

Attachment 5. – Probe Calibration Data

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)**

Certificate No: **EX3-7370_Aug17**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:7370**

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: **August 22, 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-89 (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

	Name	Function	Signature
Calibrated by:	Jeton Kasrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: August 24, 2017			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization θ	θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.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).

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Probe EX3DV4

SN:7370

Manufactured: March 17, 2015
Calibrated: August 22, 2017

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7370

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.46	0.49	0.42	$\pm 10.1 \%$
DCP (mV) ^B	93.0	101.3	93.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^C (k=2)
0	CW	X	0.0	0.0	1.0	0.00	145.0	$\pm 3.5 \%$
		Y	0.0	0.0	1.0		133.1	
		Z	0.0	0.0	1.0		149.1	

Note: For details on UID parameters see Appendix.

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $\text{ms} \cdot \text{V}^{-2}$	T2 $\text{ms} \cdot \text{V}^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	49.10	380.9	38.14	7.263	0.335	5.068	0.000	0.536	1.008
Y	32.78	237.8	33.93	5.660	0.000	4.993	0.608	0.227	1.002
Z	42.09	328.2	38.42	4.732	0.428	5.056	0.000	0.436	1.009

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.

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7370

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^e	Conductivity (S/m) ^e	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth ^h (mm)	Unc (k=2)
600	42.7	0.88	10.44	10.44	10.44	0.04	1.15	± 13.3 %
750	41.9	0.89	10.25	10.25	10.25	0.54	0.80	± 12.0 %
835	41.5	0.90	10.02	10.02	10.02	0.48	0.80	± 12.0 %
900	41.5	0.97	9.72	9.72	9.72	0.41	0.91	± 12.0 %
1450	40.5	1.20	8.78	8.78	8.78	0.48	0.80	± 12.0 %
1750	40.1	1.37	8.67	8.67	8.67	0.39	0.88	± 12.0 %
1900	40.0	1.40	8.27	8.27	8.27	0.34	0.80	± 12.0 %
2450	39.2	1.80	7.45	7.45	7.45	0.37	0.80	± 12.0 %
2600	39.0	1.96	7.21	7.21	7.21	0.39	0.80	± 12.0 %
5250	35.9	4.71	5.13	5.13	5.13	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.70	4.70	4.70	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.94	4.94	4.94	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.

^e 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.

^h 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.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7370

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^E	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
600	56.1	0.95	10.80	10.80	10.80	0.08	1.15	± 13.3 %
750	55.5	0.96	10.30	10.30	10.30	0.59	0.81	± 12.0 %
835	55.2	0.97	10.14	10.14	10.14	0.49	0.80	± 12.0 %
1750	53.4	1.49	8.32	8.32	8.32	0.35	0.80	± 12.0 %
1900	53.3	1.52	7.91	7.91	7.91	0.41	0.80	± 12.0 %
2450	52.7	1.95	7.64	7.64	7.64	0.39	0.80	± 12.0 %
2600	52.5	2.16	7.51	7.51	7.51	0.33	0.80	± 12.0 %
5250	48.9	5.36	4.80	4.80	4.80	0.45	1.90	± 13.1 %
5600	48.5	5.77	4.13	4.13	4.13	0.45	1.90	± 13.1 %
5750	48.3	5.94	4.34	4.34	4.34	0.45	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, 126, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

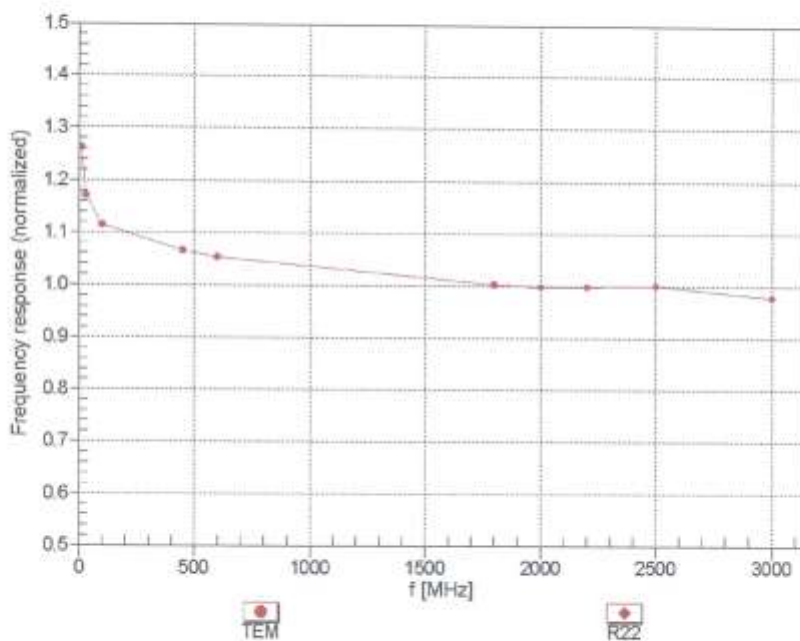
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty 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.

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

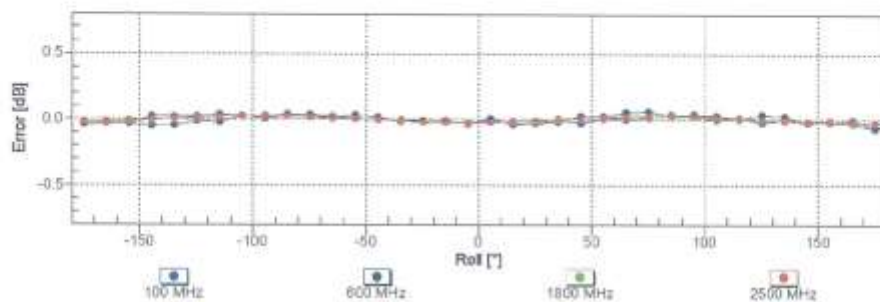
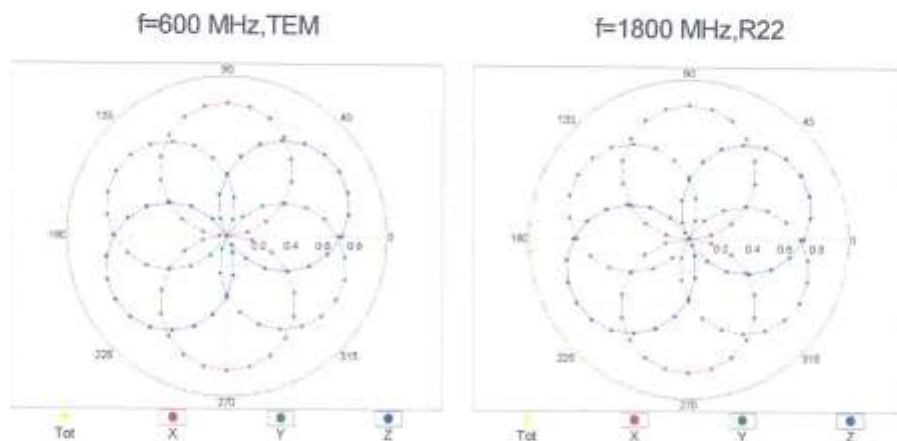


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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

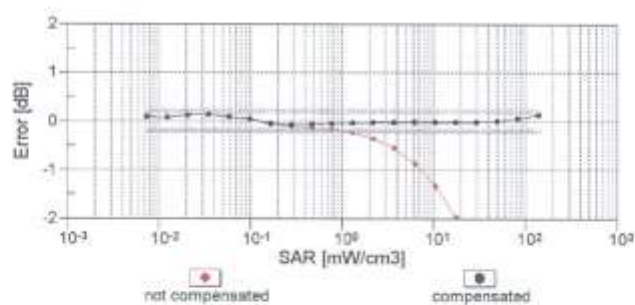
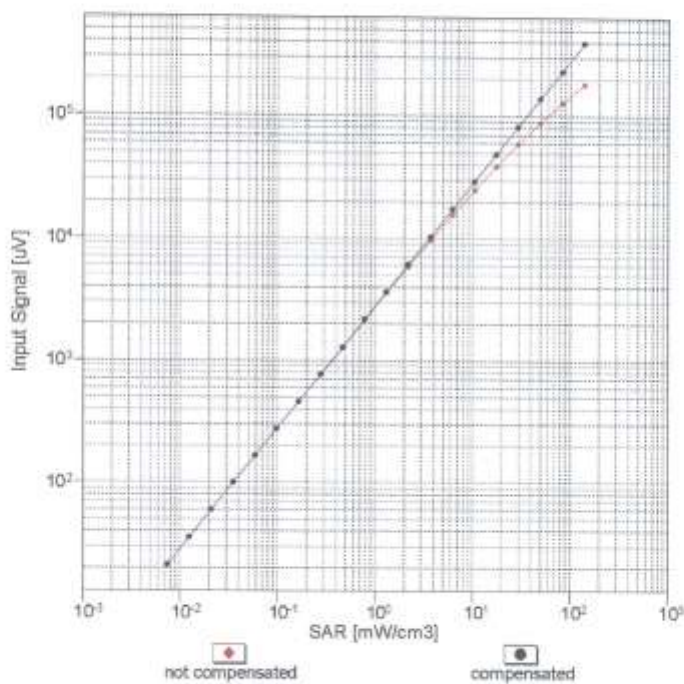


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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

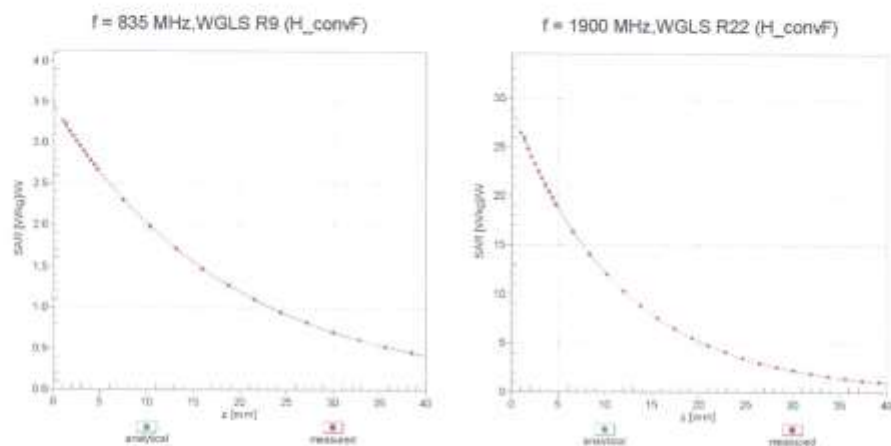


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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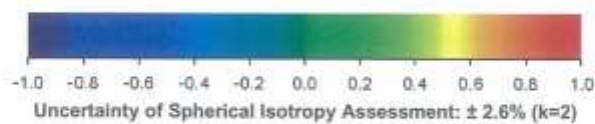
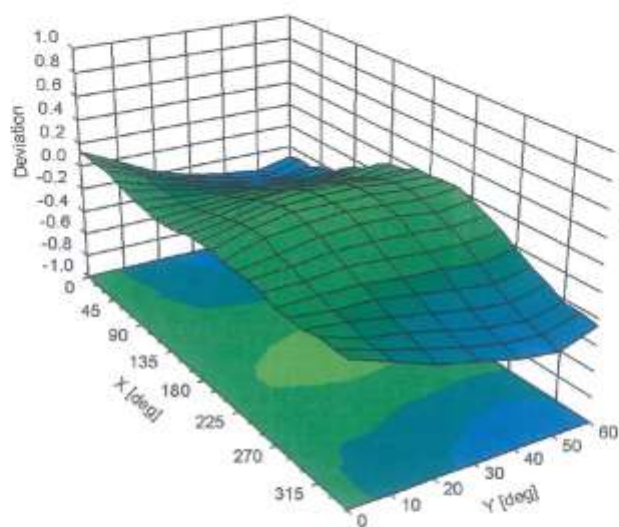
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Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$



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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7370

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	95,3
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

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Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB μ V	C	D dB	VR mV	Max Unc [±] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	145.0	± 3.5 %
		Y	0.00	0.00	1.00		133.1	
		Z	0.00	0.00	1.00		149.1	
10010- CAA	SAR Validation (Square, 100ms, 10ms)	X	1.56	62.42	7.76	10.00	20.0	± 9.6 %
		Y	1.35	61.46	6.75		20.0	
		Z	1.62	62.33	7.75		20.0	
10011- CAB	UMTS-FDD (WCDMA)	X	0.99	67.98	15.31	0.00	150.0	± 9.6 %
		Y	1.05	69.08	16.04		150.0	
		Z	0.89	66.53	14.26		150.0	
10012- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.06	63.55	15.25	0.41	150.0	± 9.6 %
		Y	1.11	63.96	15.24		150.0	
		Z	1.03	63.01	14.72		150.0	
10013- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	4.80	66.49	17.13	1.46	150.0	± 9.6 %
		Y	4.57	66.74	16.86		150.0	
		Z	4.70	66.44	17.01		150.0	
10021- DAC	GSM-FDD (TDMA, GMSK)	X	100.00	107.91	23.96	9.39	50.0	± 9.6 %
		Y	5.85	75.08	13.47		50.0	
		Z	100.00	107.13	23.67		50.0	
10023- DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	100.00	107.55	23.85	9.57	50.0	± 9.6 %
		Y	4.20	71.70	12.27		50.0	
		Z	94.75	106.19	23.44		50.0	
10024- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	100.00	106.90	22.34	6.56	60.0	± 9.6 %
		Y	100.00	99.22	18.56		60.0	
		Z	100.00	105.29	21.56		60.0	
10025- DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	3.74	68.59	25.61	12.57	50.0	± 9.6 %
		Y	5.65	83.53	33.39		50.0	
		Z	3.41	65.26	23.33		50.0	
10026- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	7.27	88.70	31.99	9.56	60.0	± 9.6 %
		Y	5.78	84.63	30.35		60.0	
		Z	6.05	84.03	29.97		60.0	
10027- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	106.23	21.23	4.80	80.0	± 9.6 %
		Y	100.00	99.78	18.13		80.0	
		Z	100.00	103.48	19.90		80.0	
10028- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	104.47	19.80	3.55	100.0	± 9.6 %
		Y	100.00	102.13	18.54		100.0	
		Z	100.00	99.87	17.69		100.0	
10029- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	4.60	78.17	26.63	7.80	80.0	± 9.6 %
		Y	3.74	74.45	24.69		80.0	
		Z	3.99	74.95	25.01		80.0	
10030- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	100.00	104.78	20.93	5.30	70.0	± 9.6 %
		Y	4.34	74.80	11.79		70.0	
		Z	100.00	102.33	19.74		70.0	
10031- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	0.22	60.00	4.19	1.88	100.0	± 9.6 %
		Y	100.00	94.28	14.43		100.0	
		Z	0.21	60.00	3.43		100.0	

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10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	41.00	60.20	1.23	1.17	100.0	± 9.6 %
		Y	100.00	104.31	17.62		100.0	
		Z	1.14	280.34	35.15		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	32.82	114.33	31.25	5.30	70.0	± 9.6 %
		Y	5.11	82.16	19.50		70.0	
		Z	9.11	92.32	24.20		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	3.24	80.51	19.56	1.88	100.0	± 9.6 %
		Y	1.77	71.32	14.13		100.0	
		Z	1.85	72.22	15.40		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	1.91	73.90	16.70	1.17	100.0	± 9.6 %
		Y	1.39	69.54	13.22		100.0	
		Z	1.28	68.50	13.42		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	100.00	132.50	35.66	5.30	70.0	± 9.6 %
		Y	6.93	86.53	21.00		70.0	
		Z	15.59	100.69	26.73		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	2.91	79.15	19.04	1.88	100.0	± 9.6 %
		Y	1.57	70.08	13.61		100.0	
		Z	1.69	71.26	14.98		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	1.96	74.55	17.09	1.17	100.0	± 9.6 %
		Y	1.40	69.88	13.51		100.0	
		Z	1.30	68.90	13.74		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	1.78	71.62	15.13	0.00	150.0	± 9.6 %
		Y	1.55	71.46	13.84		150.0	
		Z	1.20	67.29	12.21		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	100.00	103.32	21.08	7.78	50.0	± 9.6 %
		Y	2.05	66.97	9.66		50.0	
		Z	4.93	75.12	13.49		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.14	127.99	1.47	0.00	150.0	± 9.6 %
		Y	0.00	102.00	2.14		150.0	
		Z	0.20	127.87	0.18		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	11.62	80.33	17.78	13.80	25.0	± 9.6 %
		Y	3.43	65.29	10.93		25.0	
		Z	6.81	73.28	15.40		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	17.21	87.21	18.87	10.79	40.0	± 9.6 %
		Y	3.35	68.05	10.97		40.0	
		Z	7.16	76.83	15.56		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	95.22	122.43	32.54	9.03	50.0	± 9.6 %
		Y	18.34	93.15	22.67		50.0	
		Z	25.49	100.19	26.13		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	3.66	73.68	23.76	6.55	100.0	± 9.6 %
		Y	3.09	70.74	22.15		100.0	
		Z	3.24	71.21	22.54		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.08	64.56	15.88	0.61	110.0	± 9.6 %
		Y	1.11	64.59	15.60		110.0	
		Z	1.03	63.79	15.21		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	100.00	142.44	36.86	1.30	110.0	± 9.6 %
		Y	5.01	97.91	26.52		110.0	
		Z	8.73	104.75	27.61		110.0	

