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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: ES3-3347_Mar18

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3347

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

BN 04-05-2018

Calibration date: March 27, 2018

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	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

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

Issued: March 27, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) **Accreditation No.: SCS 0108**
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,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., ϑ = 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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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*.
- *DCPx,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
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,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 ≤ 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 *NORMx,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 *NORMx* (no uncertainty required).

Probe ES3DV3

SN:3347

Manufactured:	March 15, 2012
Repaired:	March 15, 2018
Calibrated:	March 27, 2018

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3347

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.15	1.18	1.21	± 10.1 %
DCP (mV)[B]	101.9	105.1	102.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	201.8	±3.3 %
		Y	0.0	0.0	1.0		203.9	
		Z	0.0	0.0	1.0		204.8	

Note: For details on UID parameters see Appendix.

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	52.41	376.6	35.43	28.01	1.852	5.10	0.578	0.488	1.008
Y	42.65	300.9	34.31	25.12	1.310	5.10	1.279	0.204	1.011
Z	48.12	344.8	35.26	27.10	1.587	5.10	0.868	0.385	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 E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3347

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	6.77	6.77	6.77	0.65	1.32	± 12.0 %
835	41.5	0.90	6.41	6.41	6.41	0.40	1.64	± 12.0 %
1750	40.1	1.37	5.58	5.58	5.58	0.54	1.42	± 12.0 %
1900	40.0	1.40	5.36	5.36	5.36	0.80	1.16	± 12.0 %
2300	39.5	1.67	5.11	5.11	5.11	0.74	1.29	± 12.0 %
2450	39.2	1.80	4.81	4.81	4.81	0.80	1.24	± 12.0 %
2600	39.0	1.96	4.66	4.66	4.66	0.75	1.25	± 12.0 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3347

Calibration Parameter Determined in Body Tissue Simulating Media

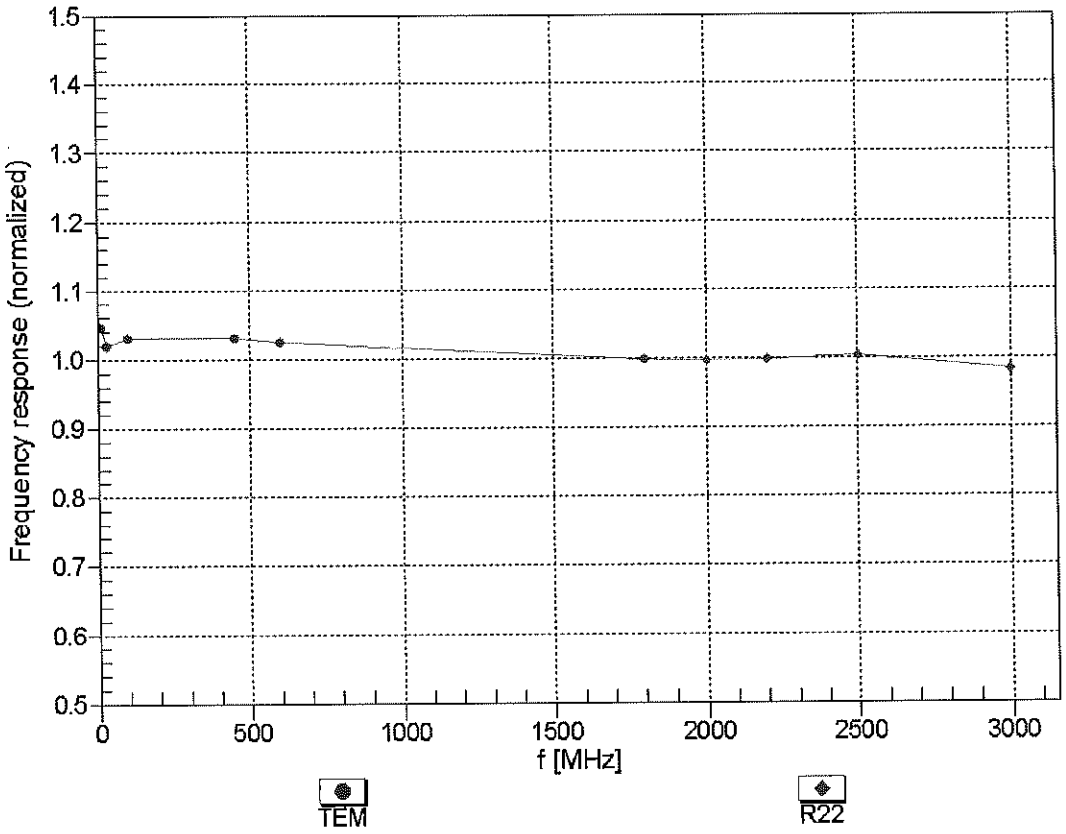
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	6.59	6.59	6.59	0.77	1.22	± 12.0 %
835	55.2	0.97	6.37	6.37	6.37	0.80	1.17	± 12.0 %
1750	53.4	1.49	5.17	5.17	5.17	0.49	1.59	± 12.0 %
1900	53.3	1.52	4.94	4.94	4.94	0.52	1.49	± 12.0 %
2300	52.9	1.81	4.74	4.74	4.74	0.80	1.25	± 12.0 %
2450	52.7	1.95	4.64	4.64	4.64	0.75	1.20	± 12.0 %
2600	52.5	2.16	4.49	4.49	4.49	0.80	1.20	± 12.0 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

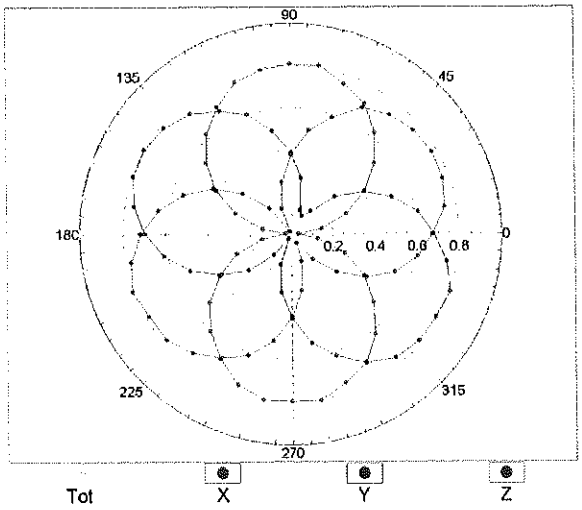
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



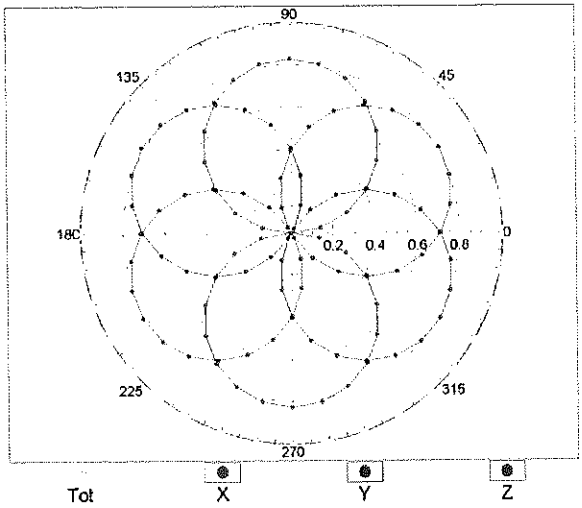
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

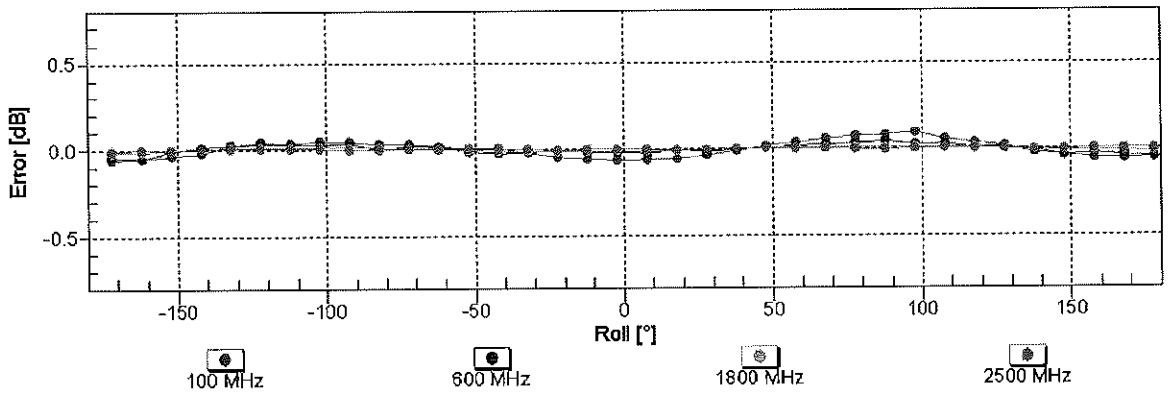
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



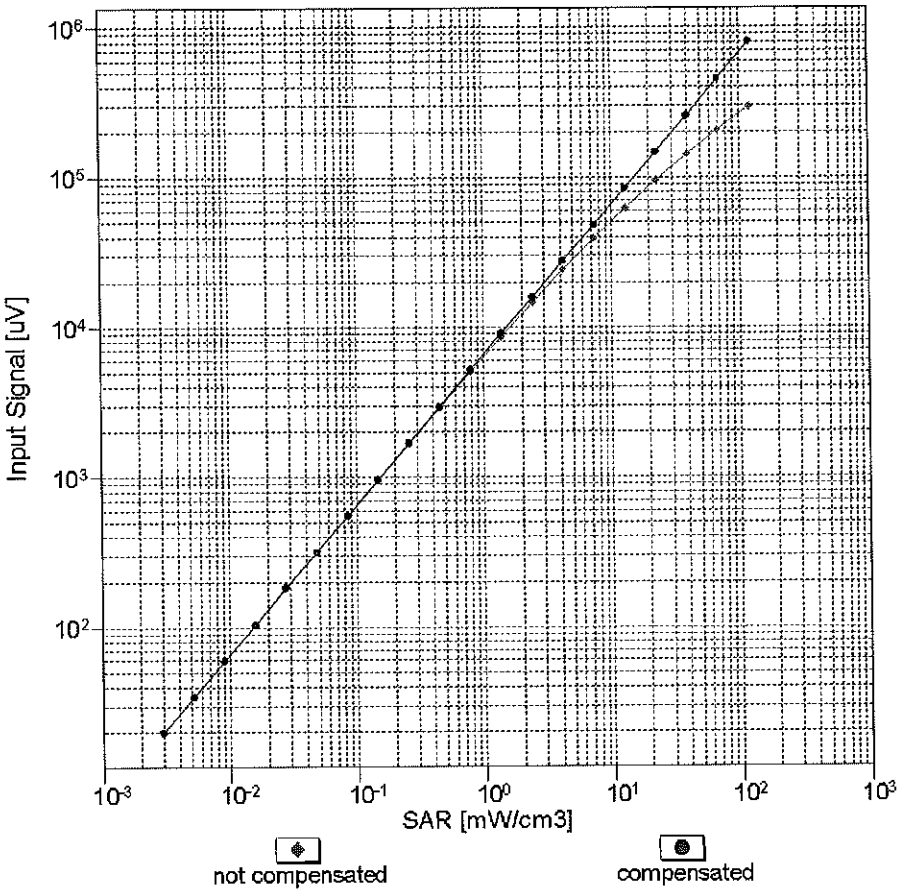
f=1800 MHz,R22

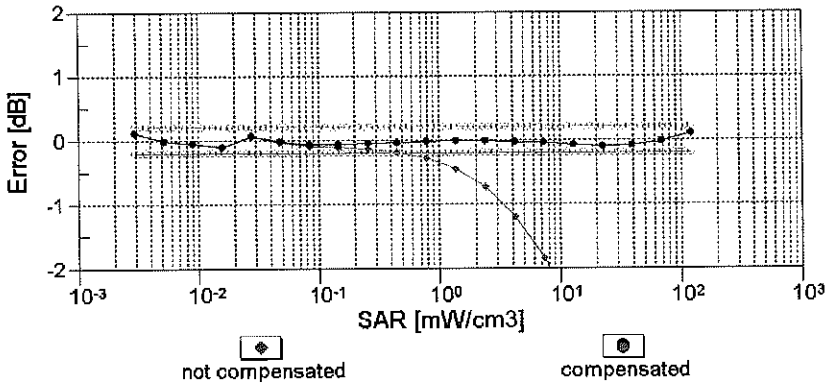




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

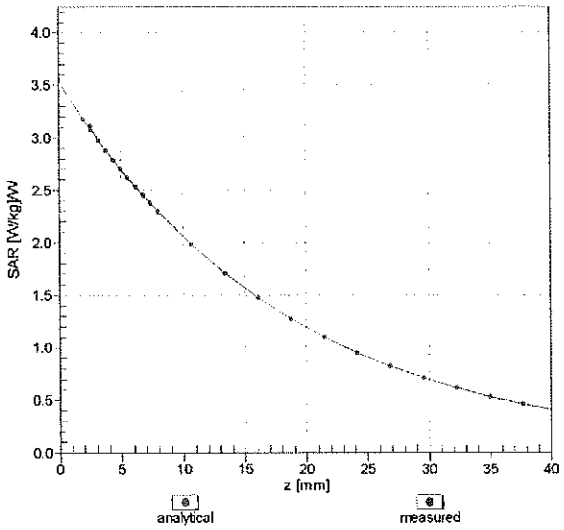




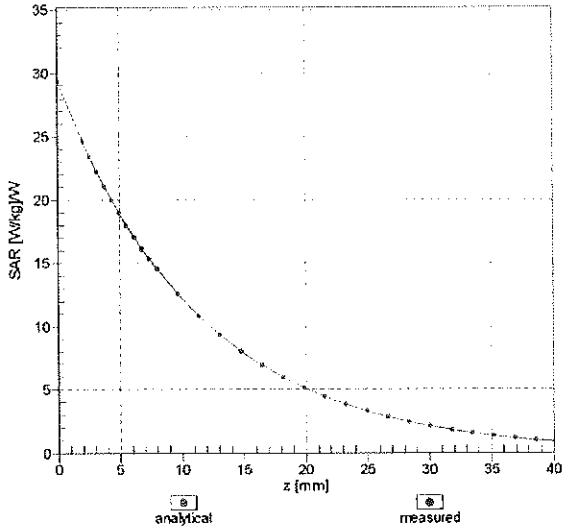
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

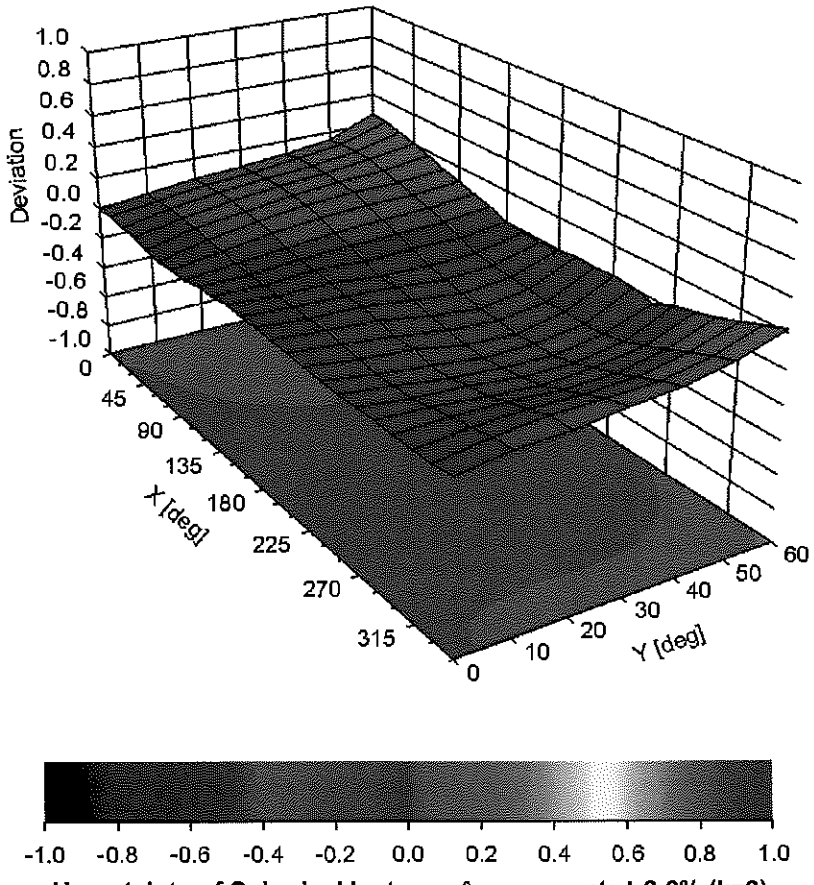


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3347

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-16.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max Unc^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	201.8	± 3.3 %
		Y	0.00	0.00	1.00		203.9	
		Z	0.00	0.00	1.00		204.8	
10010-CAA	SAR Validation (Square, 100ms, 10ms)	X	7.57	78.06	17.49	10.00	25.0	± 9.6 %
		Y	9.85	82.39	18.69		25.0	
		Z	7.35	77.81	17.08		25.0	
10011-CAB	UMTS-FDD (WCDMA)	X	0.93	66.02	14.08	0.00	150.0	± 9.6 %
		Y	0.97	66.67	14.52		150.0	
		Z	0.93	66.21	14.17		150.0	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.22	64.40	15.16	0.41	150.0	± 9.6 %
		Y	1.24	64.68	15.35		150.0	
		Z	1.21	64.49	15.23		150.0	
10013-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	5.02	67.09	17.26	1.46	150.0	± 9.6 %
		Y	4.93	67.32	17.31		150.0	
		Z	4.97	67.16	17.27		150.0	
10021-DAC	GSM-FDD (TDMA, GMSK)	X	91.36	118.07	31.34	9.39	50.0	± 9.6 %
		Y	100.00	119.30	31.14		50.0	
		Z	100.00	118.75	31.10		50.0	
10023-DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	58.54	111.16	29.65	9.57	50.0	± 9.6 %
		Y	100.00	119.20	31.14		50.0	
		Z	100.00	118.71	31.13		50.0	
10024-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	100.00	115.85	28.82	6.56	60.0	± 9.6 %
		Y	100.00	116.32	28.70		60.0	
		Z	100.00	115.26	28.36		60.0	
10025-DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	19.84	109.66	41.73	12.57	50.0	± 9.6 %
		Y	49.03	143.08	53.86		50.0	
		Z	21.37	113.26	43.24		50.0	
10026-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	21.22	106.46	36.65	9.56	60.0	± 9.6 %
		Y	31.58	119.85	41.69		60.0	
		Z	22.56	108.96	37.62		60.0	
10027-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	114.36	27.28	4.80	80.0	± 9.6 %
		Y	100.00	115.58	27.56		80.0	
		Z	100.00	113.91	26.92		80.0	
10028-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	113.86	26.30	3.55	100.0	± 9.6 %
		Y	100.00	115.98	27.02		100.0	
		Z	100.00	113.53	26.01		100.0	
10029-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	12.94	95.02	31.64	7.80	80.0	± 9.6 %
		Y	14.07	99.40	33.81		80.0	
		Z	12.89	95.72	32.02		80.0	
10030-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	100.00	113.99	27.43	5.30	70.0	± 9.6 %
		Y	100.00	114.60	27.41		70.0	
		Z	100.00	113.38	26.98		70.0	
10031-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	100.00	111.77	23.93	1.88	100.0	± 9.6 %
		Y	100.00	115.39	25.33		100.0	
		Z	100.00	111.26	23.59		100.0	

