0	± 9.6 %
		Y	4.02	68.34	17.12		80.0	
		Z	4.18	69.45	17.71		80.0	
10496-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.24	69.47	17.88	2.23	80.0	± 9.6 %
		Y	4.11	68.12	17.07		80.0	
		Z	4.26	69.16	17.62		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.93	71.34	15.73	2.23	80.0	± 9.6 %
		Y	2.32	67.42	14.30		80.0	
		Z	2.63	69.37	14.82		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.00	63.90	11.38	2.23	80.0	± 9.6 %
		Y	2.08	63.63	11.61		80.0	
		Z	1.97	63.35	11.05		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.91	63.18	10.88	2.23	80.0	± 9.6 %
		Y	2.05	63.20	11.27		80.0	
		Z	1.90	62.73	10.60		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.14	75.62	19.65	2.23	80.0	± 9.6 %
		Y	3.33	70.97	17.55		80.0	
		Z	3.88	73.98	18.83		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.78	71.02	17.45	2.23	80.0	± 9.6 %
		Y	3.43	68.51	16.31		80.0	
		Z	3.71	70.25	16.99		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.83	70.81	17.31	2.23	80.0	± 9.6 %
		Y	3.50	68.43	16.23		80.0	
		Z	3.76	70.08	16.86		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.20	74.78	19.68	2.23	80.0	± 9.6 %
		Y	3.57	70.97	17.83		80.0	
		Z	4.02	73.47	18.99		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.82	70.31	17.88	2.23	80.0	± 9.6 %
		Y	3.59	68.32	16.83		80.0	
		Z	3.81	69.79	17.51		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.90	70.07	17.79	2.23	80.0	± 9.6 %
		Y	3.70	68.21	16.81		80.0	
		Z	3.89	69.59	17.44		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.74	74.49	19.51	2.23	80.0	± 9.6 %
		Y	4.16	71.34	17.93		80.0	
		Z	4.58	73.41	18.94		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.16	69.76	17.96	2.23	80.0	± 9.6 %
		Y	4.01	68.27	17.08		80.0	
		Z	4.17	69.39	17.67		80.0	

10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.23	69.40	17.84	2.23	80.0	± 9.6 %
		Y	4.10	68.05	17.03		80.0	
		Z	4.24	69.09	17.58		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.93	72.70	18.79	2.23	80.0	± 9.6 %
		Y	4.54	70.50	17.61		80.0	
		Z	4.85	72.01	18.38		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.63	69.33	17.86	2.23	80.0	± 9.6 %
		Y	4.52	68.21	17.15		80.0	
		Z	4.65	69.07	17.63		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.66	69.03	17.77	2.23	80.0	± 9.6 %
		Y	4.58	67.99	17.10		80.0	
		Z	4.69	68.81	17.56		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.30	74.65	19.41	2.23	80.0	± 9.6 %
		Y	4.69	71.80	17.99		80.0	
		Z	5.13	73.66	18.90		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.53	69.68	18.00	2.23	80.0	± 9.6 %
		Y	4.40	68.46	17.23		80.0	
		Z	4.54	69.37	17.75		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.52	69.18	17.85	2.23	80.0	± 9.6 %
		Y	4.43	68.08	17.14		80.0	
		Z	4.55	68.93	17.62		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.96	62.64	14.21	0.00	150.0	± 9.6 %
		Y	0.93	61.44	13.05		150.0	
		Z	0.95	62.11	13.67		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.52	67.26	15.36	0.00	150.0	± 9.6 %
		Y	0.43	62.99	12.24		150.0	
		Z	0.47	64.70	13.68		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.80	64.11	14.55	0.00	150.0	± 9.6 %
		Y	0.75	62.20	12.91		150.0	
		Z	0.78	63.15	13.76		150.0	
10518-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.52	66.57	16.08	0.00	150.0	± 9.6 %
		Y	4.54	66.18	15.76		150.0	
		Z	4.50	66.43	15.93		150.0	
10519-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.71	66.81	16.20	0.00	150.0	± 9.6 %
		Y	4.74	66.45	15.91		150.0	
		Z	4.69	66.67	16.06		150.0	
10520-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.56	66.76	16.12	0.00	150.0	± 9.6 %
		Y	4.58	66.39	15.81		150.0	
		Z	4.54	66.61	15.96		150.0	
10521-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.49	66.75	16.10	0.00	150.0	± 9.6 %
		Y	4.52	66.37	15.78		150.0	
		Z	4.47	66.59	15.94		150.0	
10522-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.55	66.84	16.19	0.00	150.0	± 9.6 %
		Y	4.57	66.42	15.85		150.0	
		Z	4.53	66.69	16.03		150.0	