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10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	2.51	81.59	23.32	2.04	110.0	± 9.6 %
		Y	1.64	73.94	19.74		110.0	
		Z	1.81	75.84	20.76		110.0	
10062-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.62	66.52	16.57	0.49	100.0	± 9.6 %
		Y	4.41	66.84	16.39		100.0	
		Z	4.51	66.44	16.44		100.0	
10063-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.63	66.60	16.66	0.72	100.0	± 9.6 %
		Y	4.41	66.90	16.46		100.0	
		Z	4.52	66.52	16.53		100.0	
10064-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	4.93	66.89	16.91	0.86	100.0	± 9.6 %
		Y	4.64	67.06	16.63		100.0	
		Z	4.79	66.78	16.76		100.0	
10065-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	4.78	66.77	17.00	1.21	100.0	± 9.6 %
		Y	4.50	66.84	16.66		100.0	
		Z	4.65	66.64	16.84		100.0	
10066-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	4.79	66.78	17.16	1.46	100.0	± 9.6 %
		Y	4.49	66.79	16.77		100.0	
		Z	4.66	66.64	17.00		100.0	
10067-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	5.07	66.90	17.59	2.04	100.0	± 9.6 %
		Y	4.76	67.01	17.21		100.0	
		Z	4.95	66.86	17.46		100.0	
10068-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	5.12	66.95	17.81	2.55	100.0	± 9.6 %
		Y	4.78	66.88	17.34		100.0	
		Z	4.97	66.80	17.64		100.0	
10069-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.19	66.94	18.00	2.67	100.0	± 9.6 %
		Y	4.83	66.88	17.51		100.0	
		Z	5.05	66.84	17.84		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	4.88	66.55	17.42	1.99	100.0	± 9.6 %
		Y	4.65	66.75	17.11		100.0	
		Z	4.78	66.50	17.30		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	4.85	66.85	17.63	2.30	100.0	± 9.6 %
		Y	4.58	66.91	17.25		100.0	
		Z	4.74	66.76	17.49		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	4.89	66.96	17.94	2.83	100.0	± 9.6 %
		Y	4.62	67.03	17.54		100.0	
		Z	4.79	66.88	17.60		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	4.86	66.80	18.06	3.30	100.0	± 9.6 %
		Y	4.62	66.95	17.67		100.0	
		Z	4.77	66.75	17.93		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	4.88	66.88	18.36	3.82	90.0	± 9.6 %
		Y	4.62	66.89	17.86		90.0	
		Z	4.78	66.78	18.19		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	4.88	66.61	18.45	4.15	90.0	± 9.6 %
		Y	4.65	66.75	18.03		90.0	
		Z	4.80	66.59	18.32		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	4.90	66.65	18.54	4.30	90.0	± 9.6 %
		Y	4.68	66.83	18.15		90.0	
		Z	4.83	66.66	18.42		90.0	

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10081-CAB	CDMA2000 (1xRTT, RC3)	X	0.73	65.12	11.46	0.00	150.0	± 9.6 %
		Y	0.67	65.23	10.64		150.0	
		Z	0.56	62.52	9.11		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	0.62	60.00	3.10	4.77	80.0	± 9.6 %
		Y	5.83	60.68	1.91		80.0	
		Z	5.32	61.77	2.59		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	100.00	107.04	22.41	6.56	60.0	± 9.6 %
		Y	100.00	99.21	18.57		60.0	
		Z	100.00	105.43	21.63		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	1.78	67.86	15.72	0.00	150.0	± 9.6 %
		Y	1.89	69.69	16.21		150.0	
		Z	1.69	67.29	15.09		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.74	67.81	15.68	0.00	150.0	± 9.6 %
		Y	1.85	69.64	16.20		150.0	
		Z	1.65	67.23	15.06		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	7.33	88.86	32.05	9.56	60.0	± 9.6 %
		Y	5.83	84.81	30.41		60.0	
		Z	6.09	84.17	30.02		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	3.11	70.42	16.72	0.00	150.0	± 9.6 %
		Y	3.01	70.83	17.06		150.0	
		Z	2.92	69.60	16.30		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.20	67.46	15.96	0.00	150.0	± 9.6 %
		Y	3.09	67.76	16.04		150.0	
		Z	3.07	67.04	15.69		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.30	67.43	16.06	0.00	150.0	± 9.6 %
		Y	3.19	67.76	16.13		150.0	
		Z	3.18	67.06	15.81		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	5.53	74.71	20.37	3.98	65.0	± 9.6 %
		Y	4.96	73.86	19.70		65.0	
		Z	5.06	73.47	19.81		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	5.44	72.15	20.08	3.98	65.0	± 9.6 %
		Y	4.89	71.17	19.20		65.0	
		Z	5.05	71.07	19.49		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	5.18	70.94	19.81	3.98	65.0	± 9.6 %
		Y	4.80	70.57	19.23		65.0	
		Z	4.87	70.09	19.34		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	2.71	69.73	16.59	0.00	150.0	± 9.6 %
		Y	2.59	70.20	16.91		150.0	
		Z	2.53	68.96	16.15		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	2.85	67.35	15.87	0.00	150.0	± 9.6 %
		Y	2.74	67.84	15.94		150.0	
		Z	2.72	66.94	15.54		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	2.19	68.90	16.20	0.00	150.0	± 9.6 %
		Y	2.08	69.59	16.45		150.0	
		Z	2.02	68.10	15.63		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.58	68.31	16.20	0.00	150.0	± 9.6 %
		Y	2.54	69.49	16.34		150.0	
		Z	2.43	67.88	15.72		150.0	

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10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	2.98	67.34	15.93	0.00	150.0	± 9.6 %
		Y	2.87	67.91	16.02		150.0	
		Z	2.85	66.99	15.63		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.73	68.45	16.34	0.00	150.0	± 9.6 %
		Y	2.68	69.65	16.46		150.0	
		Z	2.59	68.09	15.89		150.0	
10114-CAB	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	5.10	67.12	16.51	0.00	150.0	± 9.6 %
		Y	4.90	67.30	16.44		150.0	
		Z	5.00	67.00	16.42		150.0	
10115-CAB	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.40	67.27	16.60	0.00	150.0	± 9.6 %
		Y	5.13	67.32	16.45		150.0	
		Z	5.27	67.10	16.48		150.0	
10116-CAB	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.20	67.33	16.54	0.00	150.0	± 9.6 %
		Y	4.97	67.46	16.45		150.0	
		Z	5.09	67.19	16.45		150.0	
10117-CAB	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	5.05	66.95	16.45	0.00	150.0	± 9.6 %
		Y	4.89	67.23	16.42		150.0	
		Z	4.97	66.86	16.37		150.0	
10118-CAB	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.50	67.53	16.74	0.00	150.0	± 9.6 %
		Y	5.19	67.48	16.53		150.0	
		Z	5.35	67.32	16.61		150.0	
10119-CAB	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	5.18	67.28	16.53	0.00	150.0	± 9.6 %
		Y	4.97	67.47	16.46		150.0	
		Z	5.08	67.17	16.45		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.33	67.42	15.97	0.00	150.0	± 9.6 %
		Y	3.21	67.79	16.05		150.0	
		Z	3.21	67.06	15.72		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.46	67.52	16.15	0.00	150.0	± 9.6 %
		Y	3.34	67.96	16.24		150.0	
		Z	3.34	67.21	15.92		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	1.96	68.91	15.82	0.00	150.0	± 9.6 %
		Y	1.87	69.82	15.85		150.0	
		Z	1.77	67.88	14.96		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.44	69.05	15.83	0.00	150.0	± 9.6 %
		Y	2.39	70.24	15.57		150.0	
		Z	2.23	68.18	14.93		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	2.18	66.46	14.05	0.00	150.0	± 9.6 %
		Y	1.94	66.43	13.16		150.0	
		Z	1.97	65.59	13.11		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	1.09	64.16	10.93	0.00	150.0	± 9.6 %
		Y	0.73	61.36	7.83		150.0	
		Z	0.83	61.61	8.53		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	1.76	65.34	11.16	0.00	150.0	± 9.6 %
		Y	0.85	60.00	5.99		150.0	
		Z	1.26	62.31	8.66		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	2.05	67.22	12.22	0.00	150.0	± 9.6 %
		Y	0.87	60.06	6.09		150.0	
		Z	1.36	63.09	9.20		150.0	

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10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	2.86	67.42	15.92	0.00	150.0	± 9.6 %
		Y	2.75	67.91	16.00		150.0	
		Z	2.73	67.01	15.59		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	2.98	67.40	15.98	0.00	150.0	± 9.6 %
		Y	2.88	67.98	16.07		150.0	
		Z	2.86	67.05	15.67		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	5.75	77.22	21.54	3.98	65.0	± 9.6 %
		Y	5.00	75.93	20.58		65.0	
		Z	5.14	75.67	20.82		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	4.99	72.12	19.77	3.98	65.0	± 9.6 %
		Y	4.41	71.00	18.67		65.0	
		Z	4.58	70.96	19.09		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	5.32	73.07	20.58	3.98	65.0	± 9.6 %
		Y	4.76	72.14	19.56		65.0	
		Z	4.92	72.00	19.96		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.25	69.39	16.50	0.00	150.0	± 9.6 %
		Y	2.13	70.02	16.70		150.0	
		Z	2.06	68.53	15.90		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.58	68.32	16.21	0.00	150.0	± 9.6 %
		Y	2.54	69.54	16.38		150.0	
		Z	2.44	67.91	15.74		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	1.81	69.02	15.57	0.00	150.0	± 9.6 %
		Y	1.89	69.68	15.29		150.0	
		Z	1.58	67.60	14.41		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	2.01	67.01	14.03	0.00	150.0	± 9.6 %
		Y	1.75	66.66	12.83		150.0	
		Z	1.77	65.74	12.79		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.74	68.52	16.39	0.00	150.0	± 9.6 %
		Y	2.69	69.75	16.53		150.0	
		Z	2.60	68.17	15.95		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	2.12	67.49	14.34	0.00	150.0	± 9.6 %
		Y	1.84	67.04	13.05		150.0	
		Z	1.85	66.10	13.03		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	2.74	68.91	16.44	0.00	150.0	± 9.6 %
		Y	2.61	69.36	16.60		150.0	
		Z	2.60	68.46	16.10		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	2.88	67.35	15.91	0.00	150.0	± 9.6 %
		Y	2.77	67.99	15.95		150.0	
		Z	2.75	67.00	15.56		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	2.99	67.49	16.02	0.00	150.0	± 9.6 %
		Y	2.88	68.23	16.10		150.0	
		Z	2.86	67.20	15.71		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	3.50	69.48	19.22	3.01	150.0	± 9.6 %
		Y	3.01	68.49	18.51		150.0	
		Z	3.30	69.22	19.17		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	4.25	72.12	19.54	3.01	150.0	± 9.6 %
		Y	3.49	71.14	18.87		150.0	
		Z	3.90	71.75	19.44		150.0	

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10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	4.79	74.70	21.04	3.01	150.0	± 9.6 %
		Y	3.94	73.81	20.46		150.0	
		Z	4.44	74.66	21.14		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	2.86	68.69	18.91	3.01	150.0	± 9.6 %
		Y	2.43	66.88	17.77		150.0	
		Z	2.60	67.58	18.49		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	3.90	74.61	21.29	3.01	150.0	± 9.6 %
		Y	3.05	71.99	19.96		150.0	
		Z	3.37	73.11	20.84		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	3.15	70.12	18.27	3.01	150.0	± 9.6 %
		Y	2.53	68.23	17.19		150.0	
		Z	2.75	68.76	17.77		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	6.41	88.23	28.08	6.02	65.0	± 9.6 %
		Y	3.14	76.47	23.02		65.0	
		Z	4.50	82.43	26.11		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	14.02	99.12	29.58	6.02	65.0	± 9.6 %
		Y	4.54	81.47	22.89		65.0	
		Z	8.57	92.06	27.56		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	10.59	92.63	26.90	6.02	65.0	± 9.6 %
		Y	3.79	77.85	20.94		65.0	
		Z	5.79	84.08	24.24		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	2.82	68.36	18.64	3.01	150.0	± 9.6 %
		Y	2.41	66.63	17.54		150.0	
		Z	2.57	67.27	18.22		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	3.90	74.64	21.30	3.01	150.0	± 9.6 %
		Y	3.05	72.01	19.97		150.0	
		Z	3.38	73.13	20.85		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	2.84	68.52	18.74	3.01	150.0	± 9.6 %
		Y	2.42	66.73	17.61		150.0	
		Z	2.59	67.42	18.31		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	3.86	74.38	21.16	3.01	150.0	± 9.6 %
		Y	3.03	71.88	19.90		150.0	
		Z	3.35	72.92	20.73		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	3.48	72.20	19.62	3.01	150.0	± 9.6 %
		Y	2.76	70.01	18.45		150.0	
		Z	3.02	70.78	19.15		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	3.14	70.04	18.22	3.01	150.0	± 9.6 %
		Y	2.53	68.20	17.16		150.0	
		Z	2.74	68.70	17.73		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	2.84	68.50	18.73	3.01	150.0	± 9.6 %
		Y	2.42	66.72	17.60		150.0	
		Z	2.58	67.40	18.31		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	3.85	74.36	21.15	3.01	150.0	± 9.6 %
		Y	3.03	71.86	19.88		150.0	
		Z	3.34	72.90	20.72		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	3.14	70.02	18.21	3.01	150.0	± 9.6 %
		Y	2.52	68.18	17.15		150.0	
		Z	2.74	68.68	17.71		150.0	

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10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	2.85	68.55	18.76	3.01	150.0	± 9.6 %
		Y	2.43	66.76	17.62		150.0	
		Z	2.59	67.44	18.33		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	3.87	74.44	21.19	3.01	150.0	± 9.6 %
		Y	3.04	71.93	19.92		150.0	
		Z	3.36	72.97	20.76		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	3.15	70.09	18.24	3.01	150.0	± 9.6 %
		Y	2.53	68.24	17.18		150.0	
		Z	2.75	68.74	17.75		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	2.86	68.60	18.82	3.01	150.0	± 9.6 %
		Y	2.44	66.83	17.70		150.0	
		Z	2.60	67.51	18.41		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	4.01	75.18	21.61	3.01	150.0	± 9.6 %
		Y	3.12	72.46	20.26		150.0	
		Z	3.47	73.67	21.18		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	3.23	70.53	18.54	3.01	150.0	± 9.6 %
		Y	2.58	68.59	17.44		150.0	
		Z	2.81	69.16	18.04		150.0	
10193-CAB	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.47	66.48	16.19	0.00	150.0	± 9.6 %
		Y	4.32	67.05	16.18		150.0	
		Z	4.37	66.42	16.06		150.0	
10194-CAB	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.65	66.80	16.31	0.00	150.0	± 9.6 %
		Y	4.45	67.26	16.30		150.0	
		Z	4.53	66.71	16.19		150.0	
10195-CAB	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.69	66.83	16.33	0.00	150.0	± 9.6 %
		Y	4.48	67.27	16.31		150.0	
		Z	4.57	66.74	16.21		150.0	
10196-CAB	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.48	66.55	16.21	0.00	150.0	± 9.6 %
		Y	4.30	67.04	16.16		150.0	
		Z	4.36	66.46	16.06		150.0	
10197-CAB	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.66	66.82	16.33	0.00	150.0	± 9.6 %
		Y	4.46	67.26	16.31		150.0	
		Z	4.54	66.72	16.20		150.0	
10198-CAB	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.69	66.85	16.34	0.00	150.0	± 9.6 %
		Y	4.48	67.26	16.31		150.0	
		Z	4.56	66.75	16.22		150.0	
10219-CAB	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.43	66.56	16.17	0.00	150.0	± 9.6 %
		Y	4.26	67.09	16.14		150.0	
		Z	4.31	66.48	16.02		150.0	
10220-CAB	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.66	66.80	16.32	0.00	150.0	± 9.6 %
		Y	4.45	67.22	16.29		150.0	
		Z	4.53	66.69	16.19		150.0	
10221-CAB	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.70	66.78	16.33	0.00	150.0	± 9.6 %
		Y	4.49	67.21	16.30		150.0	
		Z	4.58	66.68	16.21		150.0	
10222-CAB	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	5.03	66.96	16.44	0.00	150.0	± 9.6 %
		Y	4.86	67.22	16.41		150.0	
		Z	4.94	66.85	16.36		150.0	