10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	100.00	111.85	22.94	1.17	100.0	± 9.6 %
		Y	100.00	118.40	25.59		100.0	
		Z	100.00	111.34	22.62		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	23.91	101.19	27.41	5.30	70.0	± 9.6 %
		Y	36.18	107.81	28.88		70.0	
		Z	30.63	104.89	28.18		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	6.24	84.08	20.44	1.88	100.0	± 9.6 %
		Y	7.24	85.92	20.55		100.0	
		Z	6.85	85.19	20.50		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	3.29	76.95	17.63	1.17	100.0	± 9.6 %
		Y	3.58	78.09	17.57		100.0	
		Z	3.42	77.43	17.51		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	32.79	106.39	28.91	5.30	70.0	± 9.6 %
		Y	55.24	114.58	30.68		70.0	
		Z	45.73	111.34	29.95		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	5.86	83.28	20.13	1.88	100.0	± 9.6 %
		Y	6.54	84.66	20.12		100.0	
		Z	6.31	84.13	20.12		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	3.39	77.59	17.96	1.17	100.0	± 9.6 %
		Y	3.66	78.64	17.87		100.0	
		Z	3.53	78.11	17.85		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	1.52	69.16	14.18	0.00	150.0	± 9.6 %
		Y	1.40	68.90	13.55		150.0	
		Z	1.46	69.03	13.83		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	100.00	114.62	28.47	7.78	50.0	± 9.6 %
		Y	100.00	114.70	28.14		50.0	
		Z	100.00	113.88	27.92		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.01	121.88	0.68	0.00	150.0	± 9.6 %
		Y	0.00	97.83	1.91		150.0	
		Z	0.01	122.55	0.35		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	17.94	92.17	26.06	13.80	25.0	± 9.6 %
		Y	42.19	107.21	29.95		25.0	
		Z	24.74	97.63	27.36		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	22.69	96.29	25.94	10.79	40.0	± 9.6 %
		Y	68.20	113.74	30.23		40.0	
		Z	32.65	101.85	27.19		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	16.99	92.79	25.84	9.03	50.0	± 9.6 %
		Y	27.63	101.84	28.34		50.0	
		Z	20.13	95.81	26.57		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	9.12	87.95	28.36	6.55	100.0	± 9.6 %
		Y	8.98	89.45	29.43		100.0	
		Z	8.90	88.06	28.51		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.37	66.39	16.16	0.61	110.0	± 9.6 %
		Y	1.38	66.59	16.33		110.0	
		Z	1.36	66.49	16.23		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	100.00	128.08	31.98	1.30	110.0	± 9.6 %
		Y	100.00	131.22	33.31		110.0	
		Z	100.00	128.65	32.15		110.0	

10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	9.25	94.71	26.12	2.04	110.0	± 9.6 %
		Y	9.59	96.73	27.06		110.0	
		Z	10.28	96.95	26.85		110.0	
10062-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.74	66.85	16.53	0.49	100.0	± 9.6 %
		Y	4.66	67.04	16.57		100.0	
		Z	4.70	66.90	16.54		100.0	
10063-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.78	67.00	16.67	0.72	100.0	± 9.6 %
		Y	4.69	67.19	16.70		100.0	
		Z	4.73	67.05	16.68		100.0	
10064-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	5.09	67.32	16.93	0.86	100.0	± 9.6 %
		Y	4.97	67.46	16.94		100.0	
		Z	5.03	67.35	16.93		100.0	
10065-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	4.99	67.34	17.10	1.21	100.0	± 9.6 %
		Y	4.88	67.46	17.11		100.0	
		Z	4.93	67.36	17.10		100.0	
10066-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	5.05	67.46	17.33	1.46	100.0	± 9.6 %
		Y	4.92	67.57	17.33		100.0	
		Z	4.98	67.48	17.32		100.0	
10067-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	5.36	67.67	17.81	2.04	100.0	± 9.6 %
		Y	5.25	67.92	17.88		100.0	
		Z	5.30	67.73	17.82		100.0	
10068-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	5.48	67.95	18.15	2.55	100.0	± 9.6 %
		Y	5.33	68.04	18.16		100.0	
		Z	5.40	67.94	18.13		100.0	
10069-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.56	67.94	18.35	2.67	100.0	± 9.6 %
		Y	5.42	68.11	18.40		100.0	
		Z	5.49	67.96	18.34		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	5.16	67.32	17.64	1.99	100.0	± 9.6 %
		Y	5.07	67.53	17.70		100.0	
		Z	5.11	67.37	17.65		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	5.20	67.83	17.95	2.30	100.0	± 9.6 %
		Y	5.09	67.99	18.00		100.0	
		Z	5.14	67.86	17.96		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	5.32	68.17	18.37	2.83	100.0	± 9.6 %
		Y	5.22	68.36	18.44		100.0	
		Z	5.26	68.20	18.38		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	5.35	68.22	18.60	3.30	100.0	± 9.6 %
		Y	5.26	68.43	18.68		100.0	
		Z	5.29	68.25	18.61		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	5.48	68.62	19.07	3.82	90.0	± 9.6 %
		Y	5.35	68.73	19.11		90.0	
		Z	5.40	68.60	19.05		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	5.50	68.45	19.21	4.15	90.0	± 9.6 %
		Y	5.40	68.64	19.31		90.0	
		Z	5.44	68.46	19.21		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	5.54	68.54	19.31	4.30	90.0	± 9.6 %
		Y	5.44	68.76	19.43		90.0	
		Z	5.48	68.56	19.32		90.0	

10081-CAB	CDMA2000 (1xRTT, RC3)	X	0.74	64.32	11.31	0.00	150.0	± 9.6 %
		Y	0.70	64.20	10.81		150.0	
		Z	0.71	64.15	10.92		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	1.69	62.26	7.32	4.77	80.0	± 9.6 %
		Y	1.49	62.02	6.99		80.0	
		Z	1.55	61.83	6.90		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	100.00	115.94	28.89	6.56	60.0	± 9.6 %
		Y	100.00	116.39	28.75		60.0	
		Z	100.00	115.35	28.42		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	1.73	66.76	14.97	0.00	150.0	± 9.6 %
		Y	1.76	67.41	15.16		150.0	
		Z	1.72	67.00	15.02		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.69	66.71	14.93	0.00	150.0	± 9.6 %
		Y	1.72	67.36	15.13		150.0	
		Z	1.69	66.94	14.98		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	21.17	106.37	36.62	9.56	60.0	± 9.6 %
		Y	31.53	119.75	41.66		60.0	
		Z	22.53	108.88	37.59		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	3.02	69.66	16.13	0.00	150.0	± 9.6 %
		Y	2.98	69.86	16.33		150.0	
		Z	2.99	69.71	16.19		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.20	67.30	15.63	0.00	150.0	± 9.6 %
		Y	3.15	67.42	15.72		150.0	
		Z	3.17	67.31	15.65		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.31	67.28	15.74	0.00	150.0	± 9.6 %
		Y	3.26	67.39	15.81		150.0	
		Z	3.27	67.30	15.76		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	8.39	78.42	21.27	3.98	65.0	± 9.6 %
		Y	8.55	79.75	21.92		65.0	
		Z	8.43	78.92	21.50		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	8.28	76.92	21.52	3.98	65.0	± 9.6 %
		Y	8.11	77.48	21.85		65.0	
		Z	8.18	77.09	21.61		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	7.63	75.31	21.13	3.98	65.0	± 9.6 %
		Y	7.72	76.48	21.73		65.0	
		Z	7.57	75.55	21.26		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	2.65	68.92	15.95	0.00	150.0	± 9.6 %
		Y	2.59	69.14	16.15		150.0	
		Z	2.61	68.99	16.01		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	2.86	67.08	15.50	0.00	150.0	± 9.6 %
		Y	2.80	67.24	15.55		150.0	
		Z	2.82	67.11	15.51		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	2.15	67.97	15.52	0.00	150.0	± 9.6 %
		Y	2.09	68.27	15.68		150.0	
		Z	2.11	68.06	15.56		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.54	67.60	15.65	0.00	150.0	± 9.6 %
		Y	2.49	67.90	15.64		150.0	
		Z	2.51	67.74	15.66		150.0	

10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	2.98	67.08	15.57	0.00	150.0	± 9.6 %
		Y	2.92	67.27	15.62		150.0	
		Z	2.94	67.13	15.58		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.70	67.76	15.81	0.00	150.0	± 9.6 %
		Y	2.63	68.07	15.78		150.0	
		Z	2.66	67.92	15.82		150.0	
10114-CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	5.13	67.22	16.34	0.00	150.0	± 9.6 %
		Y	5.06	67.35	16.39		150.0	
		Z	5.10	67.28	16.37		150.0	
10115-CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.46	67.47	16.48	0.00	150.0	± 9.6 %
		Y	5.32	67.42	16.43		150.0	
		Z	5.39	67.43	16.46		150.0	
10116-CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.25	67.46	16.39	0.00	150.0	± 9.6 %
		Y	5.15	67.53	16.41		150.0	
		Z	5.20	67.47	16.40		150.0	
10117-CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	5.10	67.11	16.30	0.00	150.0	± 9.6 %
		Y	5.03	67.22	16.34		150.0	
		Z	5.06	67.11	16.31		150.0	
10118-CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.56	67.71	16.61	0.00	150.0	± 9.6 %
		Y	5.40	67.63	16.55		150.0	
		Z	5.48	67.67	16.59		150.0	
10119-CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	5.22	67.39	16.37	0.00	150.0	± 9.6 %
		Y	5.13	67.49	16.40		150.0	
		Z	5.18	67.42	16.38		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.35	67.28	15.66	0.00	150.0	± 9.6 %
		Y	3.29	67.41	15.73		150.0	
		Z	3.31	67.30	15.68		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.47	67.38	15.84	0.00	150.0	± 9.6 %
		Y	3.41	67.52	15.90		150.0	
		Z	3.43	67.42	15.86		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	1.91	67.75	15.10	0.00	150.0	± 9.6 %
		Y	1.84	68.07	15.11		150.0	
		Z	1.87	67.86	15.08		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.37	68.04	15.25	0.00	150.0	± 9.6 %
		Y	2.29	68.28	15.02		150.0	
		Z	2.33	68.17	15.16		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	2.20	66.14	13.84	0.00	150.0	± 9.6 %
		Y	2.08	66.17	13.48		150.0	
		Z	2.13	66.11	13.65		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	1.17	64.40	11.32	0.00	150.0	± 9.6 %
		Y	0.99	63.23	9.93		150.0	
		Z	1.08	63.80	10.61		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	2.07	66.79	12.08	0.00	150.0	± 9.6 %
		Y	1.74	65.46	10.58		150.0	
		Z	1.93	66.25	11.43		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	2.41	68.68	13.11	0.00	150.0	± 9.6 %
		Y	2.02	67.13	11.50		150.0	
		Z	2.26	68.13	12.45		150.0	

10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	2.87	67.13	15.54	0.00	150.0	± 9.6 %
		Y	2.81	67.29	15.59		150.0	
		Z	2.83	67.17	15.55		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	2.99	67.13	15.61	0.00	150.0	± 9.6 %
		Y	2.93	67.31	15.66		150.0	
		Z	2.95	67.18	15.62		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	9.21	81.33	22.45	3.98	65.0	± 9.6 %
		Y	9.55	83.12	23.24		65.0	
		Z	9.38	82.15	22.79		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	7.89	77.12	21.32	3.98	65.0	± 9.6 %
		Y	7.75	77.78	21.62		65.0	
		Z	7.80	77.32	21.39		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	8.33	78.05	22.06	3.98	65.0	± 9.6 %
		Y	8.20	78.76	22.36		65.0	
		Z	8.27	78.34	22.17		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.19	68.34	15.77	0.00	150.0	± 9.6 %
		Y	2.13	68.58	15.88		150.0	
		Z	2.15	68.43	15.80		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.54	67.61	15.66	0.00	150.0	± 9.6 %
		Y	2.49	67.93	15.66		150.0	
		Z	2.51	67.76	15.67		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	1.75	67.70	14.83	0.00	150.0	± 9.6 %
		Y	1.67	67.86	14.67		150.0	
		Z	1.70	67.75	14.73		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	2.01	66.49	13.77	0.00	150.0	± 9.6 %
		Y	1.89	66.41	13.28		150.0	
		Z	1.95	66.44	13.53		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.70	67.82	15.85	0.00	150.0	± 9.6 %
		Y	2.64	68.13	15.83		150.0	
		Z	2.67	67.98	15.86		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	2.11	66.90	14.04	0.00	150.0	± 9.6 %
		Y	1.98	66.74	13.50		150.0	
		Z	2.04	66.83	13.79		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	2.69	68.21	15.87	0.00	150.0	± 9.6 %
		Y	2.64	68.50	16.02		150.0	
		Z	2.66	68.34	15.93		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	2.88	67.04	15.53	0.00	150.0	± 9.6 %
		Y	2.82	67.25	15.56		150.0	
		Z	2.84	67.11	15.53		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	2.99	67.17	15.64	0.00	150.0	± 9.6 %
		Y	2.93	67.43	15.68		150.0	
		Z	2.96	67.27	15.66		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	3.67	69.76	19.07	3.01	150.0	± 9.6 %
		Y	3.59	70.61	19.72		150.0	
		Z	3.64	70.17	19.36		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	4.60	72.78	19.56	3.01	150.0	± 9.6 %
		Y	4.59	74.59	20.58		150.0	
		Z	4.60	73.54	19.97		150.0	

10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	5.10	75.00	20.86	3.01	150.0	± 9.6 %
		Y	5.17	77.15	22.00		150.0	
		Z	5.18	76.08	21.41		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	3.14	69.82	19.09	3.01	150.0	± 9.6 %
		Y	2.99	70.11	19.57		150.0	
		Z	3.08	69.99	19.30		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	4.48	76.11	21.47	3.01	150.0	± 9.6 %
		Y	4.42	77.92	22.61		150.0	
		Z	4.51	77.09	22.03		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	3.64	71.74	18.65	3.01	150.0	± 9.6 %
		Y	3.56	73.31	19.70		150.0	
		Z	3.59	72.29	19.01		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	21.10	104.74	32.18	6.02	65.0	± 9.6 %
		Y	44.31	124.23	38.59		65.0	
		Z	24.87	109.58	33.89		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	37.36	109.91	31.76	6.02	65.0	± 9.6 %
		Y	100.00	131.53	37.83		65.0	
		Z	66.45	121.49	34.95		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	28.71	103.81	29.50	6.02	65.0	± 9.6 %
		Y	93.12	128.22	36.43		65.0	
		Z	36.57	109.34	31.20		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	3.10	69.50	18.83	3.01	150.0	± 9.6 %
		Y	2.96	69.84	19.35		150.0	
		Z	3.04	69.66	19.04		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	4.49	76.13	21.48	3.01	150.0	± 9.6 %
		Y	4.43	77.95	22.63		150.0	
		Z	4.52	77.11	22.04		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	3.13	69.65	18.93	3.01	150.0	± 9.6 %
		Y	2.98	69.97	19.42		150.0	
		Z	3.07	69.81	19.14		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	4.43	75.88	21.35	3.01	150.0	± 9.6 %
		Y	4.39	77.75	22.52		150.0	
		Z	4.47	76.86	21.91		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	4.01	73.75	19.90	3.01	150.0	± 9.6 %
		Y	3.96	75.54	21.04		150.0	
		Z	4.01	74.52	20.37		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	3.63	71.66	18.60	3.01	150.0	± 9.6 %
		Y	3.55	73.25	19.66		150.0	
		Z	3.59	72.21	18.96		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	3.13	69.64	18.92	3.01	150.0	± 9.6 %
		Y	2.98	69.95	19.42		150.0	
		Z	3.06	69.80	19.13		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	4.42	75.86	21.34	3.01	150.0	± 9.6 %
		Y	4.38	77.72	22.51		150.0	
		Z	4.46	76.83	21.90		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	3.62	71.63	18.59	3.01	150.0	± 9.6 %
		Y	3.55	73.22	19.65		150.0	
		Z	3.58	72.19	18.94		150.0	