10523-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.43	66.70	16.03	0.00	150.0	± 9.6 %
		Y	4.44	66.28	15.69		150.0	
		Z	4.41	66.55	15.88		150.0	
10524-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.49	66.76	16.15	0.00	150.0	± 9.6 %
		Y	4.52	66.35	15.82		150.0	
		Z	4.47	66.60	16.00		150.0	
10525-AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.48	65.81	15.74	0.00	150.0	± 9.6 %
		Y	4.48	65.39	15.41		150.0	
		Z	4.46	65.66	15.59		150.0	
10526-AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.65	66.17	15.89	0.00	150.0	± 9.6 %
		Y	4.66	65.76	15.55		150.0	
		Z	4.62	66.01	15.73		150.0	
10527-AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.57	66.12	15.83	0.00	150.0	± 9.6 %
		Y	4.58	65.71	15.49		150.0	
		Z	4.54	65.96	15.67		150.0	
10528-AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.58	66.14	15.86	0.00	150.0	± 9.6 %
		Y	4.60	65.73	15.52		150.0	
		Z	4.56	65.98	15.70		150.0	
10529-AAA	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.58	66.14	15.86	0.00	150.0	± 9.6 %
		Y	4.60	65.73	15.52		150.0	
		Z	4.56	65.98	15.70		150.0	
10531-AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.57	66.24	15.87	0.00	150.0	± 9.6 %
		Y	4.59	65.83	15.53		150.0	
		Z	4.54	66.07	15.71		150.0	
10532-AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.43	66.09	15.80	0.00	150.0	± 9.6 %
		Y	4.45	65.67	15.46		150.0	
		Z	4.41	65.92	15.63		150.0	
10533-AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.59	66.19	15.85	0.00	150.0	± 9.6 %
		Y	4.60	65.76	15.51		150.0	
		Z	4.57	66.03	15.69		150.0	
10534-AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	5.12	66.27	15.94	0.00	150.0	± 9.6 %
		Y	5.13	65.96	15.65		150.0	
		Z	5.10	66.14	15.80		150.0	
10535-AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.19	66.45	16.01	0.00	150.0	± 9.6 %
		Y	5.19	66.11	15.71		150.0	
		Z	5.16	66.31	15.88		150.0	
10536-AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	5.05	66.39	15.97	0.00	150.0	± 9.6 %
		Y	5.06	66.05	15.67		150.0	
		Z	5.03	66.25	15.83		150.0	
10537-AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	5.11	66.36	15.96	0.00	150.0	± 9.6 %
		Y	5.12	66.04	15.66		150.0	
		Z	5.09	66.23	15.82		150.0	
10538-AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.20	66.39	16.01	0.00	150.0	± 9.6 %
		Y	5.23	66.10	15.74		150.0	
		Z	5.18	66.26	15.88		150.0	
10540-AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	5.14	66.41	16.03	0.00	150.0	± 9.6 %
		Y	5.14	66.07	15.73		150.0	
		Z	5.11	66.27	15.89		150.0	

10541-AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	5.11	66.27	15.96	0.00	150.0	± 9.6 %
		Y	5.12	65.96	15.68		150.0	
		Z	5.09	66.14	15.82		150.0	
10542-AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.26	66.35	16.01	0.00	150.0	± 9.6 %
		Y	5.28	66.05	15.74		150.0	
		Z	5.24	66.23	15.88		150.0	
10543-AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.34	66.39	16.05	0.00	150.0	± 9.6 %
		Y	5.36	66.09	15.78		150.0	
		Z	5.32	66.26	15.92		150.0	
10544-AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.43	66.40	15.94	0.00	150.0	± 9.6 %
		Y	5.43	66.12	15.68		150.0	
		Z	5.41	66.29	15.82		150.0	
10545-AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.62	66.80	16.09	0.00	150.0	± 9.6 %
		Y	5.62	66.50	15.82		150.0	
		Z	5.59	66.67	15.96		150.0	
10546-AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.49	66.61	16.01	0.00	150.0	± 9.6 %
		Y	5.51	66.35	15.75		150.0	
		Z	5.47	66.48	15.88		150.0	
10547-AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.56	66.64	16.02	0.00	150.0	± 9.6 %
		Y	5.59	66.41	15.78		150.0	
		Z	5.54	66.52	15.90		150.0	
10548-AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.79	67.52	16.43	0.00	150.0	± 9.6 %
		Y	5.83	67.28	16.18		150.0	
		Z	5.75	67.34	16.28		150.0	
10550-AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.52	66.62	16.02	0.00	150.0	± 9.6 %
		Y	5.53	66.33	15.76		150.0	
		Z	5.50	66.50	15.90		150.0	
10551-AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.53	66.66	16.01	0.00	150.0	± 9.6 %
		Y	5.54	66.38	15.74		150.0	
		Z	5.50	66.54	15.88		150.0	
10552-AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.44	66.47	15.92	0.00	150.0	± 9.6 %
		Y	5.45	66.18	15.65		150.0	
		Z	5.42	66.36	15.80		150.0	
10553-AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.53	66.51	15.97	0.00	150.0	± 9.6 %
		Y	5.54	66.25	15.72		150.0	
		Z	5.51	66.40	15.85		150.0	
10554-AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.84	66.77	16.03	0.00	150.0	± 9.6 %
		Y	5.83	66.51	15.79		150.0	
		Z	5.82	66.66	15.92		150.0	
10555-AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	5.96	67.06	16.16	0.00	150.0	± 9.6 %
		Y	5.96	66.80	15.91		150.0	
		Z	5.94	66.94	16.04		150.0	
10556-AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	5.98	67.11	16.18	0.00	150.0	± 9.6 %
		Y	5.98	66.84	15.92		150.0	
		Z	5.96	66.99	16.06		150.0	
10557-AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	5.95	67.02	16.15	0.00	150.0	± 9.6 %
		Y	5.96	66.77	15.91		150.0	
		Z	5.93	66.90	16.03		150.0	