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10223-CAB	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.35	67.20	16.59	0.00	150.0	± 9.6 %
		Y	5.10	67.35	16.48		150.0	
		Z	5.24	67.12	16.52		150.0	
10224-CAB	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	5.08	67.07	16.42	0.00	150.0	± 9.6 %
		Y	4.90	67.35	16.40		150.0	
		Z	4.98	66.95	16.34		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	2.74	66.05	15.33	0.00	150.0	± 9.6 %
		Y	2.63	66.72	15.04		150.0	
		Z	2.62	65.79	14.89		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	15.39	100.99	30.26	6.02	65.0	± 9.6 %
		Y	4.80	82.49	23.36		65.0	
		Z	9.30	93.70	28.21		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	14.79	98.48	28.78	6.02	65.0	± 9.6 %
		Y	4.67	81.06	22.12		65.0	
		Z	9.62	92.82	27.19		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	7.81	92.74	29.77	6.02	65.0	± 9.6 %
		Y	3.36	77.94	23.65		65.0	
		Z	5.16	85.66	27.45		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	14.15	99.25	29.63	6.02	65.0	± 9.6 %
		Y	4.58	81.56	22.93		65.0	
		Z	8.65	92.19	27.61		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	13.54	96.81	28.18	6.02	65.0	± 9.6 %
		Y	4.41	80.09	21.69		65.0	
		Z	8.83	91.23	26.59		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	7.41	91.60	29.29	6.02	65.0	± 9.6 %
		Y	3.26	77.31	23.31		65.0	
		Z	4.95	84.71	27.00		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	14.12	99.23	29.62	6.02	65.0	± 9.6 %
		Y	4.57	81.55	22.93		65.0	
		Z	8.62	92.16	27.60		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	13.50	96.78	28.17	6.02	65.0	± 9.6 %
		Y	4.40	80.06	21.69		65.0	
		Z	8.80	91.19	26.57		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	7.12	90.62	28.83	6.02	65.0	± 9.6 %
		Y	3.19	76.80	22.98		65.0	
		Z	4.79	83.94	26.59		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	14.14	99.28	29.64	6.02	65.0	± 9.6 %
		Y	4.57	81.56	22.93		65.0	
		Z	8.63	92.21	27.62		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	13.72	97.01	28.24	6.02	65.0	± 9.6 %
		Y	4.45	80.20	21.73		65.0	
		Z	8.93	91.40	26.63		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	7.43	91.68	29.32	6.02	65.0	± 9.6 %
		Y	3.26	77.32	23.32		65.0	
		Z	4.95	84.74	27.02		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	14.08	99.20	29.62	6.02	65.0	± 9.6 %
		Y	4.55	81.52	22.91		65.0	
		Z	8.60	92.13	27.59		65.0	

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10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	13.45	96.74	28.16	6.02	65.0	± 9.6 %
		Y	4.38	80.02	21.67		65.0	
		Z	8.77	91.14	26.56		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	7.40	91.62	29.30	6.02	65.0	± 9.6 %
		Y	3.25	77.30	23.31		65.0	
		Z	4.93	84.70	27.00		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	6.94	78.83	24.76	6.98	65.0	± 9.6 %
		Y	5.76	77.91	23.85		65.0	
		Z	6.36	78.18	24.48		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	6.44	77.25	23.98	6.98	65.0	± 9.6 %
		Y	5.48	77.01	23.41		65.0	
		Z	5.95	76.81	23.80		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	5.25	73.87	23.40	6.98	65.0	± 9.6 %
		Y	4.61	73.74	22.90		65.0	
		Z	4.95	73.50	23.22		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	5.19	75.34	18.62	3.98	65.0	± 9.6 %
		Y	2.62	65.88	11.93		65.0	
		Z	4.09	71.93	16.48		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	5.03	74.56	18.22	3.98	65.0	± 9.6 %
		Y	2.59	65.50	11.68		65.0	
		Z	3.96	71.16	16.07		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	4.97	78.76	20.19	3.98	65.0	± 9.6 %
		Y	2.68	69.76	14.61		65.0	
		Z	3.57	73.65	17.42		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	4.28	72.81	18.44	3.98	65.0	± 9.6 %
		Y	3.18	68.80	14.95		65.0	
		Z	3.66	70.48	16.79		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	4.27	72.16	18.12	3.98	65.0	± 9.6 %
		Y	3.15	68.19	14.65		65.0	
		Z	3.66	69.92	16.50		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	6.04	82.09	22.49	3.98	65.0	± 9.6 %
		Y	4.06	76.03	18.76		65.0	
		Z	4.77	78.33	20.57		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	5.01	74.76	21.00	3.98	65.0	± 9.6 %
		Y	4.32	73.11	19.32		65.0	
		Z	4.54	73.37	20.11		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	4.80	72.58	19.62	3.98	65.0	± 9.6 %
		Y	4.08	70.91	17.89		65.0	
		Z	4.35	71.25	18.71		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	5.92	80.47	22.87	3.98	65.0	± 9.6 %
		Y	4.84	78.02	21.17		65.0	
		Z	5.10	78.26	21.80		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	4.88	71.55	19.50	3.98	65.0	± 9.6 %
		Y	4.36	70.69	18.40		65.0	
		Z	4.52	70.54	18.84		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	5.19	72.45	20.23	3.98	65.0	± 9.6 %
		Y	4.65	71.64	19.15		65.0	
		Z	4.82	71.48	19.60		65.0	

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10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	5.41	76.29	21.39	3.98	65.0	± 9.6 %
		Y	4.76	75.22	20.42		65.0	
		Z	4.89	74.91	20.69		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	3.82	70.64	15.43	3.98	65.0	± 9.6 %
		Y	1.87	62.35	8.74		65.0	
		Z	2.84	66.72	12.76		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	3.69	69.74	14.90	3.98	65.0	± 9.6 %
		Y	1.86	62.06	8.48		65.0	
		Z	2.76	66.03	12.30		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	3.48	72.93	16.85	3.98	65.0	± 9.6 %
		Y	1.77	64.22	10.61		65.0	
		Z	2.41	67.70	13.62		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	4.58	73.61	19.39	3.98	65.0	± 9.6 %
		Y	3.64	70.63	16.65		65.0	
		Z	4.03	71.72	18.07		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	4.61	73.30	19.26	3.98	65.0	± 9.6 %
		Y	3.67	70.36	16.51		65.0	
		Z	4.06	71.44	17.94		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	5.58	80.22	22.22	3.98	65.0	± 9.6 %
		Y	4.23	76.26	19.49		65.0	
		Z	4.65	77.42	20.73		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	5.00	74.71	20.95	3.98	65.0	± 9.6 %
		Y	4.30	73.03	19.26		65.0	
		Z	4.53	73.30	20.05		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	4.79	72.56	19.61	3.98	65.0	± 9.6 %
		Y	4.07	70.88	17.88		65.0	
		Z	4.34	71.22	18.70		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	5.85	80.24	22.76	3.98	65.0	± 9.6 %
		Y	4.79	77.80	21.06		65.0	
		Z	5.04	78.04	21.69		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	4.98	72.12	19.78	3.98	65.0	± 9.6 %
		Y	4.40	71.01	18.67		65.0	
		Z	4.58	70.96	19.09		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	5.32	73.05	20.57	3.98	65.0	± 9.6 %
		Y	4.75	72.12	19.55		65.0	
		Z	4.92	71.99	19.95		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	5.74	77.17	21.52	3.98	65.0	± 9.6 %
		Y	4.99	75.89	20.56		65.0	
		Z	5.13	75.62	20.80		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	5.59	71.98	20.09	3.98	65.0	± 9.6 %
		Y	5.07	71.24	19.31		65.0	
		Z	5.22	71.02	19.56		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	5.57	71.54	19.94	3.98	65.0	± 9.6 %
		Y	5.10	70.94	19.20		65.0	
		Z	5.23	70.65	19.43		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	5.64	74.24	20.40	3.98	65.0	± 9.6 %
		Y	5.10	73.57	19.76		65.0	
		Z	5.20	73.15	19.88		65.0	

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10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP RelB.10)	X	2.53	66.41	15.22	0.00	150.0	± 9.6 %
		Y	2.50	67.49	15.20		150.0	
		Z	2.43	66.20	14.81		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP RelB.4)	X	1.57	68.17	15.56	0.00	150.0	± 9.6 %
		Y	1.60	69.37	16.03		150.0	
		Z	1.44	67.21	14.81		150.0	
10277-CAA	PHS (QPSK)	X	1.72	60.38	5.98	9.03	50.0	± 9.6 %
		Y	1.23	58.52	3.64		50.0	
		Z	1.65	59.86	5.41		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	4.27	71.99	14.94	9.03	50.0	± 9.6 %
		Y	2.22	63.37	8.91		50.0	
		Z	3.13	67.11	12.09		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	4.46	72.45	15.20	9.03	50.0	± 9.6 %
		Y	2.28	63.58	9.10		50.0	
		Z	3.24	67.43	12.31		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	1.33	67.97	13.15	0.00	150.0	± 9.6 %
		Y	1.01	66.40	11.31		150.0	
		Z	0.97	64.73	10.69		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	0.72	64.89	11.32	0.00	150.0	± 9.6 %
		Y	0.65	64.97	10.48		150.0	
		Z	0.55	62.37	9.01		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	1.00	69.84	14.04	0.00	150.0	± 9.6 %
		Y	1.36	74.09	14.84		150.0	
		Z	0.67	65.15	10.80		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	2.24	80.69	18.82	0.00	150.0	± 9.6 %
		Y	53.95	118.17	27.52		150.0	
		Z	1.12	71.22	14.04		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	11.11	89.36	25.23	9.03	50.0	± 9.6 %
		Y	12.57	87.70	22.21		50.0	
		Z	13.00	89.87	24.38		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	2.73	69.85	16.66	0.00	150.0	± 9.6 %
		Y	2.61	70.33	16.98		150.0	
		Z	2.54	69.07	16.22		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	1.48	67.36	13.66	0.00	150.0	± 9.6 %
		Y	1.17	65.87	11.81		150.0	
		Z	1.18	64.96	11.69		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	2.51	69.38	14.16	0.00	150.0	± 9.6 %
		Y	1.28	62.79	8.91		150.0	
		Z	1.92	66.57	12.12		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	1.83	64.56	11.08	0.00	150.0	± 9.6 %
		Y	1.06	60.68	7.05		150.0	
		Z	1.47	62.77	9.42		150.0	
10301-AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	4.68	65.30	17.44	4.17	50.0	± 9.6 %
		Y	4.09	64.51	16.66		50.0	
		Z	4.42	64.78	17.00		50.0	
10302-AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	5.09	65.64	18.00	4.96	50.0	± 9.6 %
		Y	4.62	65.43	17.54		50.0	
		Z	4.94	65.54	17.79		50.0	

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10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	4.83	65.24	17.82	4.96	50.0	± 9.6 %
		Y	4.37	65.01	17.30		50.0	
		Z	4.68	65.13	17.57		50.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	4.65	65.15	17.34	4.17	50.0	± 9.6 %
		Y	4.23	65.09	16.92		50.0	
		Z	4.50	65.07	17.11		50.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	4.17	66.59	19.16	6.02	35.0	± 9.6 %
		Y	3.56	65.14	17.55		35.0	
		Z	4.10	66.82	18.84		35.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	4.54	65.85	18.86	6.02	35.0	± 9.6 %
		Y	4.01	64.98	17.73		35.0	
		Z	4.44	66.01	18.63		35.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	4.43	65.98	18.81	6.02	35.0	± 9.6 %
		Y	3.87	64.88	17.56		35.0	
		Z	4.33	66.08	18.54		35.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	4.40	66.14	18.93	6.02	35.0	± 9.6 %
		Y	3.84	65.01	17.69		35.0	
		Z	4.30	66.27	18.68		35.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	4.60	66.08	19.01	6.02	35.0	± 9.6 %
		Y	4.02	65.02	17.80		35.0	
		Z	4.48	66.17	18.76		35.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	4.49	65.89	18.83	6.02	35.0	± 9.6 %
		Y	3.95	64.98	17.69		35.0	
		Z	4.39	66.05	18.60		35.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	3.09	69.03	16.29	0.00	150.0	± 9.6 %
		Y	2.97	69.48	16.60		150.0	
		Z	2.89	68.28	15.90		150.0	
10313-AAA	IDEN 1:3	X	2.54	71.27	15.25	6.99	70.0	± 9.6 %
		Y	2.10	69.59	14.40		70.0	
		Z	2.02	68.59	14.05		70.0	
10314-AAA	IDEN 1:6	X	5.74	84.80	23.20	10.00	30.0	± 9.6 %
		Y	3.98	79.76	21.32		30.0	
		Z	4.35	79.98	21.33		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	0.99	63.55	15.20	0.17	150.0	± 9.6 %
		Y	1.05	64.16	15.35		150.0	
		Z	0.95	63.02	14.66		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.52	66.52	16.33	0.17	150.0	± 9.6 %
		Y	4.32	66.87	16.19		150.0	
		Z	4.41	66.43	16.19		150.0	
10317-AAB	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.52	66.52	16.33	0.17	150.0	± 9.6 %
		Y	4.32	66.87	16.19		150.0	
		Z	4.41	66.43	16.19		150.0	
10400-AAC	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.64	66.86	16.31	0.00	150.0	± 9.6 %
		Y	4.40	67.23	16.26		150.0	
		Z	4.50	66.75	16.18		150.0	
10401-AAC	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.38	67.15	16.54	0.00	150.0	± 9.6 %
		Y	5.05	66.95	16.24		150.0	
		Z	5.30	67.13	16.49		150.0	