10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	3.14	69.68	18.95	3.01	150.0	± 9.6 %
		Y	2.99	69.99	19.44		150.0	
		Z	3.07	69.84	19.16		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	4.45	75.93	21.38	3.01	150.0	± 9.6 %
		Y	4.40	77.80	22.55		150.0	
		Z	4.48	76.92	21.94		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	3.64	71.70	18.62	3.01	150.0	± 9.6 %
		Y	3.56	73.30	19.69		150.0	
		Z	3.60	72.26	18.98		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	3.15	69.73	19.01	3.01	150.0	± 9.6 %
		Y	3.00	70.06	19.51		150.0	
		Z	3.08	69.90	19.22		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	4.60	76.65	21.77	3.01	150.0	± 9.6 %
		Y	4.55	78.49	22.93		150.0	
		Z	4.65	77.69	22.36		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	3.72	72.15	18.90	3.01	150.0	± 9.6 %
		Y	3.65	73.76	19.97		150.0	
		Z	3.69	72.74	19.28		150.0	
10193-CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.52	66.58	16.02	0.00	150.0	± 9.6 %
		Y	4.45	66.79	16.05		150.0	
		Z	4.48	66.63	16.03		150.0	
10194-CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.70	66.91	16.15	0.00	150.0	± 9.6 %
		Y	4.60	67.08	16.18		150.0	
		Z	4.65	66.95	16.16		150.0	
10195-CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.74	66.94	16.17	0.00	150.0	± 9.6 %
		Y	4.65	67.11	16.20		150.0	
		Z	4.69	66.98	16.18		150.0	
10196-CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.53	66.65	16.05	0.00	150.0	± 9.6 %
		Y	4.44	66.83	16.06		150.0	
		Z	4.48	66.69	16.05		150.0	
10197-CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.72	66.93	16.16	0.00	150.0	± 9.6 %
		Y	4.62	67.10	16.19		150.0	
		Z	4.66	66.97	16.17		150.0	
10198-CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.75	66.96	16.18	0.00	150.0	± 9.6 %
		Y	4.64	67.13	16.21		150.0	
		Z	4.69	67.00	16.19		150.0	
10219-CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.48	66.66	16.00	0.00	150.0	± 9.6 %
		Y	4.39	66.84	16.01		150.0	
		Z	4.43	66.70	16.00		150.0	
10220-CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.71	66.91	16.16	0.00	150.0	± 9.6 %
		Y	4.61	67.06	16.18		150.0	
		Z	4.66	66.94	16.16		150.0	
10221-CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.76	66.89	16.17	0.00	150.0	± 9.6 %
		Y	4.65	67.06	16.20		150.0	
		Z	4.70	66.93	16.18		150.0	
10222-CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	5.08	67.11	16.29	0.00	150.0	± 9.6 %
		Y	5.00	67.21	16.33		150.0	
		Z	5.03	67.12	16.30		150.0	

10223-CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.40	67.34	16.44	0.00	150.0	± 9.6 %
		Y	5.30	67.47	16.48		150.0	
		Z	5.35	67.37	16.45		150.0	
10224-CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	5.12	67.22	16.27	0.00	150.0	± 9.6 %
		Y	5.04	67.32	16.31		150.0	
		Z	5.08	67.23	16.28		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	2.77	65.87	15.07	0.00	150.0	± 9.6 %
		Y	2.71	66.11	14.95		150.0	
		Z	2.73	65.95	15.01		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	40.90	111.69	32.33	6.02	65.0	± 9.6 %
		Y	100.00	131.74	37.97		65.0	
		Z	76.08	124.13	35.71		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	32.04	105.79	30.14	6.02	65.0	± 9.6 %
		Y	100.00	129.20	36.63		65.0	
		Z	56.03	116.66	33.17		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	32.49	113.40	34.73	6.02	65.0	± 9.6 %
		Y	63.93	131.79	40.55		65.0	
		Z	42.68	120.45	36.94		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	37.48	109.96	31.78	6.02	65.0	± 9.6 %
		Y	100.00	131.51	37.84		65.0	
		Z	66.68	121.54	34.97		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	29.78	104.42	29.68	6.02	65.0	± 9.6 %
		Y	100.00	129.07	36.54		65.0	
		Z	50.21	114.61	32.57		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	30.12	111.79	34.20	6.02	65.0	± 9.6 %
		Y	57.30	129.38	39.87		65.0	
		Z	38.78	118.39	36.30		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	37.48	109.97	31.78	6.02	65.0	± 9.6 %
		Y	100.00	131.53	37.84		65.0	
		Z	66.72	121.56	34.98		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	29.77	104.42	29.68	6.02	65.0	± 9.6 %
		Y	100.00	129.09	36.55		65.0	
		Z	50.19	114.62	32.57		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	28.05	110.17	33.63	6.02	65.0	± 9.6 %
		Y	51.99	127.09	39.16		65.0	
		Z	35.54	116.41	35.65		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	37.64	110.05	31.80	6.02	65.0	± 9.6 %
		Y	100.00	131.54	37.84		65.0	
		Z	67.18	121.70	35.01		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	30.09	104.58	29.72	6.02	65.0	± 9.6 %
		Y	100.00	129.03	36.52		65.0	
		Z	50.96	114.84	32.62		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	30.42	112.00	34.26	6.02	65.0	± 9.6 %
		Y	58.39	129.80	39.98		65.0	
		Z	39.25	118.66	36.38		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	37.48	109.98	31.78	6.02	65.0	± 9.6 %
		Y	100.00	131.54	37.84		65.0	
		Z	66.77	121.59	34.98		65.0	

10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	29.75	104.43	29.68	6.02	65.0	± 9.6 %
		Y	100.00	129.11	36.55		65.0	
		Z	50.17	114.63	32.57		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	30.30	111.94	34.24	6.02	65.0	± 9.6 %
		Y	58.14	129.72	39.96		65.0	
		Z	39.09	118.59	36.36		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	11.80	86.80	27.35	6.98	65.0	± 9.6 %
		Y	13.67	92.53	29.81		65.0	
		Z	12.27	88.56	28.08		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	10.15	83.59	26.03	6.98	65.0	± 9.6 %
		Y	12.26	90.20	28.90		65.0	
		Z	10.49	85.23	26.75		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	8.15	80.45	25.67	6.98	65.0	± 9.6 %
		Y	9.07	85.16	28.03		65.0	
		Z	8.20	81.43	26.18		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	8.77	79.58	20.12	3.98	65.0	± 9.6 %
		Y	8.68	79.98	19.73		65.0	
		Z	8.93	80.10	20.07		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	8.56	78.94	19.83	3.98	65.0	± 9.6 %
		Y	8.27	79.00	19.30		65.0	
		Z	8.60	79.28	19.71		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	9.05	82.96	21.42	3.98	65.0	± 9.6 %
		Y	8.67	82.79	20.89		65.0	
		Z	9.07	83.18	21.25		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	7.31	77.47	20.01	3.98	65.0	± 9.6 %
		Y	6.88	77.10	19.42		65.0	
		Z	7.16	77.42	19.78		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	7.23	76.85	19.75	3.98	65.0	± 9.6 %
		Y	6.75	76.40	19.13		65.0	
		Z	7.04	76.72	19.48		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	10.55	85.88	23.24	3.98	65.0	± 9.6 %
		Y	11.23	87.71	23.62		65.0	
		Z	11.08	87.02	23.49		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	8.37	79.97	22.44	3.98	65.0	± 9.6 %
		Y	8.25	80.64	22.58		65.0	
		Z	8.37	80.40	22.54		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	7.79	77.55	21.17	3.98	65.0	± 9.6 %
		Y	7.62	78.12	21.26		65.0	
		Z	7.71	77.78	21.18		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	10.26	85.03	23.77	3.98	65.0	± 9.6 %
		Y	11.07	87.53	24.67		65.0	
		Z	10.72	86.30	24.20		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	7.69	76.53	21.09	3.98	65.0	± 9.6 %
		Y	7.57	77.22	21.35		65.0	
		Z	7.61	76.75	21.15		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	8.11	77.42	21.76	3.98	65.0	± 9.6 %
		Y	7.99	78.11	22.01		65.0	
		Z	8.04	77.70	21.84		65.0	

10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	8.87	80.90	22.51	3.98	65.0	± 9.6 %
		Y	9.18	82.66	23.26		65.0	
		Z	9.01	81.69	22.82		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	7.19	76.04	17.83	3.98	65.0	± 9.6 %
		Y	6.37	74.72	16.60		65.0	
		Z	6.91	75.63	17.34		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	6.95	75.20	17.41	3.98	65.0	± 9.6 %
		Y	6.01	73.59	16.03		65.0	
		Z	6.60	74.62	16.84		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	7.08	78.57	19.08	3.98	65.0	± 9.6 %
		Y	5.96	76.36	17.58		65.0	
		Z	6.63	77.70	18.41		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	7.72	78.37	20.87	3.98	65.0	± 9.6 %
		Y	7.43	78.48	20.58		65.0	
		Z	7.64	78.54	20.77		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	7.71	78.04	20.75	3.98	65.0	± 9.6 %
		Y	7.37	78.04	20.41		65.0	
		Z	7.60	78.14	20.63		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	9.91	84.71	23.20	3.98	65.0	± 9.6 %
		Y	10.51	86.66	23.72		65.0	
		Z	10.31	85.78	23.47		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	8.35	79.91	22.40	3.98	65.0	± 9.6 %
		Y	8.23	80.57	22.53		65.0	
		Z	8.35	80.33	22.49		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	7.78	77.53	21.17	3.98	65.0	± 9.6 %
		Y	7.61	78.09	21.25		65.0	
		Z	7.70	77.76	21.18		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	10.16	84.83	23.68	3.98	65.0	± 9.6 %
		Y	10.94	87.30	24.57		65.0	
		Z	10.60	86.08	24.10		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	7.89	77.12	21.33	3.98	65.0	± 9.6 %
		Y	7.75	77.78	21.62		65.0	
		Z	7.80	77.33	21.40		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	8.32	78.04	22.05	3.98	65.0	± 9.6 %
		Y	8.20	78.75	22.36		65.0	
		Z	8.26	78.33	22.16		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	9.19	81.29	22.44	3.98	65.0	± 9.6 %
		Y	9.53	83.07	23.22		65.0	
		Z	9.36	82.10	22.77		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	8.37	76.65	21.54	3.98	65.0	± 9.6 %
		Y	8.20	77.22	21.85		65.0	
		Z	8.27	76.83	21.63		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	8.29	76.22	21.43	3.98	65.0	± 9.6 %
		Y	8.13	76.76	21.72		65.0	
		Z	8.20	76.38	21.51		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	8.55	78.25	21.44	3.98	65.0	± 9.6 %
		Y	8.58	79.32	21.98		65.0	
		Z	8.56	78.72	21.66		65.0	

10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	X	2.53	66.08	14.88	0.00	150.0	± 9.6 %
		Y	2.52	66.54	14.91		150.0	
		Z	2.51	66.24	14.87		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	1.51	66.90	14.72	0.00	150.0	± 9.6 %
		Y	1.52	67.44	14.98		150.0	
		Z	1.50	67.06	14.77		150.0	
10277-CAA	PHS (QPSK)	X	4.49	67.07	11.86	9.03	50.0	± 9.6 %
		Y	3.76	65.67	10.51		50.0	
		Z	4.09	66.15	11.03		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	8.37	78.55	19.37	9.03	50.0	± 9.6 %
		Y	7.19	76.56	17.89		50.0	
		Z	7.75	77.39	18.52		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	8.51	78.75	19.47	9.03	50.0	± 9.6 %
		Y	7.31	76.76	18.01		50.0	
		Z	7.88	77.58	18.63		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	1.28	66.85	12.83	0.00	150.0	± 9.6 %
		Y	1.15	66.36	12.07		150.0	
		Z	1.21	66.57	12.40		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	0.73	64.15	11.20	0.00	150.0	± 9.6 %
		Y	0.69	64.04	10.71		150.0	
		Z	0.69	63.98	10.82		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	0.85	66.79	12.92	0.00	150.0	± 9.6 %
		Y	0.83	67.15	12.67		150.0	
		Z	0.82	66.81	12.63		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	1.14	70.77	15.25	0.00	150.0	± 9.6 %
		Y	1.22	72.07	15.35		150.0	
		Z	1.16	71.38	15.20		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	11.92	86.64	24.71	9.03	50.0	± 9.6 %
		Y	15.63	91.98	26.09		50.0	
		Z	13.21	88.61	25.13		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	2.66	69.01	16.01	0.00	150.0	± 9.6 %
		Y	2.60	69.22	16.21		150.0	
		Z	2.62	69.08	16.08		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	1.46	66.51	13.33	0.00	150.0	± 9.6 %
		Y	1.32	65.99	12.56		150.0	
		Z	1.39	66.26	12.94		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	2.70	69.70	14.37	0.00	150.0	± 9.6 %
		Y	2.67	70.31	14.00		150.0	
		Z	2.72	70.11	14.27		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	2.09	65.56	11.69	0.00	150.0	± 9.6 %
		Y	1.84	65.02	10.77		150.0	
		Z	1.98	65.35	11.29		150.0	
10301-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	5.46	67.87	18.50	4.17	80.0	± 9.6 %
		Y	5.32	68.03	18.43		80.0	
		Z	5.39	67.94	18.48		80.0	
10302-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	5.85	67.98	18.95	4.96	80.0	± 9.6 %
		Y	5.80	68.69	19.24		80.0	
		Z	5.75	67.96	18.88		80.0	

10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	5.66	67.92	18.92	4.96	80.0	± 9.6 %
		Y	5.61	68.61	19.19		80.0	
		Z	5.56	67.86	18.83		80.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	5.35	67.35	18.18	4.17	80.0	± 9.6 %
		Y	5.30	68.04	18.43		80.0	
		Z	5.26	67.36	18.12		80.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	7.05	76.99	23.82	6.02	50.0	± 9.6 %
		Y	7.19	78.32	24.16		50.0	
		Z	6.80	76.50	23.43		50.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	5.82	69.84	20.44	6.02	50.0	± 9.6 %
		Y	5.84	70.99	20.86		50.0	
		Z	6.02	71.90	21.62		50.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	6.31	73.07	22.13	6.02	50.0	± 9.6 %
		Y	5.83	71.38	20.88		50.0	
		Z	6.11	72.72	21.84		50.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	6.39	73.64	22.41	6.02	50.0	± 9.6 %
		Y	5.90	71.88	21.13		50.0	
		Z	6.20	73.31	22.13		50.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	5.91	70.12	20.60	6.02	50.0	± 9.6 %
		Y	5.91	71.23	21.02		50.0	
		Z	6.11	72.19	21.79		50.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	6.22	72.50	21.95	6.02	50.0	± 9.6 %
		Y	5.84	71.19	20.88		50.0	
		Z	6.05	72.25	21.70		50.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	3.00	68.33	15.71	0.00	150.0	± 9.6 %
		Y	2.96	68.52	15.89		150.0	
		Z	2.97	68.38	15.77		150.0	
10313-AAA	iDEN 1:3	X	6.99	77.76	18.02	6.99	70.0	± 9.6 %
		Y	8.29	81.34	19.42		70.0	
		Z	7.24	78.54	18.23		70.0	
10314-AAA	iDEN 1:6	X	10.49	86.54	23.63	10.00	30.0	± 9.6 %
		Y	12.83	91.81	25.63		30.0	
		Z	11.85	89.04	24.41		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	1.08	63.85	14.84	0.17	150.0	± 9.6 %
		Y	1.11	64.19	15.04		150.0	
		Z	1.08	63.97	14.91		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.62	66.77	16.25	0.17	150.0	± 9.6 %
		Y	4.54	66.97	16.29		150.0	
		Z	4.57	66.82	16.26		150.0	
10317-AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.62	66.77	16.25	0.17	150.0	± 9.6 %
		Y	4.54	66.97	16.29		150.0	
		Z	4.57	66.82	16.26		150.0	
10400-AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.70	66.97	16.15	0.00	150.0	± 9.6 %
		Y	4.59	67.15	16.19		150.0	
		Z	4.64	67.01	16.16		150.0	
10401-AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.41	67.24	16.37	0.00	150.0	± 9.6 %
		Y	5.32	67.38	16.42		150.0	
		Z	5.38	67.33	16.41		150.0	