10558-AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	6.00	67.17	16.24	0.00	150.0	± 9.6 %
		Y	6.01	66.93	16.01		150.0	
		Z	5.97	67.05	16.12		150.0	
10560-AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	5.99	67.04	16.21	0.00	150.0	± 9.6 %
		Y	6.01	66.80	15.98		150.0	
		Z	5.97	66.92	16.10		150.0	
10561-AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	5.92	67.00	16.23	0.00	150.0	± 9.6 %
		Y	5.92	66.75	15.99		150.0	
		Z	5.89	66.88	16.11		150.0	
10562-AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	6.03	67.37	16.42	0.00	150.0	± 9.6 %
		Y	6.05	67.15	16.19		150.0	
		Z	6.00	67.23	16.29		150.0	
10563-AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	6.25	67.63	16.51	0.00	150.0	± 9.6 %
		Y	6.38	67.69	16.41		150.0	
		Z	6.21	67.45	16.35		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.86	66.69	16.27	0.46	150.0	± 9.6 %
		Y	4.88	66.33	15.98		150.0	
		Z	4.84	66.56	16.13		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	5.08	67.12	16.58	0.46	150.0	± 9.6 %
		Y	5.12	66.81	16.31		150.0	
		Z	5.06	67.00	16.45		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	4.92	66.97	16.40	0.46	150.0	± 9.6 %
		Y	4.95	66.64	16.12		150.0	
		Z	4.90	66.84	16.26		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	4.94	67.33	16.73	0.46	150.0	± 9.6 %
		Y	4.97	67.01	16.46		150.0	
		Z	4.92	67.21	16.60		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.83	66.77	16.19	0.46	150.0	± 9.6 %
		Y	4.86	66.38	15.87		150.0	
		Z	4.81	66.62	16.04		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	4.90	67.41	16.79	0.46	150.0	± 9.6 %
		Y	4.92	67.06	16.50		150.0	
		Z	4.88	67.30	16.67		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	4.93	67.27	16.73	0.46	150.0	± 9.6 %
		Y	4.96	66.93	16.44		150.0	
		Z	4.91	67.15	16.60		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.19	64.39	15.42	0.46	130.0	± 9.6 %
		Y	1.15	62.99	14.19		130.0	
		Z	1.19	63.89	14.90		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.20	64.93	15.75	0.46	130.0	± 9.6 %
		Y	1.16	63.39	14.44		130.0	
		Z	1.20	64.36	15.20		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	1.89	82.87	21.90	0.46	130.0	± 9.6 %
		Y	0.91	69.55	15.77		130.0	
		Z	1.25	75.14	18.61		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	1.30	70.12	18.33	0.46	130.0	± 9.6 %
		Y	1.14	66.64	16.04		130.0	
		Z	1.25	68.62	17.33		130.0	

10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.65	66.50	16.34	0.46	130.0	± 9.6 %
		Y	4.67	66.15	16.04		130.0	
		Z	4.64	66.39	16.21		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.67	66.66	16.40	0.46	130.0	± 9.6 %
		Y	4.70	66.30	16.11		130.0	
		Z	4.66	66.55	16.27		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	4.87	66.95	16.57	0.46	130.0	± 9.6 %
		Y	4.91	66.62	16.29		130.0	
		Z	4.86	66.83	16.44		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.77	67.08	16.66	0.46	130.0	± 9.6 %
		Y	4.81	66.76	16.38		130.0	
		Z	4.76	66.98	16.53		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.54	66.42	16.01	0.46	130.0	± 9.6 %
		Y	4.57	66.06	15.69		130.0	
		Z	4.52	66.28	15.85		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.59	66.47	16.04	0.46	130.0	± 9.6 %
		Y	4.62	66.07	15.70		130.0	
		Z	4.57	66.32	15.88		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.67	67.12	16.60	0.46	130.0	± 9.6 %
		Y	4.70	66.77	16.30		130.0	
		Z	4.65	67.00	16.47		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.49	66.19	15.81	0.46	130.0	± 9.6 %
		Y	4.53	65.83	15.48		130.0	
		Z	4.47	66.05	15.65		130.0	
10583-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.65	66.50	16.34	0.46	130.0	± 9.6 %
		Y	4.67	66.15	16.04		130.0	
		Z	4.64	66.39	16.21		130.0	
10584-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.67	66.66	16.40	0.46	130.0	± 9.6 %
		Y	4.70	66.30	16.11		130.0	
		Z	4.66	66.55	16.27		130.0	
10585-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.87	66.95	16.57	0.46	130.0	± 9.6 %
		Y	4.91	66.62	16.29		130.0	
		Z	4.86	66.83	16.44		130.0	
10586-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.77	67.08	16.66	0.46	130.0	± 9.6 %
		Y	4.81	66.76	16.38		130.0	
		Z	4.76	66.98	16.53		130.0	
10587-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.54	66.42	16.01	0.46	130.0	± 9.6 %
		Y	4.57	66.06	15.69		130.0	
		Z	4.52	66.28	15.85		130.0	
10588-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.59	66.47	16.04	0.46	130.0	± 9.6 %
		Y	4.62	66.07	15.70		130.0	
		Z	4.57	66.32	15.88		130.0	
10589-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.67	67.12	16.60	0.46	130.0	± 9.6 %
		Y	4.70	66.77	16.30		130.0	
		Z	4.65	67.00	16.47		130.0	
10590-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.49	66.19	15.81	0.46	130.0	± 9.6 %
		Y	4.53	65.83	15.48		130.0	
		Z	4.47	66.05	15.65		130.0	