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10402-AAC	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.60	67.33	16.48	0.00	150.0	± 9.6 %
		Y	5.42	67.55	16.43		150.0	
		Z	5.49	67.18	16.38		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	1.33	67.97	13.15	0.00	115.0	± 9.6 %
		Y	1.01	66.40	11.31		115.0	
		Z	0.97	64.73	10.69		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	1.33	67.97	13.15	0.00	115.0	± 9.6 %
		Y	1.01	66.40	11.31		115.0	
		Z	0.97	64.73	10.69		115.0	
10406-AAB	CDMA2000, RC3, SQ32, SCH0, Full Rate	X	100.00	124.59	31.54	0.00	100.0	± 9.6 %
		Y	100.00	115.96	26.61		100.0	
		Z	100.00	124.25	30.90		100.0	
10410-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	126.35	31.85	3.23	80.0	± 9.6 %
		Y	2.85	78.39	17.38		80.0	
		Z	100.00	128.55	32.40		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	0.93	62.89	14.66	0.00	150.0	± 9.6 %
		Y	1.01	63.77	15.03		150.0	
		Z	0.91	62.48	14.19		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.48	66.53	16.26	0.00	150.0	± 9.6 %
		Y	4.31	67.01	16.24		150.0	
		Z	4.37	66.45	16.14		150.0	
10417-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.48	66.53	16.26	0.00	150.0	± 9.6 %
		Y	4.31	67.01	16.24		150.0	
		Z	4.37	66.45	16.14		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)	X	4.47	66.69	16.28	0.00	150.0	± 9.6 %
		Y	4.31	67.24	16.31		150.0	
		Z	4.36	66.63	16.17		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)	X	4.49	66.64	16.28	0.00	150.0	± 9.6 %
		Y	4.32	67.16	16.28		150.0	
		Z	4.38	66.57	16.17		150.0	
10422-AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.61	66.63	16.29	0.00	150.0	± 9.6 %
		Y	4.42	67.12	16.29		150.0	
		Z	4.49	66.56	16.18		150.0	
10423-AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.77	66.95	16.41	0.00	150.0	± 9.6 %
		Y	4.54	67.37	16.37		150.0	
		Z	4.64	66.85	16.28		150.0	
10424-AAA	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.69	66.90	16.38	0.00	150.0	± 9.6 %
		Y	4.47	67.32	16.35		150.0	
		Z	4.56	66.80	16.26		150.0	
10425-AAA	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.32	67.28	16.60	0.00	150.0	± 9.6 %
		Y	5.08	67.39	16.48		150.0	
		Z	5.20	67.13	16.50		150.0	
10426-AAA	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.34	67.35	16.63	0.00	150.0	± 9.6 %
		Y	5.09	67.46	16.51		150.0	
		Z	5.24	67.26	16.56		150.0	

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10427-AAA	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.34	67.28	16.59	0.00	150.0	± 9.6 %
		Y	5.06	67.28	16.42		150.0	
		Z	5.22	67.12	16.48		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.28	71.25	18.46	0.00	150.0	± 9.6 %
		Y	4.35	73.30	18.67		150.0	
		Z	4.19	71.54	18.29		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	4.16	67.11	16.25	0.00	150.0	± 9.6 %
		Y	3.92	67.68	16.13		150.0	
		Z	4.01	67.00	16.03		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.46	66.96	16.32	0.00	150.0	± 9.6 %
		Y	4.24	67.46	16.29		150.0	
		Z	4.32	66.87	16.18		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.71	66.94	16.40	0.00	150.0	± 9.6 %
		Y	4.49	67.36	16.37		150.0	
		Z	4.58	66.83	16.28		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.42	72.20	18.43	0.00	150.0	± 9.6 %
		Y	4.52	74.36	18.50		150.0	
		Z	4.29	72.38	18.12		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe#2,3,4,7,8,9)	X	100.00	126.10	31.72	3.23	80.0	± 9.6 %
		Y	2.71	77.68	17.07		80.0	
		Z	100.00	128.24	32.25		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.44	67.11	15.50	0.00	150.0	± 9.6 %
		Y	3.17	67.54	14.96		150.0	
		Z	3.25	66.80	14.99		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.00	66.89	16.10	0.00	150.0	± 9.6 %
		Y	3.80	67.49	16.02		150.0	
		Z	3.86	66.78	15.89		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.27	66.79	16.22	0.00	150.0	± 9.6 %
		Y	4.09	67.30	16.20		150.0	
		Z	4.15	66.69	16.07		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.47	66.70	16.25	0.00	150.0	± 9.6 %
		Y	4.30	67.15	16.24		150.0	
		Z	4.36	66.59	16.12		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	3.33	67.24	15.05	0.00	150.0	± 9.6 %
		Y	2.94	67.19	14.13		150.0	
		Z	3.08	66.69	14.35		150.0	
10456-AAA	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.19	67.60	16.74	0.00	150.0	± 9.6 %
		Y	5.99	67.84	16.59		150.0	
		Z	6.15	67.61	16.74		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.73	65.15	15.97	0.00	150.0	± 9.6 %
		Y	3.69	65.80	15.98		150.0	
		Z	3.67	65.12	15.84		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	4.01	71.26	17.69	0.00	150.0	± 9.6 %
		Y	3.74	71.77	16.71		150.0	
		Z	3.80	71.00	17.03		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	5.11	68.69	18.41	0.00	150.0	± 9.6 %
		Y	4.81	69.46	17.81		150.0	
		Z	5.00	69.07	18.28		150.0	

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10460-AAA	UMTS-FDD (WCDMA, AMR)	X	0.67	69.33	16.40	0.00	150.0	± 9.6 %
		Y	0.97	70.81	17.36		150.0	
		Z	0.77	67.49	15.10		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	131.42	34.24	3.29	80.0	± 9.6 %
		Y	1.43	71.47	15.97		80.0	
		Z	100.00	133.37	34.70		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.52	70.74	13.24	3.23	80.0	± 9.6 %
		Y	0.63	60.00	6.61		80.0	
		Z	0.93	62.30	9.35		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.06	61.91	8.98	3.23	80.0	± 9.6 %
		Y	0.67	60.00	5.90		80.0	
		Z	0.74	60.00	7.55		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	128.08	32.52	3.23	80.0	± 9.6 %
		Y	1.05	67.69	13.71		80.0	
		Z	100.00	129.57	32.77		80.0	
10465-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.80	67.38	11.89	3.23	80.0	± 9.6 %
		Y	0.63	60.00	6.54		80.0	
		Z	0.84	61.35	8.81		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.99	61.21	8.59	3.23	80.0	± 9.6 %
		Y	0.67	60.00	5.86		80.0	
		Z	0.75	60.00	7.49		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	128.46	32.69	3.23	80.0	± 9.6 %
		Y	1.10	68.28	14.01		80.0	
		Z	100.00	130.03	32.97		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.94	68.15	12.21	3.23	80.0	± 9.6 %
		Y	0.63	60.00	6.56		80.0	
		Z	0.86	61.62	8.96		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.99	61.22	8.59	3.23	80.0	± 9.6 %
		Y	0.67	60.00	5.86		80.0	
		Z	0.74	60.00	7.49		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	128.50	32.70	3.23	80.0	± 9.6 %
		Y	1.10	68.28	14.00		80.0	
		Z	100.00	130.07	32.98		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.91	67.98	12.13	3.23	80.0	± 9.6 %
		Y	0.63	60.00	6.55		80.0	
		Z	0.86	61.54	8.91		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.98	61.16	8.55	3.23	80.0	± 9.6 %
		Y	0.67	60.00	5.84		80.0	
		Z	0.74	60.00	7.47		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	128.45	32.67	3.23	80.0	± 9.6 %
		Y	1.09	68.24	13.98		80.0	
		Z	100.00	130.02	32.96		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.89	67.90	12.10	3.23	80.0	± 9.6 %
		Y	0.63	60.00	6.54		80.0	
		Z	0.85	61.51	8.90		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.98	61.14	8.54	3.23	80.0	± 9.6 %
		Y	0.67	60.00	5.84		80.0	
		Z	0.74	60.00	7.47		80.0	

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10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.77	67.25	11.81	3.23	80.0	± 9.6 %
		Y	0.63	60.00	6.51		80.0	
		Z	0.83	61.28	8.76		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.97	61.09	8.50	3.23	80.0	± 9.6 %
		Y	0.67	60.00	5.83		80.0	
		Z	0.74	60.00	7.46		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	12.57	95.95	26.42	3.23	80.0	± 9.6 %
		Y	3.30	76.74	16.48		80.0	
		Z	18.71	102.45	27.83		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	10.59	86.67	21.39	3.23	80.0	± 9.6 %
		Y	1.69	65.14	11.52		80.0	
		Z	8.98	84.56	20.08		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	7.09	80.52	18.99	3.23	80.0	± 9.6 %
		Y	1.34	62.42	9.82		80.0	
		Z	4.89	76.19	16.85		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.81	72.63	17.12	2.23	80.0	± 9.6 %
		Y	1.34	64.00	11.67		80.0	
		Z	1.85	67.20	14.05		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.68	75.42	17.73	2.23	80.0	± 9.6 %
		Y	1.24	60.18	8.59		80.0	
		Z	3.01	69.77	14.73		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.20	73.72	17.10	2.23	80.0	± 9.6 %
		Y	1.25	60.00	8.48		80.0	
		Z	2.76	68.41	14.15		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.15	74.18	18.86	2.23	80.0	± 9.6 %
		Y	2.07	69.10	15.59		80.0	
		Z	2.45	70.80	16.96		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.91	69.15	16.17	2.23	80.0	± 9.6 %
		Y	1.94	64.80	12.69		80.0	
		Z	2.36	66.55	14.36		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.90	68.68	15.94	2.23	80.0	± 9.6 %
		Y	1.94	64.44	12.48		80.0	
		Z	2.36	66.17	14.17		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.30	72.58	18.98	2.23	80.0	± 9.6 %
		Y	2.54	69.73	17.23		80.0	
		Z	2.81	70.52	17.89		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.17	68.55	17.26	2.23	80.0	± 9.6 %
		Y	2.70	67.30	15.89		80.0	
		Z	2.87	67.46	16.46		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.26	68.36	17.18	2.23	80.0	± 9.6 %
		Y	2.77	67.17	15.83		80.0	
		Z	2.96	67.34	16.41		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.49	70.70	18.31	2.23	80.0	± 9.6 %
		Y	2.86	68.77	17.08		80.0	
		Z	3.10	69.22	17.53		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.50	67.67	17.17	2.23	80.0	± 9.6 %
		Y	3.08	66.83	16.21		80.0	
		Z	3.24	66.86	16.61		80.0	

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10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.56	67.54	17.12	2.23	80.0	± 9.6 %
		Y	3.13	66.73	16.16		80.0	
		Z	3.31	66.76	16.57		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.82	72.42	18.86	2.23	80.0	± 9.6 %
		Y	3.04	69.92	17.50		80.0	
		Z	3.33	70.56	17.97		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.53	68.07	17.38	2.23	80.0	± 9.6 %
		Y	3.09	67.04	16.43		80.0	
		Z	3.26	67.15	16.81		80.0	
10496-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.60	67.78	17.28	2.23	80.0	± 9.6 %
		Y	3.18	66.90	16.39		80.0	
		Z	3.35	66.95	16.75		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.79	66.60	13.40	2.23	80.0	± 9.6 %
		Y	0.89	60.00	8.03		80.0	
		Z	1.11	61.32	9.85		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.35	60.67	9.32	2.23	80.0	± 9.6 %
		Y	1.07	60.00	6.71		80.0	
		Z	1.18	60.00	7.96		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.32	60.19	8.91	2.23	80.0	± 9.6 %
		Y	1.09	60.00	6.53		80.0	
		Z	1.20	60.00	7.81		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.13	73.09	18.76	2.23	80.0	± 9.6 %
		Y	2.27	69.45	16.30		80.0	
		Z	2.58	70.55	17.30		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.04	69.01	16.63	2.23	80.0	± 9.6 %
		Y	2.31	66.30	14.16		80.0	
		Z	2.62	67.22	15.32		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.09	68.84	16.49	2.23	80.0	± 9.6 %
		Y	2.34	66.10	13.98		80.0	
		Z	2.66	67.06	15.17		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.25	72.35	18.86	2.23	80.0	± 9.6 %
		Y	2.51	69.54	17.13		80.0	
		Z	2.78	70.30	17.78		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.15	68.45	17.19	2.23	80.0	± 9.6 %
		Y	2.68	67.19	15.82		80.0	
		Z	2.86	67.36	16.40		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.24	68.27	17.12	2.23	80.0	± 9.6 %
		Y	2.76	67.08	15.77		80.0	
		Z	2.95	67.24	16.35		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.79	72.26	18.78	2.23	80.0	± 9.6 %
		Y	3.02	69.79	17.43		80.0	
		Z	3.30	70.41	17.89		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.51	68.00	17.34	2.23	80.0	± 9.6 %
		Y	3.08	66.98	16.39		80.0	
		Z	3.25	67.09	16.77		80.0	

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10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.59	67.71	17.24	2.23	80.0	± 9.6 %
		Y	3.17	66.83	16.34		80.0	
		Z	3.34	66.88	16.70		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.09	70.75	18.13	2.23	80.0	± 9.6 %
		Y	3.47	69.12	17.18		80.0	
		Z	3.69	69.39	17.48		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.98	67.69	17.28	2.23	80.0	± 9.6 %
		Y	3.56	66.83	16.53		80.0	
		Z	3.73	66.89	16.82		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.04	67.42	17.20	2.23	80.0	± 9.6 %
		Y	3.64	66.70	16.50		80.0	
		Z	3.80	66.70	16.77		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.31	72.51	18.70	2.23	80.0	± 9.6 %
		Y	3.52	70.17	17.50		80.0	
		Z	3.79	70.69	17.88		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.87	67.97	17.40	2.23	80.0	± 9.6 %
		Y	3.45	66.91	16.57		80.0	
		Z	3.61	67.06	16.90		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.90	67.52	17.26	2.23	80.0	± 9.6 %
		Y	3.50	66.63	16.49		80.0	
		Z	3.66	66.71	16.80		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.89	63.10	14.73	0.00	150.0	± 9.6 %
		Y	0.97	64.00	15.13		150.0	
		Z	0.87	62.65	14.22		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.69	75.19	18.61	0.00	150.0	± 9.6 %
		Y	0.72	74.72	19.64		150.0	
		Z	0.52	70.64	18.08		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.75	65.43	15.46	0.00	150.0	± 9.6 %
		Y	0.83	66.25	16.03		150.0	
		Z	0.71	64.45	14.63		150.0	
10518-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.47	66.60	16.23	0.00	150.0	± 9.6 %
		Y	4.30	67.13	16.24		150.0	
		Z	4.36	66.54	16.12		150.0	
10519-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.65	66.84	16.36	0.00	150.0	± 9.6 %
		Y	4.44	67.28	16.31		150.0	
		Z	4.52	66.74	16.23		150.0	
10520-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.51	66.80	16.28	0.00	150.0	± 9.6 %
		Y	4.30	67.21	16.24		150.0	
		Z	4.38	66.68	16.14		150.0	
10521-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.44	66.79	16.26	0.00	150.0	± 9.6 %
		Y	4.23	67.18	16.22		150.0	
		Z	4.31	66.65	16.12		150.0	
10522-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.50	66.90	16.35	0.00	150.0	± 9.6 %
		Y	4.27	67.26	16.29		150.0	
		Z	4.37	66.80	16.23		150.0	

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10523-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.38	66.75	16.19	0.00	150.0	± 9.6 %
		Y	4.22	67.36	16.27		150.0	
		Z	4.27	66.69	16.09		150.0	
10524-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.44	66.81	16.32	0.00	150.0	± 9.6 %
		Y	4.23	67.27	16.31		150.0	
		Z	4.31	66.72	16.19		150.0	
10525-AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.43	65.85	15.91	0.00	150.0	± 9.6 %
		Y	4.28	66.42	15.95		150.0	
		Z	4.33	65.78	15.80		150.0	
10526-AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.60	66.22	16.05	0.00	150.0	± 9.6 %
		Y	4.39	66.67	16.05		150.0	
		Z	4.47	66.10	15.93		150.0	
10527-AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.52	66.18	15.99	0.00	150.0	± 9.6 %
		Y	4.33	66.65	16.00		150.0	
		Z	4.40	66.06	15.86		150.0	
10528-AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.54	66.20	16.03	0.00	150.0	± 9.6 %
		Y	4.34	66.66	16.03		150.0	
		Z	4.41	66.08	15.90		150.0	
10529-AAA	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.54	66.20	16.03	0.00	150.0	± 9.6 %
		Y	4.34	66.66	16.03		150.0	
		Z	4.41	66.08	15.90		150.0	
10531-AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.53	66.30	16.04	0.00	150.0	± 9.6 %
		Y	4.30	66.67	16.00		150.0	
		Z	4.39	66.14	15.89		150.0	
10532-AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.39	66.15	15.97	0.00	150.0	± 9.6 %
		Y	4.19	66.54	15.94		150.0	
		Z	4.26	65.99	15.82		150.0	
10533-AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.55	66.25	16.02	0.00	150.0	± 9.6 %
		Y	4.34	66.75	16.04		150.0	
		Z	4.42	66.14	15.89		150.0	
10534-AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	5.08	66.30	16.09	0.00	150.0	± 9.6 %
		Y	4.89	66.57	16.06		150.0	
		Z	4.97	66.16	15.98		150.0	
10535-AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.16	66.50	16.19	0.00	150.0	± 9.6 %
		Y	4.92	66.66	16.11		150.0	
		Z	5.04	66.36	16.09		150.0	
10536-AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	5.02	66.43	16.13	0.00	150.0	± 9.6 %
		Y	4.82	66.69	16.10		150.0	
		Z	4.92	66.31	16.04		150.0	
10537-AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	5.08	66.40	16.12	0.00	150.0	± 9.6 %
		Y	4.89	66.70	16.10		150.0	
		Z	4.97	66.27	16.02		150.0	
10538-AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.17	66.41	16.17	0.00	150.0	± 9.6 %
		Y	4.94	66.62	16.10		150.0	
		Z	5.05	66.27	16.07		150.0	
10540-AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	5.11	66.46	16.20	0.00	150.0	± 9.6 %
		Y	4.88	66.59	16.11		150.0	
		Z	4.98	66.25	16.07		150.0	