10402-AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.66	67.55	16.37	0.00	150.0	± 9.6 %
		Y	5.56	67.58	16.37		150.0	
		Z	5.60	67.52	16.36		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	1.28	66.85	12.83	0.00	115.0	± 9.6 %
		Y	1.15	66.36	12.07		115.0	
		Z	1.21	66.57	12.40		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	1.28	66.85	12.83	0.00	115.0	± 9.6 %
		Y	1.15	66.36	12.07		115.0	
		Z	1.21	66.57	12.40		115.0	
10406-AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	31.97	105.65	26.52	0.00	100.0	± 9.6 %
		Y	100.00	119.11	28.78		100.0	
		Z	100.00	120.25	29.60		100.0	
10410-AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	X	100.00	119.16	29.68	3.23	80.0	± 9.6 %
		Y	100.00	122.81	30.98		80.0	
		Z	100.00	120.19	29.97		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	0.96	62.46	13.98	0.00	150.0	± 9.6 %
		Y	0.99	62.90	14.23		150.0	
		Z	0.95	62.59	14.06		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.53	66.62	16.09	0.00	150.0	± 9.6 %
		Y	4.45	66.83	16.13		150.0	
		Z	4.48	66.68	16.10		150.0	
10417-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.53	66.62	16.09	0.00	150.0	± 9.6 %
		Y	4.45	66.83	16.13		150.0	
		Z	4.48	66.68	16.10		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	X	4.51	66.76	16.09	0.00	150.0	± 9.6 %
		Y	4.44	67.00	16.16		150.0	
		Z	4.47	66.83	16.12		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	X	4.54	66.72	16.10	0.00	150.0	± 9.6 %
		Y	4.46	66.94	16.15		150.0	
		Z	4.49	66.78	16.12		150.0	
10422-AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.66	66.73	16.13	0.00	150.0	± 9.6 %
		Y	4.57	66.94	16.17		150.0	
		Z	4.61	66.79	16.14		150.0	
10423-AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.83	67.07	16.25	0.00	150.0	± 9.6 %
		Y	4.72	67.22	16.28		150.0	
		Z	4.77	67.10	16.25		150.0	
10424-AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.75	67.01	16.22	0.00	150.0	± 9.6 %
		Y	4.64	67.18	16.25		150.0	
		Z	4.69	67.05	16.23		150.0	
10425-AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.37	67.43	16.45	0.00	150.0	± 9.6 %
		Y	5.26	67.46	16.45		150.0	
		Z	5.32	67.43	16.46		150.0	
10426-AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.37	67.44	16.46	0.00	150.0	± 9.6 %
		Y	5.28	67.55	16.49		150.0	
		Z	5.33	67.49	16.49		150.0	

10427-AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.38	67.41	16.44	0.00	150.0	± 9.6 %
		Y	5.27	67.46	16.44		150.0	
		Z	5.33	67.43	16.45		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.17	70.27	17.81	0.00	150.0	± 9.6 %
		Y	4.03	70.48	17.58		150.0	
		Z	4.14	70.57	17.85		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	4.21	67.11	16.05	0.00	150.0	± 9.6 %
		Y	4.09	67.33	16.03		150.0	
		Z	4.15	67.18	16.04		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.51	67.03	16.15	0.00	150.0	± 9.6 %
		Y	4.40	67.23	16.17		150.0	
		Z	4.46	67.08	16.15		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.76	67.04	16.24	0.00	150.0	± 9.6 %
		Y	4.66	67.21	16.27		150.0	
		Z	4.71	67.08	16.24		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.23	70.97	17.72	0.00	150.0	± 9.6 %
		Y	4.07	71.14	17.40		150.0	
		Z	4.21	71.31	17.74		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	118.98	29.60	3.23	80.0	± 9.6 %
		Y	100.00	122.59	30.87		80.0	
		Z	100.00	119.99	29.88		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.49	66.99	15.32	0.00	150.0	± 9.6 %
		Y	3.34	67.16	15.09		150.0	
		Z	3.41	67.04	15.22		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	X	4.04	66.88	15.90	0.00	150.0	± 9.6 %
		Y	3.94	67.12	15.89		150.0	
		Z	3.99	66.95	15.89		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	X	4.32	66.84	16.03	0.00	150.0	± 9.6 %
		Y	4.23	67.04	16.06		150.0	
		Z	4.27	66.90	16.04		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.51	66.79	16.08	0.00	150.0	± 9.6 %
		Y	4.44	66.97	16.11		150.0	
		Z	4.47	66.83	16.09		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	3.37	67.12	14.92	0.00	150.0	± 9.6 %
		Y	3.19	67.13	14.54		150.0	
		Z	3.28	67.11	14.76		150.0	
10456-AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.23	67.99	16.62	0.00	150.0	± 9.6 %
		Y	6.17	68.10	16.67		150.0	
		Z	6.19	67.99	16.63		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.77	65.25	15.79	0.00	150.0	± 9.6 %
		Y	3.75	65.50	15.83		150.0	
		Z	3.75	65.32	15.80		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	3.87	70.16	17.10	0.00	150.0	± 9.6 %
		Y	3.71	70.34	16.66		150.0	
		Z	3.84	70.49	17.05		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	5.00	67.94	17.87	0.00	150.0	± 9.6 %
		Y	4.81	68.13	17.56		150.0	
		Z	4.96	68.23	17.89		150.0	

10460-AAA	UMTS-FDD (WCDMA, AMR)	X	0.79	66.34	14.61	0.00	150.0	± 9.6 %
		Y	0.84	67.16	15.15		150.0	
		Z	0.79	66.65	14.76		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	122.59	31.33	3.29	80.0	± 9.6 %
		Y	100.00	128.70	33.71		80.0	
		Z	100.00	124.88	32.17		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	21.46	90.49	19.92	3.23	80.0	± 9.6 %
		Y	100.00	107.87	23.85		80.0	
		Z	100.00	106.49	23.49		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.25	74.65	14.70	3.23	80.0	± 9.6 %
		Y	19.71	88.51	18.38		80.0	
		Z	7.19	78.06	15.56		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.34	30.14	3.23	80.0	± 9.6 %
		Y	100.00	126.35	32.46		80.0	
		Z	100.00	122.50	30.92		80.0	
10465-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	11.73	83.97	18.05	3.23	80.0	± 9.6 %
		Y	100.00	107.24	23.55		80.0	
		Z	41.80	97.17	21.26		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.09	72.04	13.74	3.23	80.0	± 9.6 %
		Y	8.97	80.87	16.24		80.0	
		Z	4.77	73.97	14.19		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.57	30.24	3.23	80.0	± 9.6 %
		Y	100.00	126.64	32.58		80.0	
		Z	100.00	122.76	31.03		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	13.52	85.52	18.51	3.23	80.0	± 9.6 %
		Y	100.00	107.47	23.65		80.0	
		Z	60.78	101.09	22.20		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.11	72.11	13.77	3.23	80.0	± 9.6 %
		Y	9.29	81.22	16.33		80.0	
		Z	4.83	74.11	14.24		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.59	30.24	3.23	80.0	± 9.6 %
		Y	100.00	126.67	32.59		80.0	
		Z	100.00	122.78	31.03		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	13.37	85.38	18.46	3.23	80.0	± 9.6 %
		Y	100.00	107.40	23.62		80.0	
		Z	59.33	100.79	22.11		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.08	72.03	13.72	3.23	80.0	± 9.6 %
		Y	9.15	81.05	16.27		80.0	
		Z	4.78	73.98	14.18		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.56	30.23	3.23	80.0	± 9.6 %
		Y	100.00	126.64	32.58		80.0	
		Z	100.00	122.75	31.02		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	13.19	85.24	18.42	3.23	80.0	± 9.6 %
		Y	100.00	107.40	23.61		80.0	
		Z	57.55	100.49	22.04		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.06	71.97	13.71	3.23	80.0	± 9.6 %
		Y	8.99	80.90	16.23		80.0	
		Z	4.73	73.90	14.15		80.0	

10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	11.86	84.06	18.05	3.23	80.0	± 9.6 %
		Y	100.00	107.19	23.51		80.0	
		Z	43.65	97.56	21.32		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.02	71.87	13.66	3.23	80.0	± 9.6 %
		Y	8.76	80.61	16.13		80.0	
		Z	4.66	73.74	14.09		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	14.17	93.60	25.28	3.23	80.0	± 9.6 %
		Y	63.86	118.32	31.85		80.0	
		Z	30.71	105.97	28.68		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	12.48	86.47	21.39	3.23	80.0	± 9.6 %
		Y	53.06	106.13	26.31		80.0	
		Z	23.73	95.20	23.69		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	9.79	82.49	19.78	3.23	80.0	± 9.6 %
		Y	26.62	95.88	23.20		80.0	
		Z	15.46	88.60	21.40		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.76	76.35	18.33	2.23	80.0	± 9.6 %
		Y	4.38	75.77	17.66		80.0	
		Z	4.74	76.54	18.16		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	6.86	78.09	18.71	2.23	80.0	± 9.6 %
		Y	7.58	79.80	18.72		80.0	
		Z	7.91	80.19	19.17		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	6.29	76.73	18.22	2.23	80.0	± 9.6 %
		Y	6.51	77.64	17.97		80.0	
		Z	6.95	78.27	18.51		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.21	77.92	19.79	2.23	80.0	± 9.6 %
		Y	5.14	78.56	19.82		80.0	
		Z	5.34	78.68	19.95		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.30	72.12	17.19	2.23	80.0	± 9.6 %
		Y	4.02	71.85	16.65		80.0	
		Z	4.23	72.22	17.03		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.25	71.63	16.98	2.23	80.0	± 9.6 %
		Y	3.95	71.26	16.39		80.0	
		Z	4.16	71.66	16.79		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.17	76.41	19.90	2.23	80.0	± 9.6 %
		Y	5.01	76.93	20.15		80.0	
		Z	5.17	76.91	20.10		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.47	71.61	18.14	2.23	80.0	± 9.6 %
		Y	4.30	71.84	18.12		80.0	
		Z	4.42	71.84	18.19		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.53	71.33	18.05	2.23	80.0	± 9.6 %
		Y	4.36	71.56	18.01		80.0	
		Z	4.48	71.55	18.09		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.06	74.04	19.16	2.23	80.0	± 9.6 %
		Y	4.88	74.37	19.37		80.0	
		Z	5.01	74.33	19.30		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.71	70.55	18.02	2.23	80.0	± 9.6 %
		Y	4.54	70.71	18.05		80.0	
		Z	4.64	70.68	18.06		80.0	

10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.76	70.36	17.96	2.23	80.0	± 9.6 %
		Y	4.58	70.52	17.98		80.0	
		Z	4.69	70.49	18.00		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.60	75.75	19.64	2.23	80.0	± 9.6 %
		Y	5.37	76.02	19.87		80.0	
		Z	5.56	76.06	19.81		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.78	71.03	18.23	2.23	80.0	± 9.6 %
		Y	4.59	71.11	18.27		80.0	
		Z	4.71	71.14	18.28		80.0	
10496-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.83	70.65	18.12	2.23	80.0	± 9.6 %
		Y	4.64	70.74	18.15		80.0	
		Z	4.75	70.76	18.17		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.37	71.45	15.57	2.23	80.0	± 9.6 %
		Y	2.72	69.17	13.95		80.0	
		Z	3.09	70.50	14.83		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.40	64.81	11.76	2.23	80.0	± 9.6 %
		Y	1.75	62.03	9.60		80.0	
		Z	2.07	63.39	10.68		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.32	64.18	11.33	2.23	80.0	± 9.6 %
		Y	1.68	61.41	9.14		80.0	
		Z	1.99	62.76	10.23		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.05	76.85	19.69	2.23	80.0	± 9.6 %
		Y	4.98	77.59	19.85		80.0	
		Z	5.12	77.53	19.88		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.38	71.91	17.55	2.23	80.0	± 9.6 %
		Y	4.19	72.01	17.27		80.0	
		Z	4.33	72.13	17.50		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.41	71.66	17.40	2.23	80.0	± 9.6 %
		Y	4.21	71.71	17.09		80.0	
		Z	4.36	71.85	17.33		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.10	76.19	19.80	2.23	80.0	± 9.6 %
		Y	4.94	76.71	20.05		80.0	
		Z	5.10	76.67	19.99		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.44	71.51	18.08	2.23	80.0	± 9.6 %
		Y	4.28	71.74	18.06		80.0	
		Z	4.39	71.73	18.13		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.51	71.23	18.00	2.23	80.0	± 9.6 %
		Y	4.34	71.46	17.96		80.0	
		Z	4.45	71.44	18.03		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.55	75.59	19.57	2.23	80.0	± 9.6 %
		Y	5.33	75.87	19.80		80.0	
		Z	5.51	75.90	19.73		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.76	70.96	18.19	2.23	80.0	± 9.6 %
		Y	4.57	71.05	18.23		80.0	
		Z	4.69	71.07	18.24		80.0	

10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.81	70.58	18.08	2.23	80.0	± 9.6 %
		Y	4.62	70.68	18.11		80.0	
		Z	4.73	70.68	18.12		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.59	73.58	18.84	2.23	80.0	± 9.6 %
		Y	5.39	73.76	19.02		80.0	
		Z	5.53	73.76	18.95		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.20	70.42	18.08	2.23	80.0	± 9.6 %
		Y	4.99	70.43	18.12		80.0	
		Z	5.11	70.45	18.12		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.22	70.10	18.00	2.23	80.0	± 9.6 %
		Y	5.03	70.13	18.04		80.0	
		Z	5.14	70.14	18.03		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	6.02	75.44	19.39	2.23	80.0	± 9.6 %
		Y	5.78	75.56	19.57		80.0	
		Z	5.97	75.65	19.51		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.12	70.82	18.23	2.23	80.0	± 9.6 %
		Y	4.91	70.75	18.25		80.0	
		Z	5.03	70.83	18.26		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.09	70.31	18.08	2.23	80.0	± 9.6 %
		Y	4.90	70.27	18.11		80.0	
		Z	5.01	70.33	18.11		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.92	62.60	13.99	0.00	150.0	± 9.6 %
		Y	0.95	63.05	14.27		150.0	
		Z	0.91	62.72	14.07		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.48	67.26	14.71	0.00	150.0	± 9.6 %
		Y	0.54	68.48	15.75		150.0	
		Z	0.49	67.82	15.05		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.75	64.05	14.24	0.00	150.0	± 9.6 %
		Y	0.79	64.60	14.65		150.0	
		Z	0.75	64.23	14.37		150.0	
10518-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.52	66.69	16.06	0.00	150.0	± 9.6 %
		Y	4.44	66.90	16.10		150.0	
		Z	4.47	66.75	16.07		150.0	
10519-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.71	66.95	16.20	0.00	150.0	± 9.6 %
		Y	4.60	67.11	16.21		150.0	
		Z	4.65	66.98	16.20		150.0	
10520-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.56	66.90	16.11	0.00	150.0	± 9.6 %
		Y	4.46	67.05	16.12		150.0	
		Z	4.50	66.93	16.11		150.0	
10521-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.49	66.89	16.09	0.00	150.0	± 9.6 %
		Y	4.39	67.03	16.11		150.0	
		Z	4.44	66.91	16.09		150.0	
10522-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.55	66.96	16.17	0.00	150.0	± 9.6 %
		Y	4.45	67.16	16.21		150.0	
		Z	4.50	67.02	16.19		150.0	

10523-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.43	66.81	16.00	0.00	150.0	± 9.6 %
		Y	4.35	67.05	16.07		150.0	
		Z	4.38	66.88	16.02		150.0	
10524-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.50	66.89	16.14	0.00	150.0	± 9.6 %
		Y	4.39	67.08	16.18		150.0	
		Z	4.44	66.94	16.15		150.0	
10525-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.47	65.92	15.72	0.00	150.0	± 9.6 %
		Y	4.40	66.15	15.78		150.0	
		Z	4.43	65.98	15.74		150.0	
10526-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.65	66.29	15.87	0.00	150.0	± 9.6 %
		Y	4.55	66.47	15.91		150.0	
		Z	4.59	66.34	15.88		150.0	
10527-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.57	66.25	15.81	0.00	150.0	± 9.6 %
		Y	4.47	66.43	15.85		150.0	
		Z	4.52	66.29	15.82		150.0	
10528-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.58	66.27	15.84	0.00	150.0	± 9.6 %
		Y	4.49	66.45	15.88		150.0	
		Z	4.53	66.31	15.85		150.0	
10529-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.58	66.27	15.84	0.00	150.0	± 9.6 %
		Y	4.49	66.45	15.88		150.0	
		Z	4.53	66.31	15.85		150.0	
10531-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.58	66.38	15.85	0.00	150.0	± 9.6 %
		Y	4.46	66.51	15.87		150.0	
		Z	4.52	66.40	15.86		150.0	
10532-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.44	66.22	15.78	0.00	150.0	± 9.6 %
		Y	4.33	66.36	15.80		150.0	
		Z	4.38	66.25	15.78		150.0	
10533-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.59	66.30	15.83	0.00	150.0	± 9.6 %
		Y	4.49	66.51	15.88		150.0	
		Z	4.54	66.36	15.84		150.0	
10534-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	5.13	66.43	15.94	0.00	150.0	± 9.6 %
		Y	5.04	66.54	15.97		150.0	
		Z	5.08	66.45	15.95		150.0	
10535-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.20	66.61	16.01	0.00	150.0	± 9.6 %
		Y	5.10	66.71	16.05		150.0	
		Z	5.15	66.64	16.04		150.0	
10536-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	5.06	66.54	15.96	0.00	150.0	± 9.6 %
		Y	4.98	66.67	16.01		150.0	
		Z	5.01	66.57	15.98		150.0	
10537-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	5.12	66.52	15.95	0.00	150.0	± 9.6 %
		Y	5.03	66.63	15.99		150.0	
		Z	5.07	66.54	15.97		150.0	
10538-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.22	66.56	16.02	0.00	150.0	± 9.6 %
		Y	5.11	66.64	16.04		150.0	
		Z	5.16	66.56	16.02		150.0	
10540-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	5.14	66.57	16.03	0.00	150.0	± 9.6 %
		Y	5.04	66.62	16.05		150.0	
		Z	5.10	66.60	16.05		150.0	