10591-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.80	66.56	16.44	0.46	130.0	± 9.6 %
		Y	4.83	66.24	16.16		130.0	
		Z	4.79	66.46	16.32		130.0	
10592-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	4.95	66.89	16.57	0.46	130.0	± 9.6 %
		Y	4.99	66.58	16.29		130.0	
		Z	4.94	66.79	16.45		130.0	
10593-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	4.87	66.81	16.46	0.46	130.0	± 9.6 %
		Y	4.91	66.49	16.18		130.0	
		Z	4.86	66.69	16.33		130.0	
10594-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	4.93	66.97	16.61	0.46	130.0	± 9.6 %
		Y	4.97	66.65	16.33		130.0	
		Z	4.91	66.86	16.48		130.0	
10595-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.89	66.92	16.51	0.46	130.0	± 9.6 %
		Y	4.93	66.60	16.22		130.0	
		Z	4.88	66.81	16.38		130.0	
10596-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.83	66.92	16.51	0.46	130.0	± 9.6 %
		Y	4.87	66.58	16.21		130.0	
		Z	4.82	66.80	16.37		130.0	
10597-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.78	66.83	16.40	0.46	130.0	± 9.6 %
		Y	4.82	66.49	16.10		130.0	
		Z	4.77	66.70	16.26		130.0	
10598-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.76	67.04	16.64	0.46	130.0	± 9.6 %
		Y	4.80	66.73	16.36		130.0	
		Z	4.75	66.92	16.51		130.0	
10599-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.47	67.12	16.66	0.46	130.0	± 9.6 %
		Y	5.50	66.85	16.41		130.0	
		Z	5.46	67.03	16.55		130.0	
10600-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.59	67.50	16.83	0.46	130.0	± 9.6 %
		Y	5.65	67.29	16.59		130.0	
		Z	5.57	67.38	16.70		130.0	
10601-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.49	67.27	16.73	0.46	130.0	± 9.6 %
		Y	5.53	67.02	16.48		130.0	
		Z	5.47	67.16	16.60		130.0	
10602-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.58	67.30	16.67	0.46	130.0	± 9.6 %
		Y	5.61	67.01	16.39		130.0	
		Z	5.57	67.20	16.54		130.0	
10603-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.66	67.60	16.94	0.46	130.0	± 9.6 %
		Y	5.71	67.36	16.69		130.0	
		Z	5.64	67.49	16.82		130.0	
10604-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.48	67.09	16.68	0.46	130.0	± 9.6 %
		Y	5.50	66.81	16.41		130.0	
		Z	5.47	67.01	16.57		130.0	
10605-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.58	67.41	16.84	0.46	130.0	± 9.6 %
		Y	5.60	67.10	16.55		130.0	
		Z	5.56	67.29	16.71		130.0	
10606-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.34	66.79	16.39	0.46	130.0	± 9.6 %
		Y	5.38	66.58	16.15		130.0	
		Z	5.32	66.67	16.26		130.0	

10607-AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.63	65.86	16.06	0.46	130.0	± 9.6 %
		Y	4.65	65.48	15.74		130.0	
		Z	4.62	65.75	15.92		130.0	
10608-AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.82	66.26	16.22	0.46	130.0	± 9.6 %
		Y	4.84	65.89	15.91		130.0	
		Z	4.80	66.14	16.09		130.0	
10609-AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.71	66.12	16.06	0.46	130.0	± 9.6 %
		Y	4.73	65.73	15.74		130.0	
		Z	4.69	65.98	15.92		130.0	
10610-AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.76	66.27	16.22	0.46	130.0	± 9.6 %
		Y	4.78	65.89	15.91		130.0	
		Z	4.74	66.14	16.08		130.0	
10611-AAA	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.67	66.08	16.07	0.46	130.0	± 9.6 %
		Y	4.70	65.71	15.76		130.0	
		Z	4.66	65.95	15.93		130.0	
10612-AAA	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.68	66.24	16.12	0.46	130.0	± 9.6 %
		Y	4.71	65.83	15.78		130.0	
		Z	4.66	66.09	15.97		130.0	
10613-AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.69	66.12	16.01	0.46	130.0	± 9.6 %
		Y	4.72	65.75	15.68		130.0	
		Z	4.67	65.98	15.86		130.0	
10614-AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.63	66.28	16.22	0.46	130.0	± 9.6 %
		Y	4.65	65.91	15.91		130.0	
		Z	4.61	66.15	16.08		130.0	
10615-AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.68	65.93	15.87	0.46	130.0	± 9.6 %
		Y	4.70	65.53	15.53		130.0	
		Z	4.66	65.79	15.72		130.0	
10616-AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.28	66.36	16.26	0.46	130.0	± 9.6 %
		Y	5.31	66.07	16.00		130.0	
		Z	5.27	66.25	16.14		130.0	
10617-AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.35	66.53	16.32	0.46	130.0	± 9.6 %
		Y	5.36	66.19	16.02		130.0	
		Z	5.33	66.41	16.19		130.0	
10618-AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.23	66.53	16.33	0.46	130.0	± 9.6 %
		Y	5.25	66.22	16.05		130.0	
		Z	5.22	66.41	16.21		130.0	
10619-AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.25	66.35	16.18	0.46	130.0	± 9.6 %
		Y	5.28	66.06	15.91		130.0	
		Z	5.23	66.23	16.06		130.0	
10620-AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.34	66.40	16.26	0.46	130.0	± 9.6 %
		Y	5.38	66.14	16.00		130.0	
		Z	5.33	66.28	16.13		130.0	
10621-AAA	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.34	66.50	16.42	0.46	130.0	± 9.6 %
		Y	5.37	66.24	16.17		130.0	
		Z	5.33	66.40	16.31		130.0	
10622-AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.35	66.66	16.50	0.46	130.0	± 9.6 %
		Y	5.37	66.35	16.22		130.0	
		Z	5.34	66.55	16.37		130.0	