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10541-AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	5.07	66.30	16.11	0.00	150.0	± 9.6 %
		Y	4.87	66.54	16.06		150.0	
		Z	4.95	66.13	16.00		150.0	
10542-AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.23	66.37	16.17	0.00	150.0	± 9.6 %
		Y	5.02	66.62	16.12		150.0	
		Z	5.11	66.24	16.07		150.0	
10543-AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.30	66.42	16.21	0.00	150.0	± 9.6 %
		Y	5.09	66.70	16.18		150.0	
		Z	5.18	66.26	16.11		150.0	
10544-AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.39	66.39	16.08	0.00	150.0	± 9.6 %
		Y	5.24	66.62	16.04		150.0	
		Z	5.31	66.25	15.99		150.0	
10545-AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.61	66.87	16.27	0.00	150.0	± 9.6 %
		Y	5.39	66.99	16.18		150.0	
		Z	5.51	66.76	16.20		150.0	
10546-AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.46	66.61	16.15	0.00	150.0	± 9.6 %
		Y	5.27	66.73	16.06		150.0	
		Z	5.35	66.41	16.03		150.0	
10547-AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.53	66.65	16.17	0.00	150.0	± 9.6 %
		Y	5.35	66.84	16.12		150.0	
		Z	5.43	66.50	16.08		150.0	
10548-AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.85	67.79	16.70	0.00	150.0	± 9.6 %
		Y	5.44	67.33	16.34		150.0	
		Z	5.68	67.46	16.52		150.0	
10550-AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.50	66.66	16.19	0.00	150.0	± 9.6 %
		Y	5.32	66.91	16.17		150.0	
		Z	5.42	66.59	16.14		150.0	
10551-AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.49	66.66	16.15	0.00	150.0	± 9.6 %
		Y	5.26	66.69	16.02		150.0	
		Z	5.38	66.47	16.04		150.0	
10552-AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.40	66.44	16.05	0.00	150.0	± 9.6 %
		Y	5.25	66.77	16.06		150.0	
		Z	5.31	66.32	15.96		150.0	
10553-AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.48	66.48	16.10	0.00	150.0	± 9.6 %
		Y	5.30	66.68	16.04		150.0	
		Z	5.38	66.31	16.00		150.0	
10554-AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.81	66.75	16.17	0.00	150.0	± 9.6 %
		Y	5.66	66.92	16.10		150.0	
		Z	5.73	66.62	16.08		150.0	
10555-AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	5.95	67.09	16.31	0.00	150.0	± 9.6 %
		Y	5.74	67.11	16.18		150.0	
		Z	5.86	66.93	16.22		150.0	
10556-AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	5.97	67.13	16.32	0.00	150.0	± 9.6 %
		Y	5.77	67.22	16.22		150.0	
		Z	5.88	66.99	16.24		150.0	
10557-AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	5.92	67.01	16.29	0.00	150.0	± 9.6 %
		Y	5.74	67.12	16.19		150.0	
		Z	5.83	66.84	16.19		150.0	

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10558-AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	5.98	67.18	16.39	0.00	150.0	± 9.6 %
		Y	5.73	67.14	16.22		150.0	
		Z	5.87	66.99	16.28		150.0	
10560-AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	5.96	67.01	16.34	0.00	150.0	± 9.6 %
		Y	5.78	67.09	16.23		150.0	
		Z	5.87	66.84	16.24		150.0	
10561-AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	5.89	67.01	16.38	0.00	150.0	± 9.6 %
		Y	5.69	67.06	16.25		150.0	
		Z	5.81	66.86	16.28		150.0	
10562-AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	6.02	67.40	16.57	0.00	150.0	± 9.6 %
		Y	5.74	67.21	16.32		150.0	
		Z	5.88	67.10	16.40		150.0	
10563-AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	6.23	67.65	16.65	0.00	150.0	± 9.6 %
		Y	5.84	67.19	16.28		150.0	
		Z	5.99	67.07	16.36		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.79	66.65	16.37	0.46	150.0	± 9.6 %
		Y	4.60	67.08	16.33		150.0	
		Z	4.68	66.58	16.26		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	5.02	67.12	16.71	0.46	150.0	± 9.6 %
		Y	4.79	67.49	16.64		150.0	
		Z	4.89	67.02	16.59		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	4.86	66.96	16.52	0.46	150.0	± 9.6 %
		Y	4.63	67.29	16.44		150.0	
		Z	4.73	66.84	16.39		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	4.89	67.38	16.90	0.46	150.0	± 9.6 %
		Y	4.67	67.72	16.84		150.0	
		Z	4.76	67.26	16.78		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.77	66.72	16.28	0.46	150.0	± 9.6 %
		Y	4.50	66.95	16.13		150.0	
		Z	4.63	66.60	16.14		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	4.84	67.47	16.96	0.46	150.0	± 9.6 %
		Y	4.67	67.99	16.99		150.0	
		Z	4.73	67.43	16.88		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	4.88	67.32	16.89	0.46	150.0	± 9.6 %
		Y	4.65	67.73	16.86		150.0	
		Z	4.75	67.24	16.79		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.04	63.90	15.45	0.46	130.0	± 9.6 %
		Y	1.08	64.16	15.33		130.0	
		Z	1.00	63.25	14.85		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.05	64.51	15.84	0.46	130.0	± 9.6 %
		Y	1.09	64.71	15.69		130.0	
		Z	1.00	63.78	15.20		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	3.27	96.37	26.46	0.46	130.0	± 9.6 %
		Y	1.45	83.34	23.00		130.0	
		Z	1.32	81.49	21.07		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	1.17	71.23	19.29	0.46	130.0	± 9.6 %
		Y	1.14	70.12	18.67		130.0	
		Z	1.05	69.28	18.09		130.0	

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10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.57	66.43	16.43	0.46	130.0	± 9.6 %
		Y	4.36	66.76	16.27		130.0	
		Z	4.46	66.34	16.29		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.59	66.60	16.50	0.46	130.0	± 9.6 %
		Y	4.39	66.99	16.38		130.0	
		Z	4.48	66.53	16.37		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	4.80	66.91	16.67	0.46	130.0	± 9.6 %
		Y	4.55	67.20	16.51		130.0	
		Z	4.66	66.80	16.53		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.70	67.07	16.78	0.46	130.0	± 9.6 %
		Y	4.46	67.37	16.63		130.0	
		Z	4.57	66.96	16.65		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.45	66.30	16.05	0.46	130.0	± 9.6 %
		Y	4.20	66.47	15.84		130.0	
		Z	4.32	66.13	15.87		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.50	66.35	16.07	0.46	130.0	± 9.6 %
		Y	4.22	66.49	15.84		130.0	
		Z	4.36	66.20	15.91		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.59	67.11	16.72	0.46	130.0	± 9.6 %
		Y	4.37	67.47	16.62		130.0	
		Z	4.46	67.00	16.59		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.40	66.06	15.83	0.46	130.0	± 9.6 %
		Y	4.12	66.22	15.60		130.0	
		Z	4.25	65.89	15.65		130.0	
10583-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.57	66.43	16.43	0.46	130.0	± 9.6 %
		Y	4.36	66.76	16.27		130.0	
		Z	4.46	66.34	16.29		130.0	
10584-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.59	66.60	16.50	0.46	130.0	± 9.6 %
		Y	4.39	66.99	16.38		130.0	
		Z	4.48	66.53	16.37		130.0	
10585-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.80	66.91	16.67	0.46	130.0	± 9.6 %
		Y	4.55	67.20	16.51		130.0	
		Z	4.66	66.80	16.53		130.0	
10586-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.70	67.07	16.78	0.46	130.0	± 9.6 %
		Y	4.46	67.37	16.63		130.0	
		Z	4.57	66.96	16.65		130.0	
10587-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.45	66.30	16.05	0.46	130.0	± 9.6 %
		Y	4.20	66.47	15.84		130.0	
		Z	4.32	66.13	15.87		130.0	
10588-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.50	66.35	16.07	0.46	130.0	± 9.6 %
		Y	4.22	66.49	15.84		130.0	
		Z	4.36	66.20	15.91		130.0	
10589-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.59	67.11	16.72	0.46	130.0	± 9.6 %
		Y	4.37	67.47	16.62		130.0	
		Z	4.46	67.00	16.59		130.0	
10590-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.40	66.06	15.83	0.46	130.0	± 9.6 %
		Y	4.12	66.22	15.60		130.0	
		Z	4.25	65.89	15.65		130.0	

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10591-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.72	66.50	16.53	0.46	130.0	± 9.6 %
		Y	4.52	66.87	16.41		130.0	
		Z	4.61	66.43	16.42		130.0	
10592-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	4.87	66.84	16.67	0.46	130.0	± 9.6 %
		Y	4.63	67.14	16.53		130.0	
		Z	4.75	66.75	16.55		130.0	
10593-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	4.79	66.74	16.54	0.46	130.0	± 9.6 %
		Y	4.55	67.01	16.38		130.0	
		Z	4.66	66.62	16.40		130.0	
10594-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	4.85	66.92	16.70	0.46	130.0	± 9.6 %
		Y	4.60	67.19	16.55		130.0	
		Z	4.72	66.81	16.58		130.0	
10595-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.82	66.86	16.59	0.46	130.0	± 9.6 %
		Y	4.57	67.17	16.46		130.0	
		Z	4.68	66.76	16.47		130.0	
10596-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.75	66.86	16.60	0.46	130.0	± 9.6 %
		Y	4.49	67.11	16.44		130.0	
		Z	4.62	66.74	16.46		130.0	
10597-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.70	66.75	16.47	0.46	130.0	± 9.6 %
		Y	4.45	66.98	16.29		130.0	
		Z	4.57	66.61	16.32		130.0	
10598-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.68	67.00	16.75	0.46	130.0	± 9.6 %
		Y	4.45	67.25	16.58		130.0	
		Z	4.55	66.86	16.60		130.0	
10599-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.42	67.11	16.78	0.46	130.0	± 9.6 %
		Y	5.19	67.25	16.63		130.0	
		Z	5.32	67.02	16.71		130.0	
10600-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.58	67.64	17.02	0.46	130.0	± 9.6 %
		Y	5.25	67.48	16.72		130.0	
		Z	5.47	67.55	16.94		130.0	
10601-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.45	67.31	16.87	0.46	130.0	± 9.6 %
		Y	5.20	67.40	16.70		130.0	
		Z	5.34	67.20	16.78		130.0	
10602-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.56	67.37	16.82	0.46	130.0	± 9.6 %
		Y	5.25	67.31	16.57		130.0	
		Z	5.47	67.36	16.78		130.0	
10603-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.62	67.63	17.08	0.46	130.0	± 9.6 %
		Y	5.32	67.60	16.85		130.0	
		Z	5.54	67.64	17.06		130.0	
10604-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.43	67.08	16.79	0.46	130.0	± 9.6 %
		Y	5.19	67.17	16.61		130.0	
		Z	5.42	67.32	16.88		130.0	
10605-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.56	67.49	17.00	0.46	130.0	± 9.6 %
		Y	5.25	67.37	16.71		130.0	
		Z	5.46	67.41	16.92		130.0	
10606-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.27	66.69	16.45	0.46	130.0	± 9.6 %
		Y	5.06	66.90	16.33		130.0	
		Z	5.18	66.62	16.37		130.0	

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10607-AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.57	65.83	16.16	0.46	130.0	± 9.6 %
		Y	4.38	66.25	16.08		130.0	
		Z	4.46	65.76	16.05		130.0	
10608-AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.75	66.24	16.33	0.46	130.0	± 9.6 %
		Y	4.50	66.55	16.21		130.0	
		Z	4.62	66.13	16.21		130.0	
10609-AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.64	66.08	16.16	0.46	130.0	± 9.6 %
		Y	4.40	66.38	16.03		130.0	
		Z	4.51	65.95	16.02		130.0	
10610-AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.69	66.24	16.33	0.46	130.0	± 9.6 %
		Y	4.45	66.56	16.21		130.0	
		Z	4.56	66.12	16.20		130.0	
10611-AAA	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.60	66.04	16.17	0.46	130.0	± 9.6 %
		Y	4.36	66.34	16.04		130.0	
		Z	4.47	65.92	16.03		130.0	
10612-AAA	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.61	66.20	16.22	0.46	130.0	± 9.6 %
		Y	4.34	66.44	16.07		130.0	
		Z	4.47	66.06	16.07		130.0	
10613-AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.62	66.07	16.09	0.46	130.0	± 9.6 %
		Y	4.34	66.25	15.90		130.0	
		Z	4.47	65.89	15.93		130.0	
10614-AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.56	66.27	16.34	0.46	130.0	± 9.6 %
		Y	4.32	66.52	16.18		130.0	
		Z	4.43	66.12	16.19		130.0	
10615-AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.60	65.86	15.94	0.46	130.0	± 9.6 %
		Y	4.35	66.16	15.80		130.0	
		Z	4.47	65.73	15.79		130.0	
10616-AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.23	66.33	16.38	0.46	130.0	± 9.6 %
		Y	5.00	66.46	16.23		130.0	
		Z	5.12	66.19	16.27		130.0	
10617-AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.31	66.55	16.46	0.46	130.0	± 9.6 %
		Y	5.03	66.54	16.24		130.0	
		Z	5.20	66.43	16.37		130.0	
10618-AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.19	66.53	16.47	0.46	130.0	± 9.6 %
		Y	4.95	66.63	16.31		130.0	
		Z	5.09	66.44	16.38		130.0	
10619-AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.21	66.35	16.31	0.46	130.0	± 9.6 %
		Y	4.97	66.48	16.16		130.0	
		Z	5.09	66.20	16.20		130.0	
10620-AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.29	66.37	16.37	0.46	130.0	± 9.6 %
		Y	5.03	66.43	16.18		130.0	
		Z	5.18	66.24	16.27		130.0	
10621-AAA	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.29	66.50	16.56	0.46	130.0	± 9.6 %
		Y	5.05	66.60	16.39		130.0	
		Z	5.19	66.38	16.47		130.0	
10622-AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.32	66.70	16.65	0.46	130.0	± 9.6 %
		Y	5.04	66.68	16.42		130.0	
		Z	5.20	66.56	16.55		130.0	