10541-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	5.11	66.43	15.96	0.00	150.0	± 9.6 %
		Y	5.02	66.51	15.98		150.0	
		Z	5.07	66.45	15.97		150.0	
10542-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.27	66.51	16.02	0.00	150.0	± 9.6 %
		Y	5.18	66.61	16.04		150.0	
		Z	5.22	66.53	16.03		150.0	
10543-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.36	66.57	16.06	0.00	150.0	± 9.6 %
		Y	5.24	66.63	16.08		150.0	
		Z	5.30	66.57	16.07		150.0	
10544-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.43	66.55	15.94	0.00	150.0	± 9.6 %
		Y	5.37	66.65	15.97		150.0	
		Z	5.40	66.56	15.95		150.0	
10545-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.64	67.00	16.11	0.00	150.0	± 9.6 %
		Y	5.55	67.08	16.15		150.0	
		Z	5.60	67.02	16.13		150.0	
10546-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.50	66.78	16.02	0.00	150.0	± 9.6 %
		Y	5.41	66.80	16.02		150.0	
		Z	5.46	66.76	16.01		150.0	
10547-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.58	66.83	16.03	0.00	150.0	± 9.6 %
		Y	5.49	66.87	16.05		150.0	
		Z	5.53	66.81	16.03		150.0	
10548-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.89	67.94	16.56	0.00	150.0	± 9.6 %
		Y	5.69	67.68	16.43		150.0	
		Z	5.80	67.83	16.51		150.0	
10550-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.53	66.79	16.03	0.00	150.0	± 9.6 %
		Y	5.46	66.91	16.08		150.0	
		Z	5.49	66.81	16.05		150.0	
10551-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.53	66.82	16.01	0.00	150.0	± 9.6 %
		Y	5.44	66.85	16.02		150.0	
		Z	5.49	66.83	16.02		150.0	
10552-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.44	66.61	15.91	0.00	150.0	± 9.6 %
		Y	5.38	66.72	15.95		150.0	
		Z	5.40	66.62	15.92		150.0	
10553-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.53	66.66	15.96	0.00	150.0	± 9.6 %
		Y	5.45	66.72	15.99		150.0	
		Z	5.48	66.65	15.97		150.0	
10554-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.84	66.93	16.04	0.00	150.0	± 9.6 %
		Y	5.78	67.01	16.06		150.0	
		Z	5.81	66.94	16.05		150.0	
10555-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	5.98	67.25	16.17	0.00	150.0	± 9.6 %
		Y	5.90	67.29	16.19		150.0	
		Z	5.94	67.25	16.18		150.0	
10556-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	6.00	67.29	16.19	0.00	150.0	± 9.6 %
		Y	5.93	67.35	16.21		150.0	
		Z	5.96	67.30	16.20		150.0	
10557-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	5.96	67.20	16.16	0.00	150.0	± 9.6 %
		Y	5.88	67.23	16.17		150.0	
		Z	5.92	67.18	16.16		150.0	

10558-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	6.01	67.37	16.26	0.00	150.0	± 9.6 %
		Y	5.92	67.38	16.26		150.0	
		Z	5.97	67.35	16.26		150.0	
10560-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	6.01	67.21	16.22	0.00	150.0	± 9.6 %
		Y	5.92	67.24	16.23		150.0	
		Z	5.96	67.19	16.22		150.0	
10561-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	5.93	67.18	16.25	0.00	150.0	± 9.6 %
		Y	5.85	67.23	16.26		150.0	
		Z	5.89	67.18	16.25		150.0	
10562-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	6.07	67.61	16.46	0.00	150.0	± 9.6 %
		Y	5.94	67.50	16.40		150.0	
		Z	6.01	67.54	16.43		150.0	
10563-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	6.39	68.16	16.69	0.00	150.0	± 9.6 %
		Y	6.02	67.41	16.31		150.0	
		Z	6.19	67.71	16.48		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.86	66.83	16.26	0.46	150.0	± 9.6 %
		Y	4.78	67.03	16.31		150.0	
		Z	4.81	66.87	16.27		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	5.09	67.28	16.58	0.46	150.0	± 9.6 %
		Y	4.98	67.43	16.60		150.0	
		Z	5.03	67.31	16.59		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	4.93	67.13	16.40	0.46	150.0	± 9.6 %
		Y	4.82	67.27	16.42		150.0	
		Z	4.87	67.15	16.40		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	4.95	67.50	16.74	0.46	150.0	± 9.6 %
		Y	4.84	67.61	16.74		150.0	
		Z	4.90	67.52	16.74		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.85	66.93	16.19	0.46	150.0	± 9.6 %
		Y	4.74	67.12	16.24		150.0	
		Z	4.79	66.97	16.19		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	4.91	67.57	16.79	0.46	150.0	± 9.6 %
		Y	4.82	67.76	16.84		150.0	
		Z	4.86	67.64	16.82		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	4.94	67.43	16.73	0.46	150.0	± 9.6 %
		Y	4.84	67.60	16.77		150.0	
		Z	4.89	67.48	16.75		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.25	65.19	15.53	0.46	130.0	± 9.6 %
		Y	1.27	65.45	15.71		130.0	
		Z	1.24	65.29	15.60		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.27	65.79	15.87	0.46	130.0	± 9.6 %
		Y	1.28	66.03	16.05		130.0	
		Z	1.26	65.90	15.96		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	2.61	85.52	21.81	0.46	130.0	± 9.6 %
		Y	2.97	88.51	23.34		130.0	
		Z	3.01	88.05	22.71		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	1.44	71.64	18.59	0.46	130.0	± 9.6 %
		Y	1.44	71.68	18.74		130.0	
		Z	1.45	72.00	18.80		130.0	

10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.68	66.71	16.37	0.46	130.0	± 9.6 %
		Y	4.59	66.91	16.41		130.0	
		Z	4.63	66.76	16.38		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.70	66.86	16.43	0.46	130.0	± 9.6 %
		Y	4.61	67.07	16.47		130.0	
		Z	4.65	66.92	16.44		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	4.91	67.16	16.60	0.46	130.0	± 9.6 %
		Y	4.79	67.31	16.62		130.0	
		Z	4.85	67.20	16.60		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.81	67.32	16.69	0.46	130.0	± 9.6 %
		Y	4.69	67.44	16.70		130.0	
		Z	4.75	67.35	16.70		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.58	66.65	16.03	0.46	130.0	± 9.6 %
		Y	4.47	66.80	16.06		130.0	
		Z	4.52	66.66	16.02		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.63	66.68	16.05	0.46	130.0	± 9.6 %
		Y	4.52	66.87	16.11		130.0	
		Z	4.57	66.71	16.05		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.71	67.36	16.64	0.46	130.0	± 9.6 %
		Y	4.60	67.52	16.66		130.0	
		Z	4.65	67.41	16.65		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.53	66.42	15.83	0.46	130.0	± 9.6 %
		Y	4.41	66.60	15.88		130.0	
		Z	4.46	66.43	15.82		130.0	
10583-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.68	66.71	16.37	0.46	130.0	± 9.6 %
		Y	4.59	66.91	16.41		130.0	
		Z	4.63	66.76	16.38		130.0	
10584-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.70	66.86	16.43	0.46	130.0	± 9.6 %
		Y	4.61	67.07	16.47		130.0	
		Z	4.65	66.92	16.44		130.0	
10585-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.91	67.16	16.60	0.46	130.0	± 9.6 %
		Y	4.79	67.31	16.62		130.0	
		Z	4.85	67.20	16.60		130.0	
10586-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.81	67.32	16.69	0.46	130.0	± 9.6 %
		Y	4.69	67.44	16.70		130.0	
		Z	4.75	67.35	16.70		130.0	
10587-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.58	66.65	16.03	0.46	130.0	± 9.6 %
		Y	4.47	66.80	16.06		130.0	
		Z	4.52	66.66	16.02		130.0	
10588-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.63	66.68	16.05	0.46	130.0	± 9.6 %
		Y	4.52	66.87	16.11		130.0	
		Z	4.57	66.71	16.05		130.0	
10589-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.71	67.36	16.64	0.46	130.0	± 9.6 %
		Y	4.60	67.52	16.66		130.0	
		Z	4.65	67.41	16.65		130.0	
10590-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.53	66.42	15.83	0.46	130.0	± 9.6 %
		Y	4.41	66.60	15.88		130.0	
		Z	4.46	66.43	15.82		130.0	

10591-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.83	66.77	16.47	0.46	130.0	± 9.6 %
		Y	4.74	66.96	16.50		130.0	
		Z	4.78	66.82	16.48		130.0	
10592-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	4.98	67.10	16.60	0.46	130.0	± 9.6 %
		Y	4.87	67.27	16.63		130.0	
		Z	4.93	67.14	16.61		130.0	
10593-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	4.91	67.02	16.48	0.46	130.0	± 9.6 %
		Y	4.80	67.17	16.51		130.0	
		Z	4.85	67.05	16.49		130.0	
10594-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	4.96	67.18	16.63	0.46	130.0	± 9.6 %
		Y	4.85	67.33	16.66		130.0	
		Z	4.90	67.22	16.64		130.0	
10595-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.93	67.14	16.53	0.46	130.0	± 9.6 %
		Y	4.82	67.31	16.57		130.0	
		Z	4.87	67.18	16.54		130.0	
10596-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.87	67.14	16.54	0.46	130.0	± 9.6 %
		Y	4.76	67.30	16.57		130.0	
		Z	4.81	67.18	16.54		130.0	
10597-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.82	67.05	16.42	0.46	130.0	± 9.6 %
		Y	4.71	67.19	16.44		130.0	
		Z	4.76	67.07	16.42		130.0	
10598-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.80	67.28	16.68	0.46	130.0	± 9.6 %
		Y	4.69	67.37	16.67		130.0	
		Z	4.74	67.29	16.67		130.0	
10599-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.50	67.33	16.69	0.46	130.0	± 9.6 %
		Y	5.40	67.43	16.72		130.0	
		Z	5.46	67.38	16.72		130.0	
10600-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.67	67.87	16.93	0.46	130.0	± 9.6 %
		Y	5.53	67.86	16.92		130.0	
		Z	5.61	67.87	16.94		130.0	
10601-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.54	67.56	16.79	0.46	130.0	± 9.6 %
		Y	5.42	67.61	16.80		130.0	
		Z	5.48	67.56	16.80		130.0	
10602-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.63	67.58	16.72	0.46	130.0	± 9.6 %
		Y	5.55	67.79	16.82		130.0	
		Z	5.59	67.64	16.76		130.0	
10603-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.71	67.86	16.99	0.46	130.0	± 9.6 %
		Y	5.61	68.00	17.05		130.0	
		Z	5.65	67.89	17.01		130.0	
10604-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.50	67.29	16.70	0.46	130.0	± 9.6 %
		Y	5.49	67.68	16.88		130.0	
		Z	5.47	67.39	16.75		130.0	
10605-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.63	67.69	16.90	0.46	130.0	± 9.6 %
		Y	5.53	67.80	16.94		130.0	
		Z	5.59	67.74	16.92		130.0	
10606-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.39	67.07	16.45	0.46	130.0	± 9.6 %
		Y	5.27	67.10	16.45		130.0	
		Z	5.31	66.99	16.41		130.0	

10607-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.65	66.04	16.07	0.46	130.0	± 9.6 %
		Y	4.58	66.26	16.12		130.0	
		Z	4.61	66.10	16.08		130.0	
10608-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.85	66.45	16.23	0.46	130.0	± 9.6 %
		Y	4.74	66.63	16.28		130.0	
		Z	4.79	66.50	16.25		130.0	
10609-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.74	66.30	16.07	0.46	130.0	± 9.6 %
		Y	4.63	66.48	16.11		130.0	
		Z	4.68	66.35	16.08		130.0	
10610-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.79	66.46	16.23	0.46	130.0	± 9.6 %
		Y	4.68	66.63	16.27		130.0	
		Z	4.73	66.50	16.25		130.0	
10611-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.70	66.28	16.09	0.46	130.0	± 9.6 %
		Y	4.60	66.45	16.12		130.0	
		Z	4.65	66.31	16.10		130.0	
10612-AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.72	66.43	16.13	0.46	130.0	± 9.6 %
		Y	4.60	66.61	16.18		130.0	
		Z	4.66	66.47	16.14		130.0	
10613-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.72	66.33	16.02	0.46	130.0	± 9.6 %
		Y	4.60	66.47	16.05		130.0	
		Z	4.66	66.35	16.02		130.0	
10614-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.66	66.50	16.24	0.46	130.0	± 9.6 %
		Y	4.55	66.62	16.25		130.0	
		Z	4.60	66.53	16.25		130.0	
10615-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.71	66.12	15.87	0.46	130.0	± 9.6 %
		Y	4.60	66.33	15.93		130.0	
		Z	4.65	66.16	15.88		130.0	
10616-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.31	66.56	16.28	0.46	130.0	± 9.6 %
		Y	5.21	66.65	16.31		130.0	
		Z	5.26	66.57	16.29		130.0	
10617-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.38	66.74	16.35	0.46	130.0	± 9.6 %
		Y	5.29	66.86	16.39		130.0	
		Z	5.34	66.79	16.37		130.0	
10618-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.26	66.74	16.36	0.46	130.0	± 9.6 %
		Y	5.18	66.87	16.40		130.0	
		Z	5.22	66.77	16.38		130.0	
10619-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.29	66.59	16.22	0.46	130.0	± 9.6 %
		Y	5.19	66.67	16.25		130.0	
		Z	5.23	66.58	16.22		130.0	
10620-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.38	66.62	16.29	0.46	130.0	± 9.6 %
		Y	5.27	66.70	16.31		130.0	
		Z	5.32	66.62	16.29		130.0	
10621-AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.37	66.71	16.45	0.46	130.0	± 9.6 %
		Y	5.27	66.80	16.47		130.0	
		Z	5.32	66.74	16.47		130.0	
10622-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.39	66.89	16.53	0.46	130.0	± 9.6 %
		Y	5.29	66.97	16.55		130.0	
		Z	5.34	66.92	16.55		130.0	

10623-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.26	66.41	16.17	0.46	130.0	± 9.6 %
		Y	5.16	66.51	16.20		130.0	
		Z	5.21	66.44	16.19		130.0	
10624-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.45	66.63	16.34	0.46	130.0	± 9.6 %
		Y	5.35	66.71	16.36		130.0	
		Z	5.40	66.64	16.35		130.0	
10625-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.87	67.75	16.95	0.46	130.0	± 9.6 %
		Y	5.59	67.32	16.72		130.0	
		Z	5.77	67.62	16.89		130.0	
10626-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.59	66.61	16.24	0.46	130.0	± 9.6 %
		Y	5.53	66.71	16.27		130.0	
		Z	5.56	66.63	16.25		130.0	
10627-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.86	67.23	16.51	0.46	130.0	± 9.6 %
		Y	5.77	67.31	16.54		130.0	
		Z	5.82	67.26	16.53		130.0	
10628-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.64	66.75	16.20	0.46	130.0	± 9.6 %
		Y	5.54	66.76	16.20		130.0	
		Z	5.59	66.73	16.20		130.0	
10629-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.74	66.86	16.25	0.46	130.0	± 9.6 %
		Y	5.63	66.85	16.25		130.0	
		Z	5.67	66.78	16.22		130.0	
10630-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.27	68.62	17.13	0.46	130.0	± 9.6 %
		Y	5.98	68.12	16.89		130.0	
		Z	6.16	68.44	17.05		130.0	
10631-AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.08	68.18	17.10	0.46	130.0	± 9.6 %
		Y	5.89	67.92	16.96		130.0	
		Z	6.00	68.07	17.05		130.0	
10632-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.81	67.25	16.65	0.46	130.0	± 9.6 %
		Y	5.73	67.36	16.70		130.0	
		Z	5.78	67.29	16.68		130.0	
10633-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.70	66.88	16.30	0.46	130.0	± 9.6 %
		Y	5.61	66.94	16.32		130.0	
		Z	5.64	66.86	16.29		130.0	
10634-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.68	66.90	16.36	0.46	130.0	± 9.6 %
		Y	5.59	66.94	16.37		130.0	
		Z	5.63	66.89	16.36		130.0	
10635-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.57	66.28	15.80	0.46	130.0	± 9.6 %
		Y	5.47	66.33	15.83		130.0	
		Z	5.52	66.25	15.79		130.0	
10636-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	6.01	67.00	16.34	0.46	130.0	± 9.6 %
		Y	5.95	67.08	16.37		130.0	
		Z	5.98	67.00	16.35		130.0	
10637-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.18	67.41	16.53	0.46	130.0	± 9.6 %
		Y	6.10	67.45	16.54		130.0	
		Z	6.14	67.41	16.54		130.0	
10638-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.18	67.38	16.49	0.46	130.0	± 9.6 %
		Y	6.10	67.42	16.51		130.0	
		Z	6.14	67.38	16.50		130.0	