10623-AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.23	66.21	16.15	0.46	130.0	± 9.6 %
		Y	5.25	65.91	15.87		130.0	
		Z	5.22	66.10	16.03		130.0	
10624-AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.42	66.41	16.31	0.46	130.0	± 9.6 %
		Y	5.45	66.13	16.05		130.0	
		Z	5.41	66.30	16.19		130.0	
10625-AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.78	67.35	16.83	0.46	130.0	± 9.6 %
		Y	5.83	67.13	16.60		130.0	
		Z	5.75	67.20	16.69		130.0	
10626-AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.58	66.43	16.23	0.46	130.0	± 9.6 %
		Y	5.59	66.16	15.97		130.0	
		Z	5.56	66.33	16.11		130.0	
10627-AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.81	66.97	16.46	0.46	130.0	± 9.6 %
		Y	5.82	66.69	16.19		130.0	
		Z	5.79	66.85	16.34		130.0	
10628-AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.61	66.53	16.18	0.46	130.0	± 9.6 %
		Y	5.63	66.28	15.92		130.0	
		Z	5.59	66.41	16.05		130.0	
10629-AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.69	66.58	16.20	0.46	130.0	± 9.6 %
		Y	5.72	66.37	15.96		130.0	
		Z	5.67	66.46	16.07		130.0	
10630-AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.10	68.01	16.91	0.46	130.0	± 9.6 %
		Y	6.16	67.84	16.70		130.0	
		Z	6.05	67.80	16.74		130.0	
10631-AAA	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.00	67.81	16.99	0.46	130.0	± 9.6 %
		Y	6.07	67.68	16.81		130.0	
		Z	5.98	67.68	16.87		130.0	
10632-AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.78	67.01	16.61	0.46	130.0	± 9.6 %
		Y	5.80	66.76	16.37		130.0	
		Z	5.76	66.92	16.51		130.0	
10633-AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.67	66.68	16.28	0.46	130.0	± 9.6 %
		Y	5.70	66.45	16.04		130.0	
		Z	5.66	66.58	16.17		130.0	
10634-AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.66	66.70	16.35	0.46	130.0	± 9.6 %
		Y	5.69	66.48	16.12		130.0	
		Z	5.64	66.60	16.24		130.0	
10635-AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.55	66.09	15.79	0.46	130.0	± 9.6 %
		Y	5.58	65.84	15.53		130.0	
		Z	5.53	65.97	15.66		130.0	
10636-AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	5.99	66.80	16.32	0.46	130.0	± 9.6 %
		Y	6.00	66.57	16.09		130.0	
		Z	5.98	66.70	16.21		130.0	
10637-AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.14	67.17	16.49	0.46	130.0	± 9.6 %
		Y	6.15	66.92	16.24		130.0	
		Z	6.12	67.06	16.37		130.0	
10638-AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.14	67.15	16.45	0.46	130.0	± 9.6 %
		Y	6.15	66.90	16.21		130.0	
		Z	6.13	67.05	16.34		130.0	

10639-AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.12	67.10	16.47	0.46	130.0	± 9.6 %
		Y	6.14	66.89	16.25		130.0	
		Z	6.11	67.00	16.36		130.0	
10640-AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.13	67.12	16.43	0.46	130.0	± 9.6 %
		Y	6.15	66.91	16.20		130.0	
		Z	6.11	67.01	16.31		130.0	
10641-AAB	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.17	67.03	16.40	0.46	130.0	± 9.6 %
		Y	6.18	66.76	16.14		130.0	
		Z	6.16	66.92	16.29		130.0	
10642-AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.21	67.26	16.68	0.46	130.0	± 9.6 %
		Y	6.24	67.07	16.47		130.0	
		Z	6.20	67.17	16.58		130.0	
10643-AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.05	66.96	16.43	0.46	130.0	± 9.6 %
		Y	6.06	66.72	16.19		130.0	
		Z	6.03	66.85	16.32		130.0	
10644-AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.21	67.45	16.70	0.46	130.0	± 9.6 %
		Y	6.25	67.28	16.49		130.0	
		Z	6.18	67.32	16.57		130.0	
10645-AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.54	68.03	16.95	0.46	130.0	± 9.6 %
		Y	6.68	68.10	16.85		130.0	
		Z	6.48	67.80	16.77		130.0	
10646-AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	59.57	139.48	46.58	9.30	60.0	± 9.6 %
		Y	18.39	106.30	36.04		60.0	
		Z	35.16	123.96	41.79		60.0	
10647-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	46.29	134.28	45.41	9.30	60.0	± 9.6 %
		Y	16.76	104.82	35.71		60.0	
		Z	29.85	120.92	41.10		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.66	62.71	10.27	0.00	150.0	± 9.6 %
		Y	0.66	61.73	9.72		150.0	
		Z	0.64	62.11	9.81		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.79	67.42	16.85	2.23	80.0	± 9.6 %
		Y	3.71	66.27	16.18		80.0	
		Z	3.81	67.18	16.62		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.30	66.70	16.95	2.23	80.0	± 9.6 %
		Y	4.27	65.95	16.44		80.0	
		Z	4.33	66.58	16.78		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.27	66.34	16.94	2.23	80.0	± 9.6 %
		Y	4.24	65.67	16.46		80.0	
		Z	4.31	66.25	16.79		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.33	66.33	16.98	2.23	80.0	± 9.6 %
		Y	4.30	65.69	16.50		80.0	
		Z	4.37	66.24	16.83		80.0	