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10623-AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.18	66.18	16.26	0.46	130.0	± 9.6 %
		Y	4.94	66.25	16.07		130.0	
		Z	5.06	65.99	16.12		130.0	
10624-AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.38	66.39	16.43	0.46	130.0	± 9.6 %
		Y	5.12	66.48	16.25		130.0	
		Z	5.26	66.26	16.33		130.0	
10625-AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.77	67.48	17.02	0.46	130.0	± 9.6 %
		Y	5.21	66.62	16.39		130.0	
		Z	5.49	66.84	16.67		130.0	
10626-AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.53	66.37	16.32	0.46	130.0	± 9.6 %
		Y	5.34	66.48	16.18		130.0	
		Z	5.44	66.24	16.23		130.0	
10627-AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.80	67.04	16.62	0.46	130.0	± 9.6 %
		Y	5.54	67.01	16.42		130.0	
		Z	5.72	66.96	16.56		130.0	
10628-AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.57	66.48	16.27	0.46	130.0	± 9.6 %
		Y	5.32	66.43	16.06		130.0	
		Z	5.45	66.26	16.14		130.0	
10629-AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.65	66.56	16.30	0.46	130.0	± 9.6 %
		Y	5.43	66.62	16.15		130.0	
		Z	5.55	66.41	16.21		130.0	
10630-AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.20	68.39	17.21	0.46	130.0	± 9.6 %
		Y	5.58	67.29	16.49		130.0	
		Z	5.98	67.91	16.95		130.0	
10631-AAA	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.00	67.93	17.19	0.46	130.0	± 9.6 %
		Y	5.61	67.49	16.79		130.0	
		Z	5.83	67.59	17.00		130.0	
10632-AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.76	67.10	16.79	0.46	130.0	± 9.6 %
		Y	5.55	67.23	16.67		130.0	
		Z	5.69	67.07	16.76		130.0	
10633-AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.62	66.60	16.36	0.46	130.0	± 9.6 %
		Y	5.35	66.52	16.14		130.0	
		Z	5.52	66.47	16.28		130.0	
10634-AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.60	66.64	16.45	0.46	130.0	± 9.6 %
		Y	5.39	66.75	16.31		130.0	
		Z	5.50	66.48	16.34		130.0	
10635-AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.48	65.95	15.83	0.46	130.0	± 9.6 %
		Y	5.23	65.94	15.62		130.0	
		Z	5.36	65.74	15.69		130.0	
10636-AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	5.96	66.76	16.42	0.46	130.0	± 9.6 %
		Y	5.77	66.81	16.25		130.0	
		Z	5.88	66.63	16.34		130.0	
10637-AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.13	67.19	16.62	0.46	130.0	± 9.6 %
		Y	5.86	67.04	16.36		130.0	
		Z	6.04	67.05	16.53		130.0	
10638-AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.12	67.15	16.58	0.46	130.0	± 9.6 %
		Y	5.91	67.16	16.39		130.0	
		Z	6.04	67.03	16.50		130.0	

Certificate No: EX3-7370_Aug17

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EX3DV4- SN:7370

August 22, 2017

10639-AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.09	67.07	16.58	0.46	130.0	± 9.6 %
		Y	5.86	67.04	16.37		130.0	
		Z	6.00	66.90	16.48		130.0	
10640-AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.10	67.08	16.53	0.46	130.0	± 9.6 %
		Y	5.80	66.87	16.23		130.0	
		Z	5.99	66.89	16.41		130.0	
10641-AAB	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.15	67.00	16.51	0.46	130.0	± 9.6 %
		Y	5.91	66.96	16.30		130.0	
		Z	6.08	66.93	16.45		130.0	
10642-AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.18	67.24	16.80	0.46	130.0	± 9.6 %
		Y	5.94	67.20	16.59		130.0	
		Z	6.09	67.10	16.71		130.0	
10643-AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.02	66.94	16.54	0.46	130.0	± 9.6 %
		Y	5.78	66.86	16.31		130.0	
		Z	5.94	66.82	16.46		130.0	
10644-AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.18	67.44	16.81	0.46	130.0	± 9.6 %
		Y	5.83	67.03	16.41		130.0	
		Z	6.03	67.09	16.62		130.0	
10645-AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.53	68.08	17.09	0.46	130.0	± 9.6 %
		Y	5.95	67.08	16.40		130.0	
		Z	6.22	67.32	16.70		130.0	
10646-AAB	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	13.08	104.20	36.15	9.30	60.0	± 9.6 %
		Y	5.92	88.82	30.55		60.0	
		Z	8.85	96.13	33.55		60.0	
10647-AAB	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	11.33	101.47	35.40	9.30	60.0	± 9.6 %
		Y	5.14	86.02	29.61		60.0	
		Z	7.75	93.61	32.81		60.0	
10648-AAB	CDMA2000 (1x Advanced)	X	0.58	62.49	9.46	0.00	150.0	± 9.6 %
		Y	0.48	61.89	8.26		150.0	
		Z	0.45	60.67	7.46		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.36	66.28	16.43	2.23	80.0	± 9.6 %
		Y	3.09	66.24	15.72		80.0	
		Z	3.18	65.80	15.94		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	3.88	65.59	16.56	2.23	80.0	± 9.6 %
		Y	3.65	65.60	16.08		80.0	
		Z	3.73	65.23	16.23		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	3.86	65.21	16.55	2.23	80.0	± 9.6 %
		Y	3.68	65.22	16.13		80.0	
		Z	3.74	64.87	16.26		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	3.92	65.20	16.59	2.23	80.0	± 9.6 %
		Y	3.76	65.13	16.17		80.0	
		Z	3.81	64.82	16.30		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.

Attachment 6. – Dipole Calibration Data

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)**

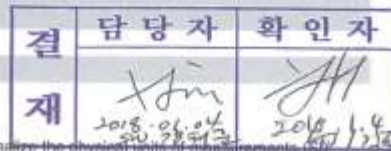
Certificate No: **D2600V2-1106_Dec17**

CALIBRATION CERTIFICATE

Object **D2600V2 - SN:1106**

Calibration procedure(s) **QA CAL-05.v9**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **December 15, 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 $(22 \pm 3)^{\circ}\text{C}$ 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	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. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
Secondary Standards	ID #	Check Date (In house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (In house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (In house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (In house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (In house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (In house check Oct-17)	In house check: Oct-18

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

Issued: December 18, 2017

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

Certificate No: D2600V2-1106_Dec17

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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**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.1 $\pm$ 6 %	2.03 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	56.4 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.0 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	51.0 $\pm$ 6 %	2.22 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.9 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	54.6 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.2 W/kg $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	47.8 Ω - 8.3 j Ω
Return Loss	- 21.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.7 Ω - 5.9 j Ω
Return Loss	- 21.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.150 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 18, 2015

DASY5 Validation Report for Head TSL

Date: 15.12.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1106

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.03$ S/m; $\epsilon_r = 37.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.96, 7.96, 7.96); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

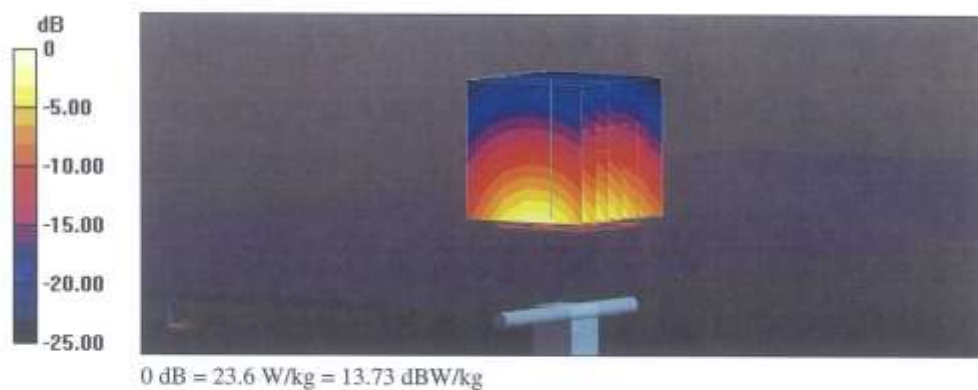
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 113.0 V/m; Power Drift = -0.07 dB

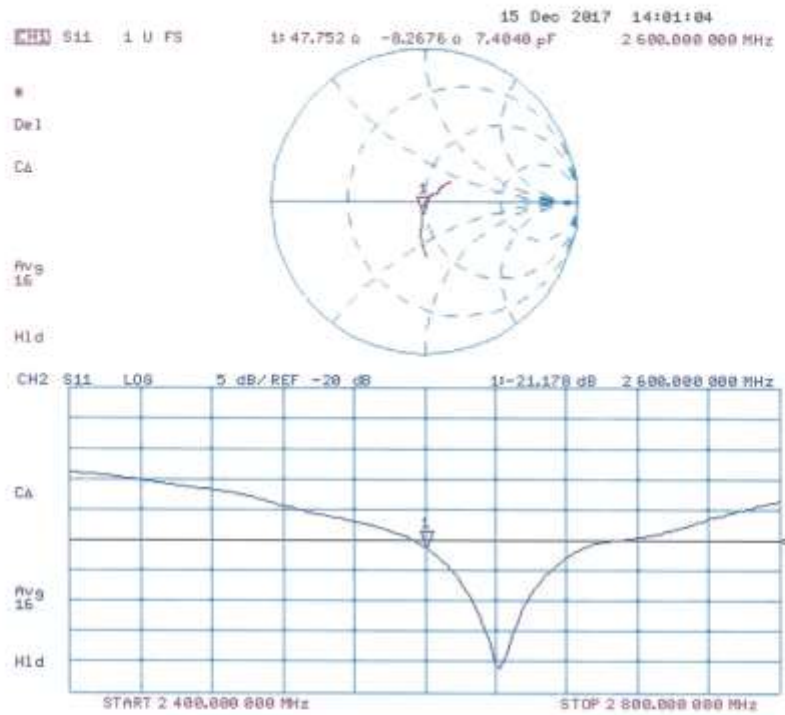
Peak SAR (extrapolated) = 32.1 W/kg

SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.35 W/kg

Maximum value of SAR (measured) = 23.6 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 15.12.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1106

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.22$ S/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.94, 7.94, 7.94); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

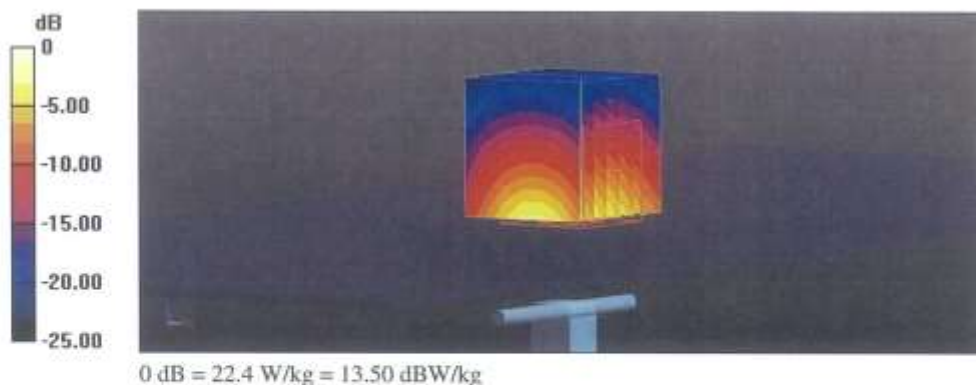
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 104.4 V/m; Power Drift = -0.08 dB

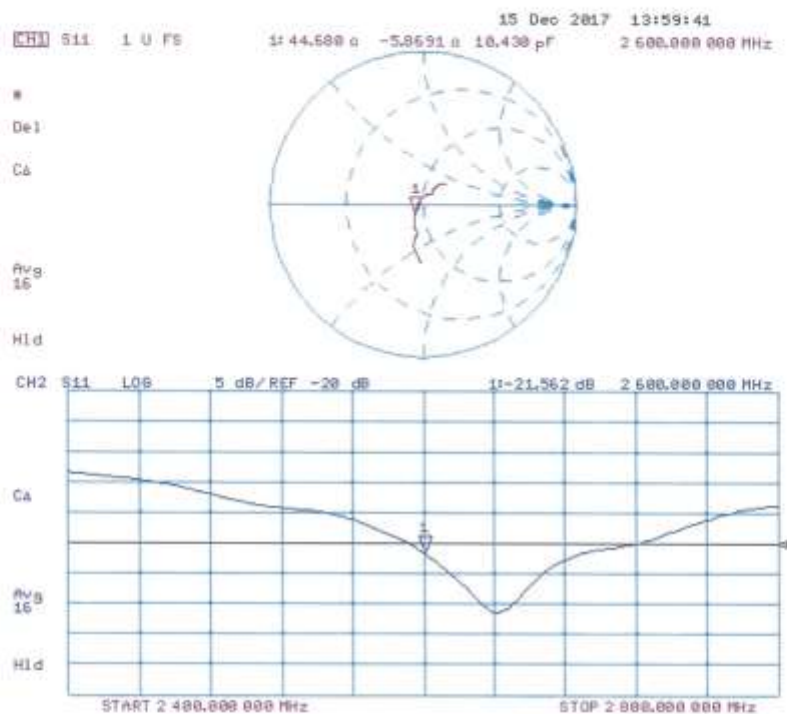
Peak SAR (extrapolated) = 29.9 W/kg

SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.13 W/kg

Maximum value of SAR (measured) = 22.4 W/kg



Impedance Measurement Plot for Body TSL



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Client **HCT (Dymstec)**

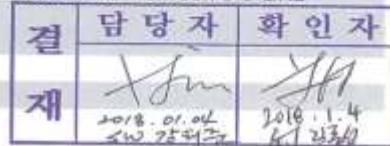
Certificate No: **D5GHzV2-1107_Dec17**

CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN:1107**

Calibration procedure(s) **QA CAL-22.v2
Calibration procedure for dipole validation kits between 3-6 GHz**

Calibration date: **December 14, 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. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 3503	31-Dec-16 (No. EX3-3503_Dec16)	Dec-17
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: December 14, 2017

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz $\pm$ 1 MHz 5600 MHz $\pm$ 1 MHz 5750 MHz $\pm$ 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	35.7 $\pm$ 6 %	4.56 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	---	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.3 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.3 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.2 ± 6 %	4.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	84.0 W / kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.0 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.0 ± 6 %	5.07 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.09 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.9 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.1 ± 6 %	5.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.79 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	77.4 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.17 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.5 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.5 ± 6 %	5.97 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	80.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.4 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.2 ± 8 %	6.18 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.65 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.9 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	49.8 Ω - 6.7 j Ω
Return Loss	- 23.5 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.6 Ω - 2.4 j Ω
Return Loss	- 26.0 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	55.6 Ω - 2.6 j Ω
Return Loss	- 24.6 dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	48.4 Ω - 5.2 j Ω
Return Loss	- 25.1 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.4 Ω - 2.6 j Ω
Return Loss	- 25.0 dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	55.7 Ω - 3.1 j Ω
Return Loss	- 24.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 11, 2011

DASY5 Validation Report for Head TSL

Date: 14.12.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1107

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.56$ S/m; $\epsilon_r = 35.7$; $\rho = 1000$ kg/m³,Medium parameters used: $f = 5600$ MHz; $\sigma = 4.91$ S/m; $\epsilon_r = 35.2$; $\rho = 1000$ kg/m³,Medium parameters used: $f = 5750$ MHz; $\sigma = 5.07$ S/m; $\epsilon_r = 35$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.58, 5.58, 5.58); Calibrated: 31.12.2016, ConvF(5.09, 5.09, 5.09); Calibrated: 31.12.2016, ConvF(5.02, 5.02, 5.02); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 71.55 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 30.5 W/kg

SAR(1 g) = 8.15 W/kg; SAR(10 g) = 2.34 W/kg

Maximum value of SAR (measured) = 19.1 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 71.65 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 33.4 W/kg

SAR(1 g) = 8.43 W/kg; SAR(10 g) = 2.41 W/kg

Maximum value of SAR (measured) = 20.2 W/kg

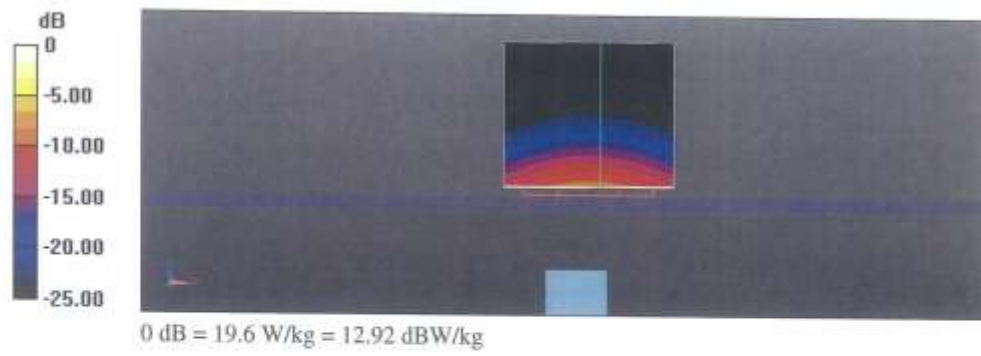
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 69.75 V/m; Power Drift = -0.09 dB