10639-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.15	67.32	16.51	0.46	130.0	± 9.6 %
		Y	6.07	67.34	16.50		130.0	
		Z	6.11	67.30	16.50		130.0	
10640-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.17	67.36	16.47	0.46	130.0	± 9.6 %
		Y	6.07	67.36	16.47		130.0	
		Z	6.11	67.32	16.45		130.0	
10641-AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.20	67.22	16.42	0.46	130.0	± 9.6 %
		Y	6.14	67.34	16.48		130.0	
		Z	6.17	67.26	16.44		130.0	
10642-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.24	67.47	16.71	0.46	130.0	± 9.6 %
		Y	6.15	67.50	16.71		130.0	
		Z	6.19	67.46	16.71		130.0	
10643-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.08	67.18	16.46	0.46	130.0	± 9.6 %
		Y	6.01	67.25	16.50		130.0	
		Z	6.04	67.18	16.47		130.0	
10644-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.27	67.76	16.77	0.46	130.0	± 9.6 %
		Y	6.11	67.57	16.67		130.0	
		Z	6.19	67.64	16.72		130.0	
10645-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.75	68.75	17.22	0.46	130.0	± 9.6 %
		Y	6.24	67.62	16.66		130.0	
		Z	6.47	68.11	16.92		130.0	
10646-AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	46.96	124.69	40.77	9.30	60.0	± 9.6 %
		Y	100.00	148.37	48.20		60.0	
		Z	67.01	134.85	43.85		60.0	
10647-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	46.42	125.36	41.11	9.30	60.0	± 9.6 %
		Y	100.00	149.72	48.78		60.0	
		Z	63.71	134.73	44.00		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.63	62.54	9.79	0.00	150.0	± 9.6 %
		Y	0.58	62.24	9.19		150.0	
		Z	0.59	62.30	9.35		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	4.19	68.34	17.06	2.23	80.0	± 9.6 %
		Y	4.08	68.62	17.03		80.0	
		Z	4.14	68.48	17.06		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.68	67.61	17.18	2.23	80.0	± 9.6 %
		Y	4.56	67.77	17.19		80.0	
		Z	4.62	67.66	17.19		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.63	67.27	17.19	2.23	80.0	± 9.6 %
		Y	4.54	67.39	17.21		80.0	
		Z	4.58	67.31	17.20		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.69	67.27	17.23	2.23	80.0	± 9.6 %
		Y	4.60	67.35	17.25		80.0	
		Z	4.64	67.28	17.23		80.0	
10658-AAA	Pulse Waveform (200Hz, 10%)	X	19.17	92.59	24.24	10.00	50.0	± 9.6 %
		Y	41.94	104.68	27.26		50.0	
		Z	24.50	96.17	24.98		50.0	
10659-AAA	Pulse Waveform (200Hz, 20%)	X	100.00	114.36	28.32	6.99	60.0	± 9.6 %
		Y	100.00	114.20	27.89		60.0	
		Z	100.00	113.56	27.75		60.0	

10660-AAA	Pulse Waveform (200Hz, 40%)	X	100.00	111.43	25.50	3.98	80.0	± 9.6 %
		Y	100.00	112.46	25.73		80.0	
		Z	100.00	110.79	25.07		80.0	
10661-AAA	Pulse Waveform (200Hz, 60%)	X	100.00	110.47	23.74	2.22	100.0	± 9.6 %
		Y	100.00	113.22	24.78		100.0	
		Z	100.00	109.90	23.38		100.0	
10662-AAA	Pulse Waveform (200Hz, 80%)	X	100.00	107.83	20.92	0.97	120.0	± 9.6 %
		Y	100.00	115.39	23.98		120.0	
		Z	100.00	107.00	20.48		120.0	

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

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: ES3-3287_Sep17

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3287

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

SC ✓
10/03/2017

Calibration date: September 18, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02525)	Apr-18
Reference 20 dB Attenuator	SN: S5277 (20x)	07-Apr-17 (No. 217-02528)	Apr-18
Reference Probe ES3DV2	SN: 3013	31-Dec-16 (No. ES3-3013_Dec16)	Dec-17
DAE4	SN: 660	7-Dec-16 (No. DAE4-660_Dec16)	Dec-17
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Issued: September 19, 2017

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,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., ϑ = 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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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*.
- *DCPx,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
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,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 ≤ 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 *NORMx,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 *NORMx* (no uncertainty required).

Probe ES3DV3

SN:3287

Manufactured: June 7, 2010
Calibrated: September 18, 2017

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.87	0.98	1.00	± 10.1 %
DCP (mV)[B]	107.7	103.1	105.0	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	191.5	±3.3 %
		Y	0.0	0.0	1.0		198.9	
		Z	0.0	0.0	1.0		180.8	

Note: For details on UID parameters see Appendix.

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	54.28	378.7	33.99	28.46	2.430	5.072	1.313	0.408	1.009
Y	59.16	422.2	35.13	29.85	3.583	5.094	0.041	0.732	1.008
Z	43.70	307.8	34.40	28.00	2.236	5.100	1.282	0.347	1.010

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	7.00	7.00	7.00	0.26	1.80	± 12.0 %
835	41.5	0.90	6.70	6.70	6.70	0.56	1.23	± 12.0 %
1750	40.1	1.37	5.57	5.57	5.57	0.53	1.28	± 12.0 %
1900	40.0	1.40	5.34	5.34	5.34	0.41	1.52	± 12.0 %
2300	39.5	1.67	4.94	4.94	4.94	0.42	1.57	± 12.0 %
2450	39.2	1.80	4.64	4.64	4.64	0.55	1.39	± 12.0 %
2600	39.0	1.96	4.44	4.44	4.44	0.58	1.43	± 12.0 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	6.71	6.71	6.71	0.45	1.38	± 12.0 %
835	55.2	0.97	6.56	6.56	6.56	0.80	1.05	± 12.0 %
1750	53.4	1.49	5.19	5.19	5.19	0.37	1.73	± 12.0 %
1900	53.3	1.52	5.00	5.00	5.00	0.47	1.51	± 12.0 %
2300	52.9	1.81	4.66	4.66	4.66	0.59	1.36	± 12.0 %
2450	52.7	1.95	4.47	4.47	4.47	0.55	1.20	± 12.0 %
2600	52.5	2.16	4.28	4.28	4.28	0.50	1.20	± 12.0 %

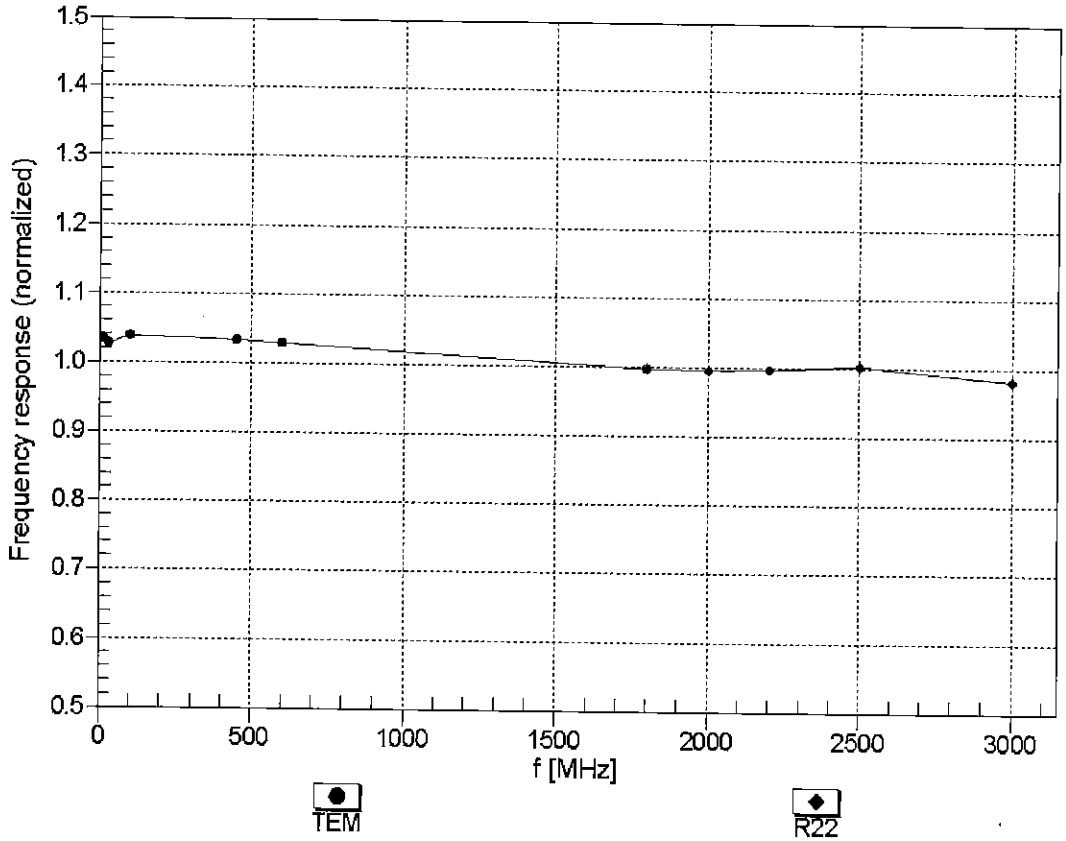
[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

Frequency Response of E-Field

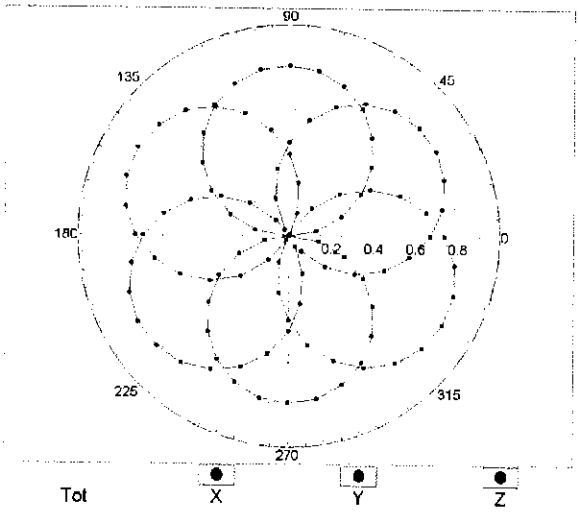
(TEM-Cell:ifi110 EXX, Waveguide: R22)



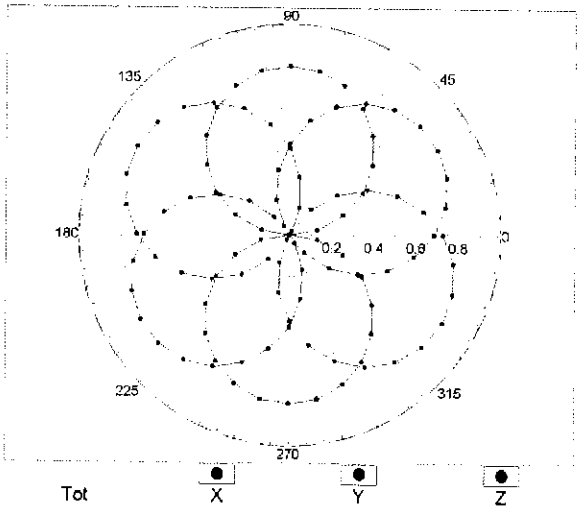
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

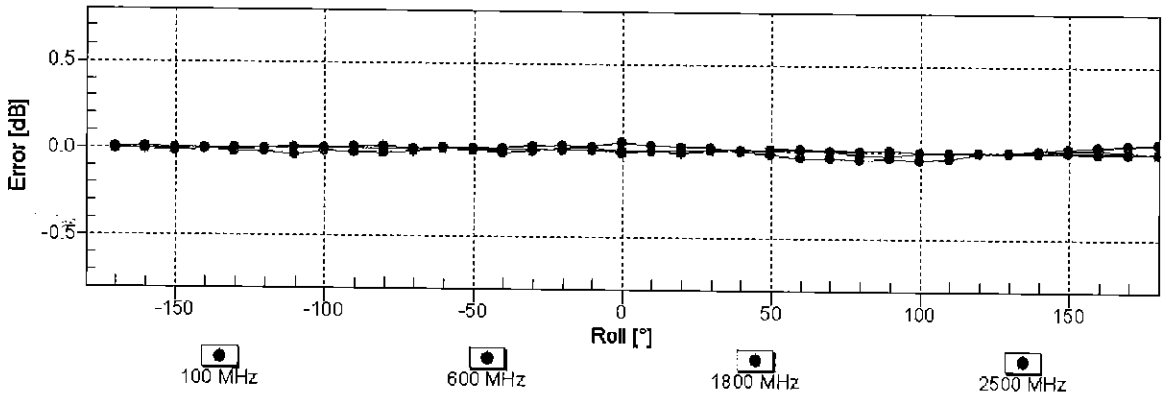
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

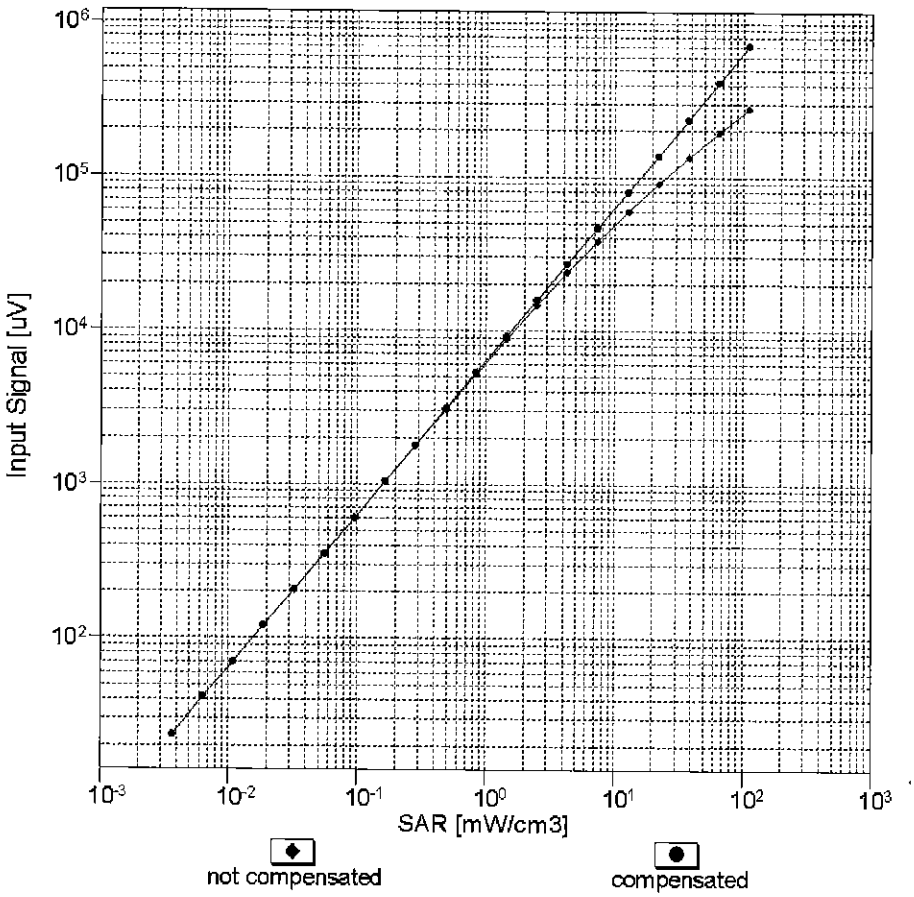


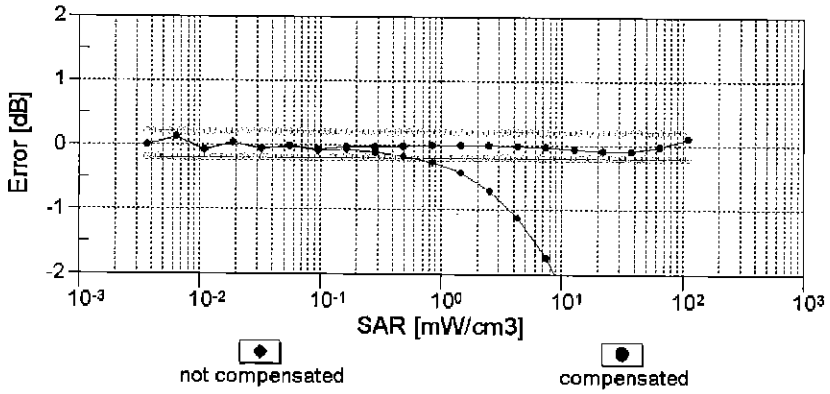


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

(TEM cell , f_{eval}= 1900 MHz)