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

APPENDIX F – DIPOLE CALIBRATION

NCL CALIBRATION LABORATORIES

Calibration File No: DC-1751

Project Number: 5850

Client.: Celltech

Address: 21 – 364 Lougheed Road, Kelowna, BC V1X 7R8 Canada

CERTIFICATE OF CALIBRATION

It is certified that the equipment identified below has been calibrated in the **NCL CALIBRATION LABORATORIES** by qualified personnel following recognized procedures and using transfer standards traceable to NRC/NIST.

Validation Dipole (Head & Body)

Manufacturer: APREL Laboratories

Part number: ALS-D-1620-S-2

Frequency: 1640 MHz

Serial No: 207-00102

Calibrated: 7th November 2017
Released on: 30th November 2017

This Calibration Certificate is Incomplete Unless Accompanied with the Calibration Results Summary

Released By: _____



Art Brennan, Quality Manager

NCL CALIBRATION LABORATORIES

Suite 102, 303 Terry Fox Dr.
Kanata, ONTARIO
CANADA K2K 3J1

Division of APREL Lab.
TEL: (613) 435-8300
FAX: (613)435-8306

Conditions

Dipole 207-00102 was a new calibration.

Ambient Temperature of the Laboratory: 21 °C +/- 0.5°C
Temperature of the Tissue: 21 °C +/- 0.5°C

Attestation

The below named signatories have conducted the calibration and review of the data which is presented in this calibration report.

We the undersigned attest that to the best of our knowledge the calibration of this system has been accurately conducted and that all information contained within this report has been reviewed for accuracy.



Art Brennan QM



Maryna Nesterova R&D Engineer

Primary Measurement Standards

Instrument	Serial Number	Cal due date
Tektronix USB Power Meter	11C940	April 13, 2019
Network Analyzer Anritsu 37347C	002106	Jan.26, 2019
Agilent Signal Generator	MY45094463	Dec. 11, 2017

Calibration Results Summary

The following results relate the Calibrated Dipole and should be used as a quick reference for the user.

Mechanical Dimensions

Length	Height	Diameter
80.0 mm	46.3 mm	3.6 mm

Tissue Validation

Tissue	Frequency	Dielectric constant, ϵ_r	Conductivity, σ [S/m]
Head	1640 MHz	40.63	1.32
Body	1640 MHz	54.75	1.45

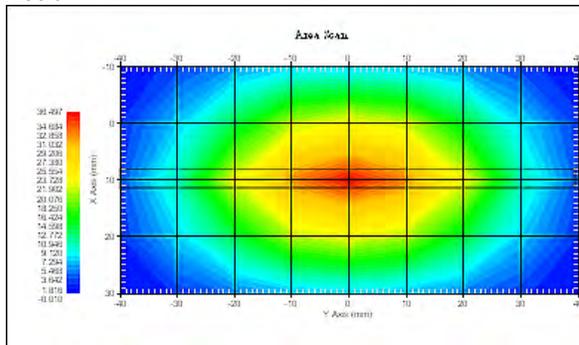
Electrical Specification

Tissue	Frequency	Return Loss	Impedance	SWR
Head	1640 MHz	-24.85 dB	47.73 Ω	1.15 U
Body	1640 MHz	-20.12 dB	46.55 Ω	1.21 U

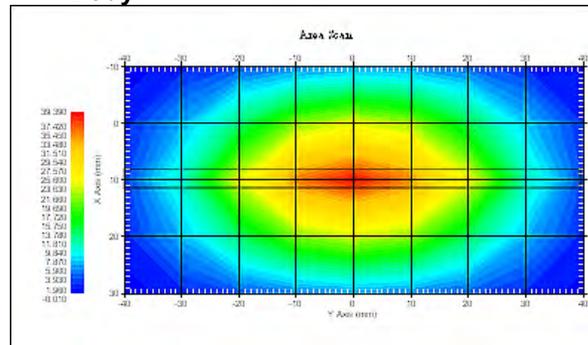
System Validation Results

Tissue	Frequency	1 Gram, W/kg	10 Gram, W/kg
Head	1640 MHz	32.49	17.19
Body	1640 MHz	33.29	18.15

Head



Body



Introduction

This Calibration Report has been produced in line with the SSI Dipole Calibration Procedure SSI-TP-018-ALSAS. The results contained within this report are for Validation Dipole 207-00102. The calibration routine consisted of a three-step process. Step 1 was a mechanical verification of the dipole to ensure that it meets the mechanical specifications. Step 2 was an Electrical Calibration for the Validation Dipole, where the SWR, Impedance, and the Return loss were assessed. Step 3 involved a System Validation using the ALSAS-10U, along with APREL E-020 30 MHz to 6 GHz E-Field Probe Serial Number 225.