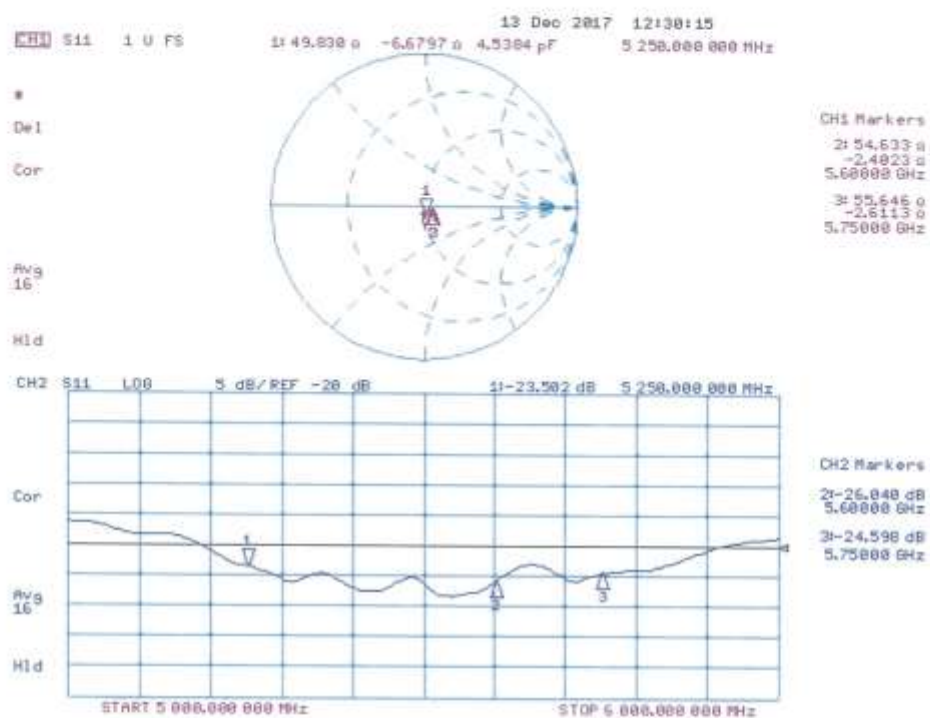
Peak SAR (extrapolated) = 32.8 W/kg

SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.3 W/kg

Maximum value of SAR (measured) = 19.6 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 13.12.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1107

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz

Medium parameters used: $f = 5250$ MHz; $\sigma = 5.51$ S/m; $\epsilon_r = 47.1$; $\rho = 1000$ kg/m³,Medium parameters used: $f = 5600$ MHz; $\sigma = 5.97$ S/m; $\epsilon_r = 46.5$; $\rho = 1000$ kg/m³,Medium parameters used: $f = 5750$ MHz; $\sigma = 6.18$ S/m; $\epsilon_r = 46.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.14, 5.14, 5.14); Calibrated: 31.12.2016, ConvF(4.57, 4.57, 4.57); Calibrated: 31.12.2016, ConvF(4.51, 4.51, 4.51); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 66.06 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 30.6 W/kg

SAR(1 g) = 7.79 W/kg; SAR(10 g) = 2.17 W/kg

Maximum value of SAR (measured) = 18.5 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.93 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 34.6 W/kg

SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.26 W/kg

Maximum value of SAR (measured) = 19.9 W/kg

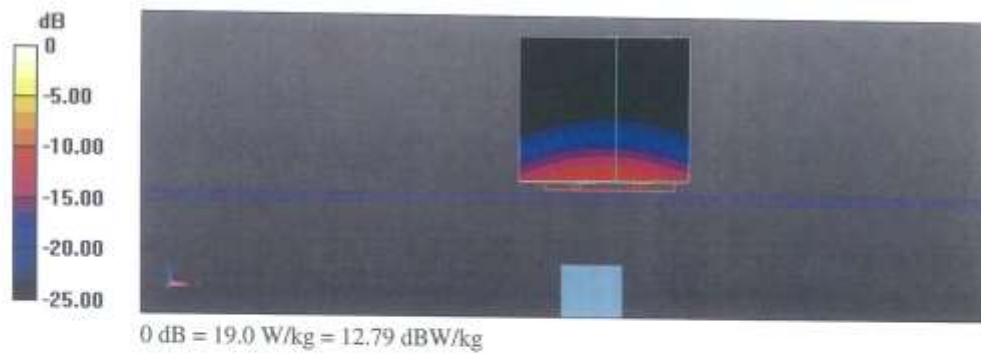
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 62.90 V/m; Power Drift = -0.08 dB

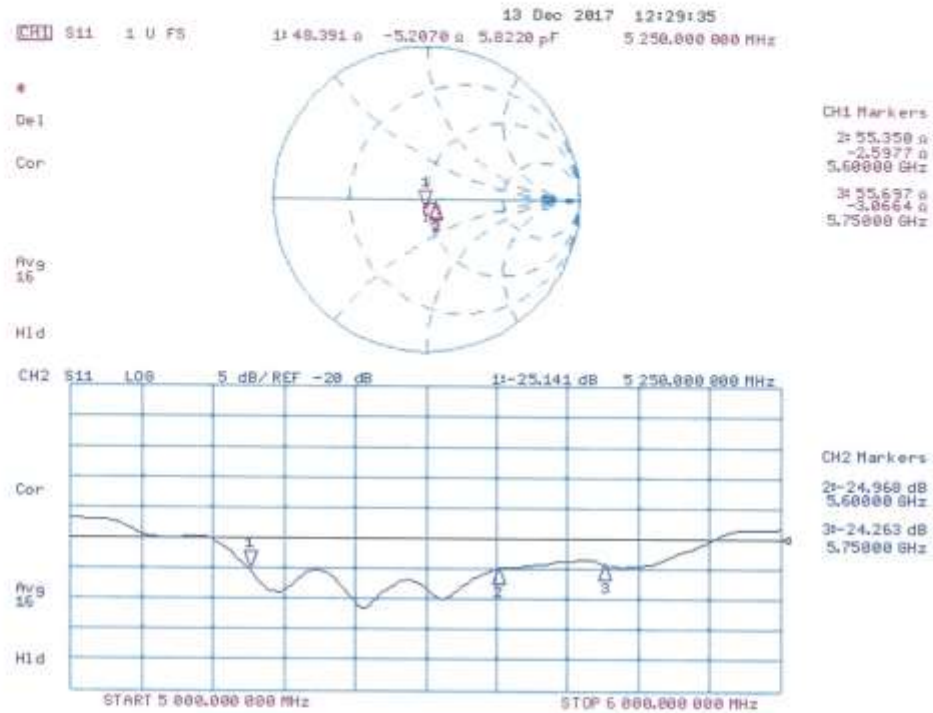
Peak SAR (extrapolated) = 34.0 W/kg

SAR(1 g) = 7.65 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 19.0 W/kg



Impedance Measurement Plot for Body TSL



Attachment 8:

LTE UP link CA Output Power Verifications

This device is specified with the same maximum output power and Tune-up tolerances for intra-band contiguous up-link LTE CA_41C and the single carrier LTE 41. Both Uplink carrier aggregation and single carrier are operating with power class 3.

This device support intra-band contiguous UL CA: LTE CA_41C with a maximum of 20MHz component carriers.

For intra-band contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that aggregate maximum allowed output power is equivalent to the single carrier scenario.

This device does not have any operating restrictions, power reduction or variations among the different LTE operating mode configurations on single carrier LTE 41 and intra-band contiguous up-link LTE CA_41C operations.

The measured power results of single carrier LTE 41 and intra-band contiguous up-link LTE CA_41C satisfy Maximum output power and Tune-up tolerances.

For intra-band contiguous up-link LTE CA_41C, 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. We measured output power for all BW and modulation combinations of intra-band contiguous uplink LTE CA_41C for this device and confirmed that 3.5 to 8dB MPR is applied to non contiguous RB offsets according to 3GPP 36.101 6.2.3A. Also output power of contiguous RB allocations is typically higher than non-contiguous RB offsets condition.

Per Fall 2017 TCB Workshop Notes, the output Power with uplink CA active was measured for the configuration with the Highest Reported SAR with single carrier for each exposure condition. The Power was measured with wideband signal integration over both component carriers.

Intra-band Contiguous LTE Uplink Combination CA_41C.

Uplink CA Combinations	Channel Bandwidth for Carrier [MHz]	Channel Bandwidth for Carrier [MHz]	Maximum Aggregated bandwidth [MHz]	Bandwidth combination set
CA_41C	10	20	40	0
	15	15,20		
	20	10,15,20		
	5,10	20	40	1
	15	15,20		
	20	5,10,15,20		
	10	15,20	40	2
	15	10,15,20		
	20	10,15,20		
	10	20	40	3
	20	20		

1. The Worst cases for LTE Uplink CA_41C Conducted Powers for all combinations

The output power measurement of LTE Uplink CA_41C were performed the all applicable UL CA Configurations intended for U.S. operations by KDB941225 D05A and TCB workshop notes in fall of 2017.

The worst case of output power measurement result for QPSK Full RB and 16QAM ,64QAM Modulation are shown below.

Please refer to SAR Report Sec 9 for the power of the Worst case QPSK 1RB configuration of this LTE UP CA_41C.

1.1 QPSK Modulation Full RB

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation Low Channel	5	40265	2557.5	QPSK	25	0	20	40382	2569.2	QPSK	100	0	21.75	20.48
	10	40290	2560	QPSK	50	0	15	40410	2572	QPSK	75	0	21.74	20.72
	10	40290	2560	QPSK	50	0	20	40434	2574.4	QPSK	100	0	21.74	20.63
	15	40315	2562.5	QPSK	75	0	10	40435	2574.5	QPSK	50	0	21.74	20.70
	15	40315	2562.5	QPSK	75	0	15	40465	2577.5	QPSK	75	0	21.74	20.73
	15	40315	2562.5	QPSK	75	0	20	40486	2579.6	QPSK	100	0	21.74	20.77
	20	40340	2565	QPSK	100	0	5	40457	2576.7	QPSK	25	0	21.76	20.78
	20	40340	2565	QPSK	100	0	10	40484	2579.4	QPSK	50	0	21.76	20.73
	20	40340	2565	QPSK	100	0	15	40511	2582.1	QPSK	75	0	21.76	20.40
	20	40340	2565	QPSK	100	0	20	40538	2584.8	QPSK	100	0	21.76	20.43

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation Middle Channel	5	40740	2605	QPSK	25	0	20	40623	2593.3	QPSK	100	0	21.57	20.42
	10	40740	2605	QPSK	50	0	15	40620	2593	QPSK	75	0	21.6	20.74
	10	40740	2605	QPSK	50	0	20	40596	2590.6	QPSK	100	0	21.6	20.74
	15	40740	2605	QPSK	75	0	10	40620	2593	QPSK	50	0	21.6	20.77
	15	40740	2605	QPSK	75	0	15	40590	2590	QPSK	75	0	21.6	20.22
	15	40740	2605	QPSK	75	0	20	40569	2587.9	QPSK	100	0	21.6	20.04
	20	40740	2605	QPSK	100	0	5	40623	2593.3	QPSK	25	0	21.61	20.51
	20	40740	2605	QPSK	100	0	10	40596	2590.6	QPSK	50	0	21.61	20.72
	20	40740	2605	QPSK	100	0	15	40569	2587.9	QPSK	75	0	21.61	20.18
	20	40740	2605	QPSK	100	0	20	40542	2585.2	QPSK	100	0	21.61	20.24

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation High Channel	5	41215	2652.5	QPSK	25	0	20	41098	2640.8	QPSK	100	0	21.6	20.81
	10	41190	2650	QPSK	50	0	15	41070	2638	QPSK	75	0	21.6	20.76
	10	41190	2650	QPSK	50	0	20	41046	2635.6	QPSK	100	0	21.6	20.56
	15	41165	2647.5	QPSK	75	0	10	41045	2635.5	QPSK	50	0	21.6	20.56
	15	41165	2647.5	QPSK	75	0	15	41015	2632.5	QPSK	75	0	21.6	21.47
	15	41165	2647.5	QPSK	75	0	20	40994	2630.4	QPSK	100	0	21.6	21.28
	20	41140	2645	QPSK	100	0	5	41023	2633.3	QPSK	25	0	21.63	20.76
	20	41140	2645	QPSK	100	0	10	40996	2630.6	QPSK	50	0	21.63	20.77
	20	41140	2645	QPSK	100	0	15	40969	2627.9	QPSK	75	0	21.63	21.28
	20	41140	2645	QPSK	100	0	20	40942	2625.2	QPSK	100	0	21.63	21.38

1.2 16QAM Modulation

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
1RB Contiguous Allocation Low Channel	5	40265	2557.5	16QAM	1	24	20	40382	2569.2	16QAM	1	0	21.99	21.83
	10	40290	2560	16QAM	1	49	15	40410	2572	16QAM	1	0	22.03	21.91
	10	40290	2560	16QAM	1	49	20	40434	2574.4	16QAM	1	0	22.03	21.90
	15	40315	2562.5	16QAM	1	74	10	40435	2574.5	16QAM	1	0	22.03	21.86
	15	40315	2562.5	16QAM	1	74	15	40465	2577.5	16QAM	1	0	22.03	21.92
	15	40315	2562.5	16QAM	1	74	20	40486	2579.6	16QAM	1	0	22.03	21.76
	20	40340	2565	16QAM	1	99	5	40457	2576.7	16QAM	1	0	21.97	21.69
	20	40340	2565	16QAM	1	99	10	40484	2579.4	16QAM	1	0	21.97	21.84
	20	40340	2565	16QAM	1	99	15	40511	2582.1	16QAM	1	0	21.97	21.88
	20	40340	2565	16QAM	1	99	20	40538	2584.8	16QAM	1	0	21.97	21.95

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
1RB Contiguous Allocation Middle Channel	5	40740	2605	16QAM	1	0	20	40623	2593.3	16QAM	1	99	21.73	21.57
	10	40740	2605	16QAM	1	0	15	40620	2593	16QAM	1	74	21.86	21.75
	10	40740	2605	16QAM	1	0	20	40596	2590.6	16QAM	1	99	21.86	21.71
	15	40740	2605	16QAM	1	0	10	40620	2593	16QAM	1	49	21.86	21.65
	15	40740	2605	16QAM	1	0	15	40590	2590	16QAM	1	74	21.86	21.73
	15	40740	2605	16QAM	1	0	20	40569	2587.9	16QAM	1	99	21.86	21.59
	20	40740	2605	16QAM	1	0	5	40623	2593.3	16QAM	1	24	21.84	21.65
	20	40740	2605	16QAM	1	0	10	40596	2590.6	16QAM	1	49	21.84	21.71
	20	40740	2605	16QAM	1	0	15	40569	2587.9	16QAM	1	74	21.84	21.63
	20	40740	2605	16QAM	1	0	20	40542	2585.2	16QAM	1	99	21.84	21.62

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
1RB Contiguous Allocation High Channel	5	41215	2652.5	16QAM	1	0	20	41098	2640.8	16QAM	1	99	21.86	21.72
	10	41190	2650	16QAM	1	0	15	41070	2638	16QAM	1	74	21.91	21.80
	10	41190	2650	16QAM	1	0	20	41046	2635.6	16QAM	1	99	21.91	21.72
	15	41165	2647.5	16QAM	1	0	10	41045	2635.5	16QAM	1	49	21.91	21.70
	15	41165	2647.5	16QAM	1	0	15	41015	2632.5	16QAM	1	74	21.91	21.80
	15	41165	2647.5	16QAM	1	0	20	40994	2630.4	16QAM	1	99	21.91	21.79
	20	41140	2645	16QAM	1	0	5	41023	2633.3	16QAM	1	24	21.85	21.71
	20	41140	2645	16QAM	1	0	10	40996	2630.6	16QAM	1	49	21.85	21.65
	20	41140	2645	16QAM	1	0	15	40969	2627.9	16QAM	1	74	21.85	21.68
	20	41140	2645	16QAM	1	0	20	40942	2625.2	16QAM	1	99	21.85	21.63