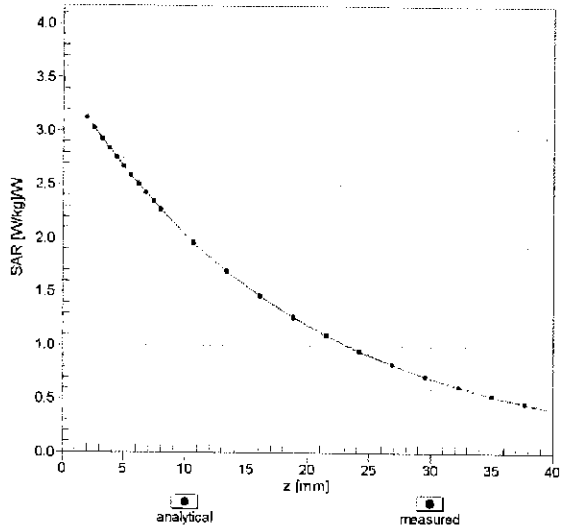




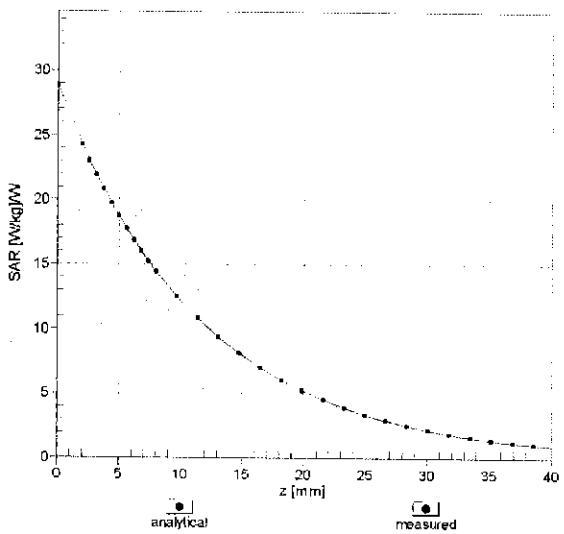
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

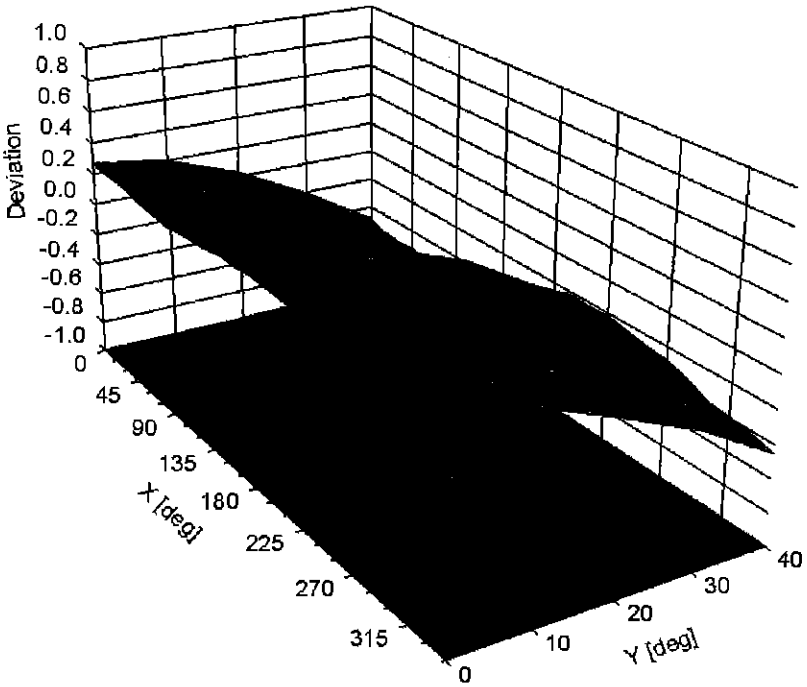


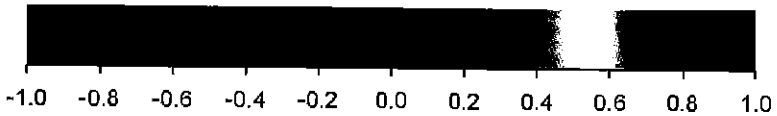
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	89.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max Unc[E] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	191.5	± 3.3 %
		Y	0.00	0.00	1.00		198.9	
		Z	0.00	0.00	1.00		180.8	
10010-CAA	SAR Validation (Square, 100ms, 10ms)	X	10.31	82.54	19.92	10.00	25.0	± 9.6 %
		Y	9.70	81.57	20.65		25.0	
		Z	13.02	86.61	21.44		25.0	
10011-CAB	UMTS-FDD (WCDMA)	X	1.65	76.64	20.39	0.00	150.0	± 9.6 %
		Y	1.11	68.31	15.89		150.0	
		Z	1.20	70.53	17.08		150.0	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.42	67.62	17.77	0.41	150.0	± 9.6 %
		Y	1.35	65.44	16.09		150.0	
		Z	1.35	66.18	16.60		150.0	
10013-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	5.13	67.63	17.69	1.46	150.0	± 9.6 %
		Y	5.21	67.37	17.49		150.0	
		Z	5.05	67.67	17.63		150.0	
10021-DAC	GSM-FDD (TDMA, GMSK)	X	36.11	104.66	28.70	9.39	50.0	± 9.6 %
		Y	17.06	92.75	26.26		50.0	
		Z	74.47	117.68	32.39		50.0	
10023-DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	29.01	100.99	27.69	9.57	50.0	± 9.6 %
		Y	15.70	91.12	25.76		50.0	
		Z	50.86	111.27	30.76		50.0	
10024-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	100.00	118.25	30.37	6.56	60.0	± 9.6 %
		Y	79.14	117.46	31.45		60.0	
		Z	100.00	119.51	30.92		60.0	
10025-DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	18.01	104.77	39.73	12.57	50.0	± 9.6 %
		Y	13.85	93.70	35.01		50.0	
		Z	19.28	108.70	41.83		50.0	
10026-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	22.37	106.73	36.71	9.56	60.0	± 9.6 %
		Y	15.21	95.13	32.50		60.0	
		Z	23.85	109.99	38.29		60.0	
10027-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	117.60	29.16	4.80	80.0	± 9.6 %
		Y	100.00	119.86	30.73		80.0	
		Z	100.00	118.96	29.76		80.0	
10028-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	118.56	28.79	3.55	100.0	± 9.6 %
		Y	100.00	119.98	29.90		100.0	
		Z	100.00	119.90	29.38		100.0	
10029-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	14.79	97.42	32.53	7.80	80.0	± 9.6 %
		Y	11.52	89.75	29.55		80.0	
		Z	14.18	97.61	32.99		80.0	
10030-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	100.00	116.89	29.16	5.30	70.0	± 9.6 %
		Y	100.00	119.53	30.94		70.0	
		Z	100.00	118.05	29.66		70.0	
10031-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	100.00	122.60	28.99	1.88	100.0	± 9.6 %
		Y	100.00	121.51	28.91		100.0	
		Z	100.00	122.48	28.93		100.0	

10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	100.00	133.16	32.27	1.17	100.0	± 9.6 %
		Y	100.00	126.43	29.83		100.0	
		Z	100.00	130.02	30.96		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	32.57	106.74	29.49	5.30	70.0	± 9.6 %
		Y	13.39	91.56	25.42		70.0	
		Z	28.98	104.37	28.55		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	45.93	114.88	30.10	1.88	100.0	± 9.6 %
		Y	7.50	87.12	22.45		100.0	
		Z	20.04	100.44	25.46		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	21.96	105.92	27.68	1.17	100.0	± 9.6 %
		Y	4.51	81.47	20.26		100.0	
		Z	9.42	91.44	22.56		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	45.23	112.33	31.05	5.30	70.0	± 9.6 %
		Y	15.39	94.09	26.30		70.0	
		Z	38.95	109.34	29.96		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	39.94	112.82	29.55	1.88	100.0	± 9.6 %
		Y	7.15	86.45	22.19		100.0	
		Z	17.08	98.28	24.84		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	24.74	108.13	28.38	1.17	100.0	± 9.6 %
		Y	4.66	82.21	20.61		100.0	
		Z	9.87	92.45	22.99		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	7.01	92.94	24.21	0.00	150.0	± 9.6 %
		Y	2.15	73.76	17.15		150.0	
		Z	2.61	77.73	17.80		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	100.00	117.06	30.06	7.78	50.0	± 9.6 %
		Y	33.54	102.85	27.66		50.0	
		Z	100.00	118.08	30.50		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.00	127.60	2.39	0.00	150.0	± 9.6 %
		Y	0.00	96.78	0.00		150.0	
		Z	0.01	122.93	2.94		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	13.06	86.13	24.73	13.80	25.0	± 9.6 %
		Y	11.09	82.14	24.36		25.0	
		Z	16.17	90.99	26.57		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	16.50	91.24	25.09	10.79	40.0	± 9.6 %
		Y	12.58	86.37	24.53		40.0	
		Z	22.30	97.25	27.17		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	15.28	90.62	25.52	9.03	50.0	± 9.6 %
		Y	11.72	85.08	24.19		50.0	
		Z	17.40	93.38	26.42		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	10.69	91.04	29.62	6.55	100.0	± 9.6 %
		Y	9.07	85.67	27.37		100.0	
		Z	9.88	90.10	29.57		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.68	70.66	19.16	0.61	110.0	± 9.6 %
		Y	1.55	67.69	17.16		110.0	
		Z	1.56	68.66	17.81		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	100.00	135.64	35.63	1.30	110.0	± 9.6 %
		Y	100.00	131.50	34.05		110.0	
		Z	100.00	134.30	35.03		110.0	

10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	54.02	125.97	35.38	2.04	110.0	± 9.6 %
		Y	8.96	93.29	26.14		110.0	
		Z	19.56	108.50	30.84		110.0	
10062-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.87	67.49	17.06	0.49	100.0	± 9.6 %
		Y	4.91	67.10	16.78		100.0	
		Z	4.75	67.38	16.89		100.0	
10063-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.91	67.64	17.19	0.72	100.0	± 9.6 %
		Y	4.96	67.27	16.93		100.0	
		Z	4.80	67.55	17.03		100.0	
10064-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	5.22	67.92	17.42	0.86	100.0	± 9.6 %
		Y	5.29	67.61	17.19		100.0	
		Z	5.08	67.80	17.26		100.0	
10065-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	5.13	67.94	17.58	1.21	100.0	± 9.6 %
		Y	5.21	67.67	17.37		100.0	
		Z	5.00	67.84	17.45		100.0	
10066-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	5.18	68.06	17.79	1.46	100.0	± 9.6 %
		Y	5.27	67.81	17.60		100.0	
		Z	5.05	67.98	17.68		100.0	
10067-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	5.49	68.19	18.21	2.04	100.0	± 9.6 %
		Y	5.60	67.98	18.05		100.0	
		Z	5.39	68.30	18.20		100.0	
10068-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	5.62	68.50	18.55	2.55	100.0	± 9.6 %
		Y	5.76	68.37	18.43		100.0	
		Z	5.50	68.48	18.50		100.0	
10069-CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.69	68.44	18.72	2.67	100.0	± 9.6 %
		Y	5.84	68.31	18.60		100.0	
		Z	5.58	68.54	18.73		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	5.27	67.84	18.05	1.99	100.0	± 9.6 %
		Y	5.37	67.63	17.89		100.0	
		Z	5.20	67.92	18.02		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	5.34	68.42	18.38	2.30	100.0	± 9.6 %
		Y	5.45	68.23	18.22		100.0	
		Z	5.25	68.45	18.35		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	5.47	68.76	18.79	2.83	100.0	± 9.6 %
		Y	5.61	68.62	18.66		100.0	
		Z	5.40	68.87	18.81		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	5.51	68.83	19.02	3.30	100.0	± 9.6 %
		Y	5.66	68.73	18.92		100.0	
		Z	5.46	68.99	19.07		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	5.65	69.27	19.49	3.82	90.0	± 9.6 %
		Y	5.85	69.26	19.43		90.0	
		Z	5.60	69.37	19.53		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	5.67	69.08	19.61	4.15	90.0	± 9.6 %
		Y	5.87	69.08	19.56		90.0	
		Z	5.65	69.30	19.73		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	5.72	69.19	19.72	4.30	90.0	± 9.6 %
		Y	5.92	69.19	19.67		90.0	
		Z	5.70	69.44	19.85		90.0	

10081-CAB	CDMA2000 (1xRTT, RC3)	X	2.28	81.48	20.27	0.00	150.0	± 9.6 %
		Y	1.00	67.64	14.10		150.0	
		Z	1.04	69.66	14.21		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	2.13	64.08	8.83	4.77	80.0	± 9.6 %
		Y	2.57	65.34	10.16		80.0	
		Z	2.13	64.35	9.02		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	100.00	118.32	30.42	6.56	60.0	± 9.6 %
		Y	75.01	116.70	31.30		60.0	
		Z	100.00	119.58	30.97		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	2.20	71.50	18.09	0.00	150.0	± 9.6 %
		Y	1.90	67.97	16.04		150.0	
		Z	1.97	69.50	16.62		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	2.16	71.55	18.11	0.00	150.0	± 9.6 %
		Y	1.86	67.93	16.01		150.0	
		Z	1.93	69.49	16.61		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	22.24	106.54	36.64	9.56	60.0	± 9.6 %
		Y	15.16	95.02	32.46		60.0	
		Z	23.72	109.80	38.22		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	3.77	73.97	18.60	0.00	150.0	± 9.6 %
		Y	3.32	71.02	16.99		150.0	
		Z	3.27	71.57	17.41		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.50	69.24	17.00	0.00	150.0	± 9.6 %
		Y	3.39	67.99	16.16		150.0	
		Z	3.29	68.22	16.35		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.59	69.07	17.02	0.00	150.0	± 9.6 %
		Y	3.49	67.92	16.24		150.0	
		Z	3.39	68.14	16.41		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	9.27	79.88	21.95	3.98	65.0	± 9.6 %
		Y	8.43	77.27	20.93		65.0	
		Z	9.22	80.33	22.26		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	8.81	77.80	21.97	3.98	65.0	± 9.6 %
		Y	8.62	76.41	21.37		65.0	
		Z	8.59	77.82	22.06		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	8.19	76.36	21.65	3.98	65.0	± 9.6 %
		Y	7.71	74.18	20.67		65.0	
		Z	7.86	76.00	21.56		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	3.29	73.14	18.47	0.00	150.0	± 9.6 %
		Y	2.93	70.22	16.82		150.0	
		Z	2.85	70.87	17.28		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	3.18	69.27	17.05	0.00	150.0	± 9.6 %
		Y	3.05	67.82	16.11		150.0	
		Z	2.94	68.18	16.29		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	2.72	72.52	18.35	0.00	150.0	± 9.6 %
		Y	2.40	69.28	16.49		150.0	
		Z	2.33	70.22	16.99		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.96	70.65	17.72	0.00	150.0	± 9.6 %
		Y	2.76	68.51	16.45		150.0	
		Z	2.69	69.33	16.67		150.0	

10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	3.29	69.10	17.02	0.00	150.0	± 9.6 %
		Y	3.17	67.76	16.14		150.0	
		Z	3.06	68.15	16.32		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	3.11	70.58	17.73	0.00	150.0	± 9.6 %
		Y	2.92	68.59	16.56		150.0	
		Z	2.83	69.41	16.76		150.0	
10114-CAB	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	5.26	67.86	16.86	0.00	150.0	± 9.6 %
		Y	5.25	67.40	16.53		150.0	
		Z	5.14	67.65	16.68		150.0	
10115-CAB	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.60	68.11	16.98	0.00	150.0	± 9.6 %
		Y	5.62	67.73	16.70		150.0	
		Z	5.40	67.70	16.71		150.0	
10116-CAB	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.38	68.12	16.91	0.00	150.0	± 9.6 %
		Y	5.38	67.68	16.59		150.0	
		Z	5.23	67.82	16.70		150.0	
10117-CAB	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	5.24	67.79	16.84	0.00	150.0	± 9.6 %
		Y	5.25	67.40	16.55		150.0	
		Z	5.10	67.49	16.62		150.0	
10118-CAB	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.68	68.30	17.08	0.00	150.0	± 9.6 %
		Y	5.70	67.92	16.80		150.0	
		Z	5.48	67.91	16.83		150.0	
10119-CAB	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	5.35	68.04	16.89	0.00	150.0	± 9.6 %
		Y	5.35	67.63	16.58		150.0	
		Z	5.21	67.79	16.69		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.63	69.06	16.93	0.00	150.0	± 9.6 %
		Y	3.53	67.92	16.17		150.0	
		Z	3.42	68.16	16.33		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.75	69.06	17.04	0.00	150.0	± 9.6 %
		Y	3.65	67.98	16.31		150.0	
		Z	3.54	68.23	16.48		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	2.58	73.34	18.51	0.00	150.0	± 9.6 %
		Y	2.18	69.29	16.31		150.0	
		Z	2.13	70.56	16.73		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	3.01	72.46	18.03	0.00	150.0	± 9.6 %
		Y	2.65	69.32	16.38		150.0	
		Z	2.60	70.44	16.44		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	2.64	69.45	16.13	0.00	150.0	± 9.6 %
		Y	2.44	67.23	14.90		150.0	
		Z	2.30	67.73	14.62		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	2.19	73.84	16.83	0.00	150.0	± 9.6 %
		Y	1.54	67.56	13.92		150.0	
		Z	1.24	66.10	11.96		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	6.00	80.94	18.56	0.00	150.0	± 9.6 %
		Y	2.97	71.15	15.11		150.0	
		Z	2.39	68.87	12.55		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	13.14	91.59	22.17	0.00	150.0	± 9.6 %
		Y	3.76	74.52	16.70		150.0	
		Z	3.21	72.37	14.16		150.0	