References

- IEEE Standard 1528:2013
IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
- EN 62209-1:2006
Human Exposure to RF Fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to measure the Specific Absorption Rate (SAR) for hand-held mobile wireless devices
- IEC 62209-2:2010
Human exposure to RF fields from hand-held and body-mounted wireless devices - Human models, instrumentation, and procedures - Part 2: specific absorption rate (SAR) for wireless communication devices (30 MHz - 6 GHz)
- D22-012-Tissue dielectric tissue calibration procedure
- D28-002-Dipole procedure for validation of SAR system using a dipole
- IEEE 1309 Standard for Calibration of Electromagnetic Field Sensors and Probes, Excluding Antennas, from 9 kHz to 40 GHz

Conditions

Ambient Temperature of the Laboratory: 21 °C +/- 0.5°C

Temperature of the Tissue: 21 °C +/- 0.5°C

Dipole Calibration uncertainty

The calibration uncertainty for the dipole is made up of various parameters presented below.

Mechanical	1.00%
Positioning Error	1.22%
Electrical	1.20%
Tissue	2.50%
Dipole Validation	2.21%

Combined Standard Uncertainty **3.88% (7.76% K=2)**

The Following Graphs are the results as displayed on the Vector Network Analyzer.

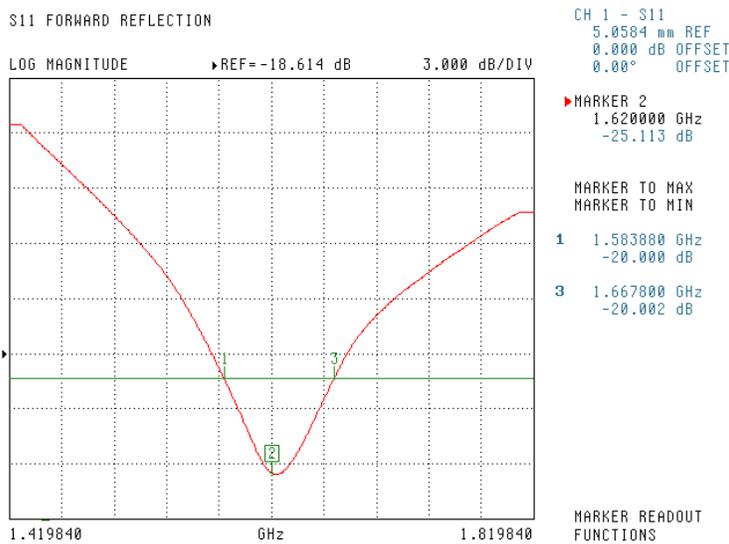
Electrical Calibration

Test	Head	Body
S11 R/L	-24.85 dB	-20.12 dB
Impedance	47.73 Ω	46.55 Ω
SWR	1.15 U	1.21 U