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation Low Channel	5	40265	2557.5	16QAM	25	0	20	40382	2569.2	16QAM	100	0	20.91	19.79
	10	40290	2560	16QAM	50	0	15	40410	2572	16QAM	75	0	20.88	19.83
	10	40290	2560	16QAM	50	0	20	40434	2574.4	16QAM	100	0	20.88	19.75
	15	40315	2562.5	16QAM	75	0	10	40435	2574.5	16QAM	50	0	20.88	19.69
	15	40315	2562.5	16QAM	75	0	15	40465	2577.5	16QAM	75	0	20.88	19.70
	15	40315	2562.5	16QAM	75	0	20	40486	2579.6	16QAM	100	0	20.88	19.75
	20	40340	2565	16QAM	100	0	5	40457	2576.7	16QAM	25	0	20.94	19.79
	20	40340	2565	16QAM	100	0	10	40484	2579.4	16QAM	50	0	20.94	19.74
	20	40340	2565	16QAM	100	0	15	40511	2582.1	16QAM	75	0	20.94	19.77
	20	40340	2565	16QAM	100	0	20	40538	2584.8	16QAM	100	0	20.94	19.72

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation Middle Channel	5	40740	2605	16QAM	25	0	20	40623	2593.3	16QAM	100	0	20.72	19.62
	10	40740	2605	16QAM	50	0	15	40620	2593	16QAM	75	0	20.90	19.75
	10	40740	2605	16QAM	50	0	20	40596	2590.6	16QAM	100	0	20.90	19.68
	15	40740	2605	16QAM	75	0	10	40620	2593	16QAM	50	0	20.90	19.74
	15	40740	2605	16QAM	75	0	15	40590	2590	16QAM	75	0	20.90	19.69
	15	40740	2605	16QAM	75	0	20	40569	2587.9	16QAM	100	0	20.90	19.75
	20	40740	2605	16QAM	100	0	5	40623	2593.3	16QAM	25	0	20.86	19.77
	20	40740	2605	16QAM	100	0	10	40596	2590.6	16QAM	50	0	20.86	19.67
	20	40740	2605	16QAM	100	0	15	40569	2587.9	16QAM	75	0	20.86	19.83
	20	40740	2605	16QAM	100	0	20	40542	2585.2	16QAM	100	0	20.86	19.75

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation High Channel	5	41215	2652.5	16QAM	25	0	20	41098	2640.8	16QAM	100	0	20.78	19.58
	10	41190	2650	16QAM	50	0	15	41070	2638	16QAM	75	0	20.79	19.69
	10	41190	2650	16QAM	50	0	20	41046	2635.6	16QAM	100	0	20.79	19.70
	15	41165	2647.5	16QAM	75	0	10	41045	2635.5	16QAM	50	0	20.78	19.72
	15	41165	2647.5	16QAM	75	0	15	41015	2632.5	16QAM	75	0	20.78	19.67
	15	41165	2647.5	16QAM	75	0	20	40994	2630.4	16QAM	100	0	20.78	19.69
	20	41140	2645	16QAM	100	0	5	41023	2633.3	16QAM	25	0	20.79	19.59
	20	41140	2645	16QAM	100	0	10	40996	2630.6	16QAM	50	0	20.79	19.64
	20	41140	2645	16QAM	100	0	15	40969	2627.9	16QAM	75	0	20.79	19.63
	20	41140	2645	16QAM	100	0	20	40942	2625.2	16QAM	100	0	20.79	19.65

1.3 64QAM Modulation

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
1RB Contiguous Allocation Low Channel	5	40265	2557.5	64QAM	1	24	20	40382	2569.2	64QAM	1	0	20.60	19.95
	10	40290	2560	64QAM	1	49	15	40410	2572	64QAM	1	0	20.64	20.00
	10	40290	2560	64QAM	1	49	20	40434	2574.4	64QAM	1	0	20.64	19.96
	15	40315	2562.5	64QAM	1	74	10	40435	2574.5	64QAM	1	0	20.64	20.08
	15	40315	2562.5	64QAM	1	74	15	40465	2577.5	64QAM	1	0	20.64	19.94
	15	40315	2562.5	64QAM	1	74	20	40486	2579.6	64QAM	1	0	20.64	19.97
	20	40340	2565	64QAM	1	99	5	40457	2576.7	64QAM	1	0	20.61	20.06
	20	40340	2565	64QAM	1	99	10	40484	2579.4	64QAM	1	0	20.61	20.11
	20	40340	2565	64QAM	1	99	15	40511	2582.1	64QAM	1	0	20.61	20.08
	20	40340	2565	64QAM	1	99	20	40538	2584.8	64QAM	1	0	20.61	19.83

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
1RB Contiguous Allocation Middle Channel	5	40740	2605	64QAM	1	0	20	40623	2593.3	64QAM	1	99	20.36	20.16
	10	40740	2605	64QAM	1	0	15	40620	2593	64QAM	1	74	20.47	20.44
	10	40740	2605	64QAM	1	0	20	40596	2590.6	64QAM	1	99	20.47	20.34
	15	40740	2605	64QAM	1	0	10	40620	2593	64QAM	1	49	20.47	20.34
	15	40740	2605	64QAM	1	0	15	40590	2590	64QAM	1	74	20.47	20.35
	15	40740	2605	64QAM	1	0	20	40569	2587.9	64QAM	1	99	20.47	20.29
	20	40740	2605	64QAM	1	0	5	40623	2593.3	64QAM	1	24	20.46	20.26
	20	40740	2605	64QAM	1	0	10	40596	2590.6	64QAM	1	49	20.46	20.43
	20	40740	2605	64QAM	1	0	15	40569	2587.9	64QAM	1	74	20.46	20.30
	20	40740	2605	64QAM	1	0	20	40542	2585.2	64QAM	1	99	20.46	20.41

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
1RB Contiguous Allocation High Channel	5	41215	2652.5	64QAM	1	0	20	41098	2640.8	64QAM	1	99	20.43	20.33
	10	41190	2650	64QAM	1	0	15	41070	2638	64QAM	1	74	20.47	20.37
	10	41190	2650	64QAM	1	0	20	41046	2635.6	64QAM	1	99	20.47	20.36
	15	41165	2647.5	64QAM	1	0	10	41045	2635.5	64QAM	1	49	20.47	20.46
	15	41165	2647.5	64QAM	1	0	15	41015	2632.5	64QAM	1	74	20.47	20.34
	15	41165	2647.5	64QAM	1	0	20	40994	2630.4	64QAM	1	99	20.47	20.44
	20	41140	2645	64QAM	1	0	5	41023	2633.3	64QAM	1	24	20.48	20.41
	20	41140	2645	64QAM	1	0	10	40996	2630.6	64QAM	1	49	20.48	20.32
	20	41140	2645	64QAM	1	0	15	40969	2627.9	64QAM	1	74	20.48	20.39
	20	41140	2645	64QAM	1	0	20	40942	2625.2	64QAM	1	99	20.48	20.38

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation Low Channel	5	40265	2557.5	64QAM	25	0	20	40382	2569.2	64QAM	100	0	19.92	19.80
	10	40290	2560	64QAM	50	0	15	40410	2572	64QAM	75	0	19.93	19.75
	10	40290	2560	64QAM	50	0	20	40434	2574.4	64QAM	100	0	19.93	19.73
	15	40315	2562.5	64QAM	75	0	10	40435	2574.5	64QAM	50	0	19.93	19.75
	15	40315	2562.5	64QAM	75	0	15	40465	2577.5	64QAM	75	0	19.93	19.75
	15	40315	2562.5	64QAM	75	0	20	40486	2579.6	64QAM	100	0	19.93	19.78
	20	40340	2565	64QAM	100	0	5	40457	2576.7	64QAM	25	0	19.89	19.77
	20	40340	2565	64QAM	100	0	10	40484	2579.4	64QAM	50	0	19.89	19.72
	20	40340	2565	64QAM	100	0	15	40511	2582.1	64QAM	75	0	19.89	19.80
	20	40340	2565	64QAM	100	0	20	40538	2584.8	64QAM	100	0	19.89	19.81

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation Middle Channel	5	40740	2605	64QAM	25	0	20	40623	2593.3	64QAM	100	0	19.78	19.66
	10	40740	2605	64QAM	50	0	15	40620	2593	64QAM	75	0	19.84	19.67
	10	40740	2605	64QAM	50	0	20	40596	2590.6	64QAM	100	0	19.84	19.70
	15	40740	2605	64QAM	75	0	10	40620	2593	64QAM	50	0	19.84	19.79
	15	40740	2605	64QAM	75	0	15	40590	2590	64QAM	75	0	19.84	19.78
	15	40740	2605	64QAM	75	0	20	40569	2587.9	64QAM	100	0	19.84	19.75
	20	40740	2605	64QAM	100	0	5	40623	2593.3	64QAM	25	0	19.86	19.69
	20	40740	2605	64QAM	100	0	10	40596	2590.6	64QAM	50	0	19.86	19.74
	20	40740	2605	64QAM	100	0	15	40569	2587.9	64QAM	75	0	19.86	19.83
	20	40740	2605	64QAM	100	0	20	40542	2585.2	64QAM	100	0	19.86	19.79

Channel	PCC						SCC						Tx. Power [dBm]	
	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	BW [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
Full RB Contiguous Allocation High Channel	5	41215	2652.5	64QAM	25	0	20	41098	2640.8	64QAM	100	0	19.84	19.68
	10	41190	2650	64QAM	50	0	15	41070	2638	64QAM	75	0	19.85	19.76
	10	41190	2650	64QAM	50	0	20	41046	2635.6	64QAM	100	0	19.85	19.82
	15	41165	2647.5	64QAM	75	0	10	41045	2635.5	64QAM	50	0	19.85	19.82
	15	41165	2647.5	64QAM	75	0	15	41015	2632.5	64QAM	75	0	19.85	19.64
	15	41165	2647.5	64QAM	75	0	20	40994	2630.4	64QAM	100	0	19.85	19.70
	20	41140	2645	64QAM	100	0	5	41023	2633.3	64QAM	25	0	19.81	19.64
	20	41140	2645	64QAM	100	0	10	40996	2630.6	64QAM	50	0	19.81	19.77
	20	41140	2645	64QAM	100	0	15	40969	2627.9	64QAM	75	0	19.81	19.72
	20	41140	2645	64QAM	100	0	20	40942	2625.2	64QAM	100	0	19.81	19.85

1.4 The Worst case Conducted Powers CA_41C with Various combinations for 20MHz Channel BW

The worst case of output power measurement result for CA_41C with Variable combinations for 20MHz Channel Bandwidth are shown below

PCC UL/DL LTE 41[20MHz]					SCC UL/DL LTE 41[20MHz]					Tx. Power [dBm]	
UL/DL Channel	Frequency	Modulation	RB	offset	SCC UL/DL Channel	SCC UL/DL Frequency	Modulation	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with UL CA Enabled(dBm)
40340	2565	QPSK	1	99	40538	2584.8	QPSK	1	0	22.85	22.81
40340	2565	QPSK	1	99	40538	2584.8	QPSK	1	49	22.85	18.23
40340	2565	QPSK	1	99	40538	2584.8	QPSK	1	99	22.85	18.21
40340	2565	QPSK	1	0	40538	2584.8	QPSK	1	0	22.8	18.29
40340	2565	QPSK	1	0	40538	2584.8	QPSK	1	49	22.8	14.17
40340	2565	QPSK	1	0	40538	2584.8	QPSK	1	99	22.8	14.16
40340	2565	QPSK	1	49	40538	2584.8	QPSK	1	0	22.83	18.25
40340	2565	QPSK	1	49	40538	2584.8	QPSK	1	49	22.83	18.14
40340	2565	QPSK	1	49	40538	2584.8	QPSK	1	99	22.83	14.11
40340	2565	QPSK	50	0	40538	2584.8	QPSK	50	0	21.82	19.24
40340	2565	QPSK	50	0	40538	2584.8	QPSK	50	25	21.82	19.16
40340	2565	QPSK	50	0	40538	2584.8	QPSK	50	49	21.82	19.16
40340	2565	QPSK	50	25	40538	2584.8	QPSK	50	0	21.78	19.2
40340	2565	QPSK	50	25	40538	2584.8	QPSK	50	25	21.78	19.2
40340	2565	QPSK	50	25	40538	2584.8	QPSK	50	49	21.78	19.14
40340	2565	QPSK	50	49	40538	2584.8	QPSK	50	0	21.73	19.2
40340	2565	QPSK	50	49	40538	2584.8	QPSK	50	25	21.73	19.15
40340	2565	QPSK	50	49	40538	2584.8	QPSK	50	49	21.73	19.12
40340	2565	QPSK	100	0	40538	2584.8	QPSK	100	0	21.76	20.43
40340	2565	16QAM	1	99	40538	2584.8	16QAM	1	0	21.97	21.95
40340	2565	16QAM	1	99	40538	2584.8	16QAM	1	49	21.97	18.48
40340	2565	16QAM	1	99	40538	2584.8	16QAM	1	99	21.97	18.44
40340	2565	16QAM	1	0	40538	2584.8	16QAM	1	0	22.05	18.52
40340	2565	16QAM	1	0	40538	2584.8	16QAM	1	49	22.05	14.33
40340	2565	16QAM	1	0	40538	2584.8	16QAM	1	99	22.05	14.33
40340	2565	16QAM	1	49	40538	2584.8	16QAM	1	0	22.13	18.49
40340	2565	16QAM	1	49	40538	2584.8	16QAM	1	49	22.13	18.4
40340	2565	16QAM	1	49	40538	2584.8	16QAM	1	99	22.13	14.3
40340	2565	16QAM	50	0	40538	2584.8	16QAM	50	0	20.98	19.35
40340	2565	16QAM	50	0	40538	2584.8	16QAM	50	25	20.98	19.28
40340	2565	16QAM	50	0	40538	2584.8	16QAM	50	49	20.98	19.24
40340	2565	16QAM	50	25	40538	2584.8	16QAM	50	0	20.9	19.33
40340	2565	16QAM	50	25	40538	2584.8	16QAM	50	25	20.9	19.31
40340	2565	16QAM	50	25	40538	2584.8	16QAM	50	49	20.9	19.19
40340	2565	16QAM	50	49	40538	2584.8	16QAM	50	0	20.87	19.33
40340	2565	16QAM	50	49	40538	2584.8	16QAM	50	25	20.87	19.34
40340	2565	16QAM	50	49	40538	2584.8	16QAM	50	49	20.87	19.25
40340	2565	16QAM	100	0	40538	2584.8	16QAM	100	0	20.94	19.72
40340	2565	64QAM	1	99	40538	2584.8	64QAM	1	0	20.61	19.83
40340	2565	64QAM	1	99	40538	2584.8	64QAM	1	49	20.61	18.03
40340	2565	64QAM	1	99	40538	2584.8	64QAM	1	99	20.61	18.01
40340	2565	64QAM	1	0	40538	2584.8	64QAM	1	0	20.66	18.11
40340	2565	64QAM	1	0	40538	2584.8	64QAM	1	49	20.66	13.93

40340	2565	64QAM	1	0	40538	2584.8	64QAM	1	99	20.66	13.89
40340	2565	64QAM	1	49	40538	2584.8	64QAM	1	0	20.71	18.08
40340	2565	64QAM	1	49	40538	2584.8	64QAM	1	49	20.71	17.98
40340	2565	64QAM	1	49	40538	2584.8	64QAM	1	99	20.71	13.86
40340	2565	64QAM	50	0	40538	2584.8	64QAM	50	0	19.99	19.37
40340	2565	64QAM	50	0	40538	2584.8	64QAM	50	25	19.99	19.26
40340	2565	64QAM	50	0	40538	2584.8	64QAM	50	49	19.99	19.22
40340	2565	64QAM	50	25	40538	2584.8	64QAM	50	0	19.97	19.32
40340	2565	64QAM	50	25	40538	2584.8	64QAM	50	25	19.97	19.29
40340	2565	64QAM	50	25	40538	2584.8	64QAM	50	49	19.97	19.24
40340	2565	64QAM	50	49	40538	2584.8	64QAM	50	0	19.86	19.33
40340	2565	64QAM	50	49	40538	2584.8	64QAM	50	25	19.86	19.25
40340	2565	64QAM	50	49	40538	2584.8	64QAM	50	49	19.86	19.19
40340	2565	64QAM	100	0	40538	2584.8	64QAM	100	0	19.89	19.81