S11 Parameter Return Loss

Head

Frequency Range 1583.88 MHz to 1667.80 MHz



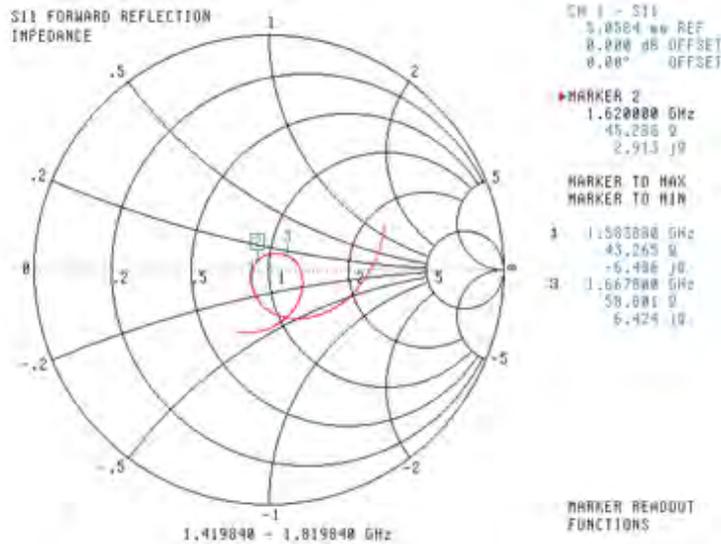
Body

Frequency Range 1611.40 MHz to 1640.28 MHz

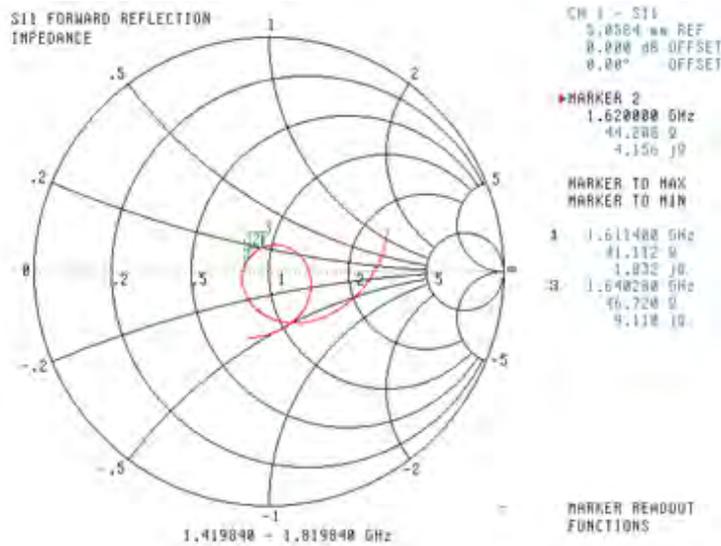


Smith Chart Dipole Impedance

Head

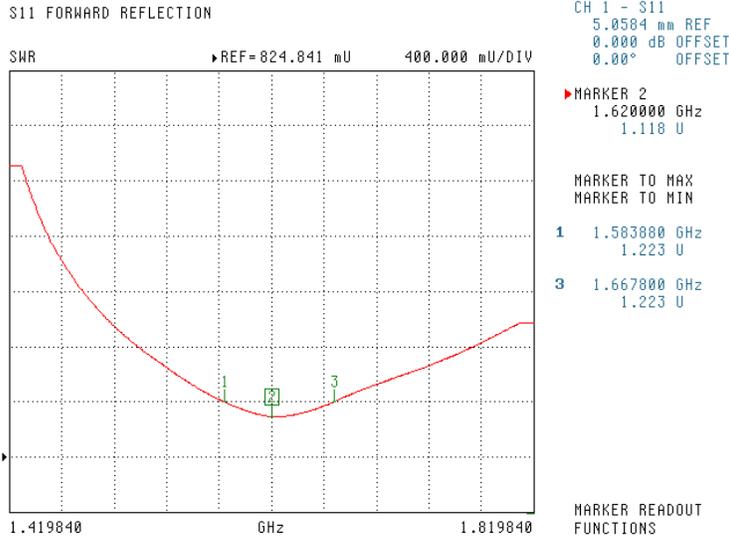


Body

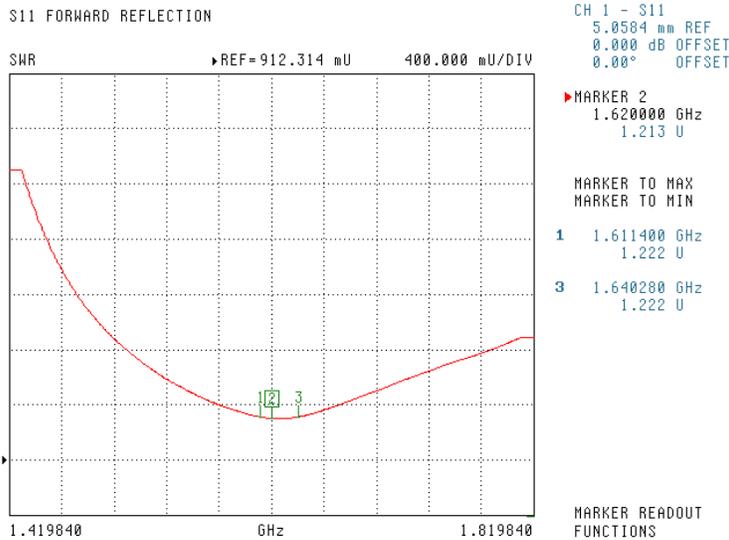


SWR

Head



Body



APPENDIX G - PHANTOM

Zeughausstrasse 43, 8004 Zurich, Switzerland
 Phone +41 44 245 9700, Fax +41 44 245 9779
 info@speag.com, http://www.speag.com

Certificate of Conformity / First Article Inspection

Item	Oval Flat Phantom ELI 5.0
Type No	QD OVA 002 A
Series No	1108 and higher
Manufacturer	Untersee Composites Knebelstrasse 8, CH-8268 Mannenbach, Switzerland

Tests

Complete tests were made on the prototype units QD OVA 001 A, pre-series units QD OVA 001 B as well as on some series units QD OVA 001 B. Some tests are made on all series units QD OVA 002 A.

Test	Requirement	Details	Units tested
Shape	Internal dimensions, depth and sagging are compatible with standards	Bottom elliptical 600 x 400 mm, Depth 190 mm, dimension compliant with [1] for $f > 375$ MHz	Prototypes
Material thickness	Bottom: 2.0mm +/- 0.2mm	dimension compliant with [3] for $f > 800$ MHz	all
Material parameters	rel. permittivity 2 – 5, loss tangent ≤ 0.05 , at $f \leq 6$ GHz	rel. permittivity 3.5 +/- 0.5 loss tangent ≤ 0.05	Material samples
Material resistivity	Compatibility with tissue simulating liquids .	Compatible with SPEAG liquids. **	Phantoms, Material sample
Sagging	Sagging of the flat section in tolerance when filled with tissue simulating liquid.	within tolerance for filling height up to 155 mm	Prototypes, samples

** Note: Compatibility restrictions apply certain liquid components mentioned in the standard, containing e.g. DGBE, DGMHE or Triton X-100. Observe technical note on material compatibility.

Standards

- [1] OET Bulletin 65, Supplement C, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 01-01
- [2] IEEE 1528-2003, "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques, December 2003
- [3] IEC 62209–1 ed1.0, "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", 2005-02-18
- [4] IEC 62209–2 ed1.0, "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 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)", 2010-03-30

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of **body-worn** SAR measurements and system performance checks as specified in [1 – 4] and further standards.

Date 25.7.2011

Signature / Stamp

s p e a g

Schmid & Partner Engineering AG
 Zeughausstrasse 43, 8004 Zurich, Switzerland
 Phone +41 44 245 9700, Fax +41 44 245 9779
 info@speag.com, http://www.speag.com