10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	3.19	69.34	17.10	0.00	150.0	± 9.6 %
		Y	3.06	67.89	16.15		150.0	
		Z	2.95	68.25	16.34		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	3.29	69.16	17.06	0.00	150.0	± 9.6 %
		Y	3.18	67.81	16.18		150.0	
		Z	3.07	68.20	16.36		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	10.08	82.65	23.10	3.98	65.0	± 9.6 %
		Y	9.04	79.65	21.96		65.0	
		Z	10.06	83.26	23.42		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	8.50	78.17	21.88	3.98	65.0	± 9.6 %
		Y	8.23	76.54	21.20		65.0	
		Z	8.27	78.18	21.88		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	8.91	78.99	22.55	3.98	65.0	± 9.6 %
		Y	8.60	77.29	21.85		65.0	
		Z	8.71	79.10	22.58		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.81	73.15	18.70	0.00	150.0	± 9.6 %
		Y	2.46	69.77	16.80		150.0	
		Z	2.38	70.62	17.23		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.96	70.66	17.73	0.00	150.0	± 9.6 %
		Y	2.76	68.51	16.46		150.0	
		Z	2.69	69.35	16.69		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	2.55	74.52	18.86	0.00	150.0	± 9.6 %
		Y	2.05	69.58	16.30		150.0	
		Z	2.00	70.89	16.58		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	2.62	71.06	16.72	0.00	150.0	± 9.6 %
		Y	2.30	67.95	15.09		150.0	
		Z	2.17	68.55	14.74		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	3.11	70.65	17.78	0.00	150.0	± 9.6 %
		Y	2.92	68.65	16.60		150.0	
		Z	2.84	69.48	16.81		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	2.77	71.67	17.06	0.00	150.0	± 9.6 %
		Y	2.42	68.44	15.40		150.0	
		Z	2.27	68.98	14.99		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	3.14	71.31	17.89	0.00	150.0	± 9.6 %
		Y	2.90	69.12	16.57		150.0	
		Z	2.85	69.90	17.00		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	3.19	69.15	17.05	0.00	150.0	± 9.6 %
		Y	3.08	67.73	16.13		150.0	
		Z	2.97	68.19	16.30		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	3.30	69.19	17.10	0.00	150.0	± 9.6 %
		Y	3.18	67.80	16.21		150.0	
		Z	3.08	68.34	16.41		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	4.14	72.27	20.63	3.01	150.0	± 9.6 %
		Y	3.92	70.06	19.35		150.0	
		Z	3.85	71.64	20.32		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	5.70	76.91	21.68	3.01	150.0	± 9.6 %
		Y	4.94	72.92	19.80		150.0	
		Z	5.14	76.11	21.32		150.0	

10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	6.50	79.76	23.17	3.01	150.0	± 9.6 %
		Y	5.42	74.94	21.01		150.0	
		Z	5.85	78.93	22.82		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	3.88	74.16	21.49	3.01	150.0	± 9.6 %
		Y	3.53	70.80	19.64		150.0	
		Z	3.37	71.79	20.43		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	7.14	85.17	25.38	3.01	150.0	± 9.6 %
		Y	5.02	76.66	21.81		150.0	
		Z	5.41	80.65	23.72		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	5.21	78.32	21.78	3.01	150.0	± 9.6 %
		Y	4.13	72.50	19.15		150.0	
		Z	4.25	75.40	20.64		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	82.16	130.26	39.09	6.02	65.0	± 9.6 %
		Y	17.62	97.94	29.93		65.0	
		Z	65.78	128.99	39.45		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	91.21	124.95	35.70	6.02	65.0	± 9.6 %
		Y	19.75	96.35	28.03		65.0	
		Z	100.00	129.35	37.29		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	55.61	114.43	32.46	6.02	65.0	± 9.6 %
		Y	16.76	92.45	26.36		65.0	
		Z	70.56	121.14	34.65		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	3.81	73.71	21.19	3.01	150.0	± 9.6 %
		Y	3.48	70.45	19.37		150.0	
		Z	3.32	71.46	20.19		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	7.15	85.21	25.39	3.01	150.0	± 9.6 %
		Y	5.03	76.68	21.82		150.0	
		Z	5.42	80.68	23.74		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	3.85	73.93	21.31	3.01	150.0	± 9.6 %
		Y	3.51	70.63	19.48		150.0	
		Z	3.35	71.61	20.27		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	7.01	84.77	25.21	3.01	150.0	± 9.6 %
		Y	4.96	76.40	21.67		150.0	
		Z	5.36	80.45	23.62		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	6.07	81.52	23.41	3.01	150.0	± 9.6 %
		Y	4.53	74.41	20.33		150.0	
		Z	4.79	77.92	22.06		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	5.18	78.18	21.70	3.01	150.0	± 9.6 %
		Y	4.12	72.40	19.09		150.0	
		Z	4.24	75.33	20.60		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	3.84	73.91	21.30	3.01	150.0	± 9.6 %
		Y	3.51	70.61	19.47		150.0	
		Z	3.35	71.60	20.27		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	6.99	84.74	25.19	3.01	150.0	± 9.6 %
		Y	4.95	76.38	21.66		150.0	
		Z	5.35	80.42	23.61		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	5.17	78.15	21.69	3.01	150.0	± 9.6 %
		Y	4.11	72.38	19.08		150.0	
		Z	4.23	75.30	20.59		150.0	

10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	3.86	73.96	21.33	3.01	150.0	± 9.6 %
		Y	3.52	70.65	19.50		150.0	
		Z	3.36	71.64	20.29		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	7.04	84.85	25.24	3.01	150.0	± 9.6 %
		Y	4.98	76.45	21.70		150.0	
		Z	5.38	80.50	23.65		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	5.20	78.24	21.73	3.01	150.0	± 9.6 %
		Y	4.13	72.45	19.11		150.0	
		Z	4.25	75.38	20.62		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	3.87	74.02	21.39	3.01	150.0	± 9.6 %
		Y	3.53	70.69	19.55		150.0	
		Z	3.37	71.71	20.36		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	7.44	86.01	25.76	3.01	150.0	± 9.6 %
		Y	5.15	77.16	22.09		150.0	
		Z	5.58	81.30	24.05		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	5.39	78.94	22.10	3.01	150.0	± 9.6 %
		Y	4.22	72.89	19.39		150.0	
		Z	4.36	75.91	20.93		150.0	
10193-CAB	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.67	67.32	16.65	0.00	150.0	± 9.6 %
		Y	4.67	66.82	16.30		150.0	
		Z	4.53	67.11	16.38		150.0	
10194-CAB	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.85	67.66	16.76	0.00	150.0	± 9.6 %
		Y	4.86	67.18	16.41		150.0	
		Z	4.69	67.40	16.51		150.0	
10195-CAB	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.89	67.68	16.77	0.00	150.0	± 9.6 %
		Y	4.90	67.20	16.42		150.0	
		Z	4.73	67.43	16.52		150.0	
10196-CAB	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.68	67.41	16.68	0.00	150.0	± 9.6 %
		Y	4.68	66.91	16.33		150.0	
		Z	4.52	67.15	16.39		150.0	
10197-CAB	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.87	67.69	16.78	0.00	150.0	± 9.6 %
		Y	4.88	67.20	16.42		150.0	
		Z	4.70	67.42	16.52		150.0	
10198-CAB	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.90	67.70	16.79	0.00	150.0	± 9.6 %
		Y	4.91	67.21	16.43		150.0	
		Z	4.73	67.45	16.54		150.0	
10219-CAB	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.63	67.43	16.65	0.00	150.0	± 9.6 %
		Y	4.63	66.93	16.29		150.0	
		Z	4.47	67.18	16.36		150.0	
10220-CAB	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.86	67.66	16.77	0.00	150.0	± 9.6 %
		Y	4.88	67.19	16.42		150.0	
		Z	4.69	67.38	16.50		150.0	
10221-CAB	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.90	67.62	16.76	0.00	150.0	± 9.6 %
		Y	4.91	67.14	16.42		150.0	
		Z	4.74	67.37	16.52		150.0	
10222-CAB	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	5.22	67.81	16.85	0.00	150.0	± 9.6 %
		Y	5.23	67.42	16.55		150.0	
		Z	5.08	67.50	16.62		150.0	

10223-CAB	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.53	67.97	16.94	0.00	150.0	± 9.6 %
		Y	5.59	67.74	16.73		150.0	
		Z	5.38	67.75	16.76		150.0	
10224-CAB	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	5.26	67.91	16.83	0.00	150.0	± 9.6 %
		Y	5.27	67.51	16.52		150.0	
		Z	5.12	67.61	16.60		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	3.00	67.51	16.39	0.00	150.0	± 9.6 %
		Y	2.93	66.39	15.65		150.0	
		Z	2.82	66.88	15.63		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	100.00	126.81	36.25	6.02	65.0	± 9.6 %
		Y	20.60	97.21	28.37		65.0	
		Z	100.00	129.54	37.41		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	65.64	117.49	33.34	6.02	65.0	± 9.6 %
		Y	18.22	94.00	26.93		65.0	
		Z	85.61	124.65	35.59		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	79.85	130.36	39.26	6.02	65.0	± 9.6 %
		Y	20.21	101.07	31.01		65.0	
		Z	65.84	129.47	39.67		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	91.11	124.93	35.70	6.02	65.0	± 9.6 %
		Y	19.80	96.38	28.04		65.0	
		Z	100.00	129.35	37.29		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	60.15	115.83	32.84	6.02	65.0	± 9.6 %
		Y	17.60	93.31	26.65		65.0	
		Z	77.12	122.67	35.03		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	72.28	128.22	38.64	6.02	65.0	± 9.6 %
		Y	19.39	100.17	30.67		65.0	
		Z	59.87	127.39	39.07		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	91.25	124.96	35.71	6.02	65.0	± 9.6 %
		Y	19.78	96.37	28.04		65.0	
		Z	100.00	129.36	37.30		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	60.26	115.87	32.85	6.02	65.0	± 9.6 %
		Y	17.59	93.32	26.66		65.0	
		Z	77.19	122.70	35.04		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	65.41	125.97	37.96	6.02	65.0	± 9.6 %
		Y	18.62	99.23	30.29		65.0	
		Z	54.84	125.34	38.42		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	91.93	125.11	35.75	6.02	65.0	± 9.6 %
		Y	19.81	96.41	28.05		65.0	
		Z	100.00	129.37	37.30		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	61.00	116.05	32.90	6.02	65.0	± 9.6 %
		Y	17.69	93.40	26.68		65.0	
		Z	78.43	122.94	35.10		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	73.61	128.60	38.74	6.02	65.0	± 9.6 %
		Y	19.49	100.29	30.70		65.0	
		Z	60.90	127.76	39.16		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	91.47	125.02	35.72	6.02	65.0	± 9.6 %
		Y	19.78	96.38	28.04		65.0	
		Z	100.00	129.37	37.30		65.0	

10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	60.36	115.92	32.87	6.02	65.0	± 9.6 %
		Y	17.58	93.32	26.66		65.0	
		Z	77.24	122.72	35.05		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	73.31	128.53	38.72	6.02	65.0	± 9.6 %
		Y	19.44	100.25	30.69		65.0	
		Z	60.69	127.70	39.15		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	14.22	90.30	28.70	6.98	65.0	± 9.6 %
		Y	11.91	84.78	26.56		65.0	
		Z	15.04	92.96	29.82		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	12.20	86.96	27.37	6.98	65.0	± 9.6 %
		Y	11.04	83.09	25.82		65.0	
		Z	14.66	92.40	29.55		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	9.46	83.32	26.91	6.98	65.0	± 9.6 %
		Y	9.15	80.79	25.71		65.0	
		Z	10.96	87.97	28.96		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	10.76	82.68	21.60	3.98	65.0	± 9.6 %
		Y	9.17	79.37	20.74		65.0	
		Z	9.65	80.90	20.36		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	10.44	81.95	21.29	3.98	65.0	± 9.6 %
		Y	9.07	78.96	20.54		65.0	
		Z	9.24	79.99	19.97		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	11.35	86.57	23.09	3.98	65.0	± 9.6 %
		Y	8.94	81.85	21.69		65.0	
		Z	10.01	84.49	21.88		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	8.24	79.27	21.01	3.98	65.0	± 9.6 %
		Y	7.74	77.28	20.43		65.0	
		Z	7.64	78.13	20.10		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	8.11	78.56	20.72	3.98	65.0	± 9.6 %
		Y	7.73	76.82	20.23		65.0	
		Z	7.48	77.39	19.79		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	12.62	88.79	24.56	3.98	65.0	± 9.6 %
		Y	9.64	83.20	22.76		65.0	
		Z	12.16	88.40	24.15		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	9.13	81.24	23.10	3.98	65.0	± 9.6 %
		Y	8.50	78.84	22.20		65.0	
		Z	8.86	81.11	22.89		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	8.47	78.74	21.83	3.98	65.0	± 9.6 %
		Y	8.10	76.89	21.13		65.0	
		Z	8.20	78.63	21.61		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	11.59	86.92	24.65	3.98	65.0	± 9.6 %
		Y	9.53	82.29	23.01		65.0	
		Z	11.63	87.60	24.87		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	8.27	77.55	21.65	3.98	65.0	± 9.6 %
		Y	8.04	76.02	21.02		65.0	
		Z	8.09	77.65	21.62		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	8.67	78.35	22.26	3.98	65.0	± 9.6 %
		Y	8.41	76.75	21.61		65.0	
		Z	8.50	78.49	22.25		65.0	

10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	9.69	82.20	23.16	3.98	65.0	± 9.6 %
		Y	8.77	79.29	22.03		65.0	
		Z	9.70	82.84	23.45		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	9.10	79.45	19.54	3.98	65.0	± 9.6 %
		Y	8.28	77.46	19.27		65.0	
		Z	7.50	76.38	17.64		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	8.71	78.44	19.07	3.98	65.0	± 9.6 %
		Y	8.14	76.86	18.96		65.0	
		Z	7.10	75.27	17.09		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	9.16	82.49	20.98	3.98	65.0	± 9.6 %
		Y	7.92	79.54	20.28		65.0	
		Z	7.29	78.75	18.94		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	8.59	79.95	21.73	3.98	65.0	± 9.6 %
		Y	8.03	77.80	21.03		65.0	
		Z	8.13	79.27	21.11		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	8.53	79.55	21.59	3.98	65.0	± 9.6 %
		Y	8.06	77.57	20.96		65.0	
		Z	8.06	78.82	20.93		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	11.51	87.11	24.32	3.98	65.0	± 9.6 %
		Y	9.26	82.24	22.68		65.0	
		Z	11.28	87.12	24.13		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	9.12	81.19	23.06	3.98	65.0	± 9.6 %
		Y	8.49	78.79	22.16		65.0	
		Z	8.84	81.05	22.85		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	8.46	78.73	21.82	3.98	65.0	± 9.6 %
		Y	8.09	76.88	21.13		65.0	
		Z	8.19	78.61	21.60		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	11.49	86.74	24.57	3.98	65.0	± 9.6 %
		Y	9.47	82.16	22.94		65.0	
		Z	11.51	87.39	24.78		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	8.50	78.18	21.88	3.98	65.0	± 9.6 %
		Y	8.22	76.54	21.21		65.0	
		Z	8.27	78.18	21.88		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	8.90	78.98	22.54	3.98	65.0	± 9.6 %
		Y	8.60	77.28	21.84		65.0	
		Z	8.71	79.09	22.57		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	10.06	82.61	23.09	3.98	65.0	± 9.6 %
		Y	9.03	79.62	21.95		65.0	
		Z	10.04	83.22	23.41		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	8.87	77.45	21.95	3.98	65.0	± 9.6 %
		Y	8.72	76.18	21.40		65.0	
		Z	8.67	77.54	22.05		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	8.77	76.99	21.83	3.98	65.0	± 9.6 %
		Y	8.66	75.80	21.31		65.0	
		Z	8.60	77.10	21.92		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	9.16	79.20	21.93	3.98	65.0	± 9.6 %
		Y	8.71	77.35	21.19		65.0	
		Z	9.06	79.57	22.19		65.0	

10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	X	2.80	68.17	16.47	0.00	150.0	± 9.6 %
		Y	2.67	66.63	15.50		150.0	
		Z	2.65	67.51	15.70		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	2.12	73.27	18.65	0.00	150.0	± 9.6 %
		Y	1.72	68.53	16.00		150.0	
		Z	1.76	70.05	16.72		150.0	
10277-CAA	PHS (QPSK)	X	5.32	68.96	13.42	9.03	50.0	± 9.6 %
		Y	6.41	71.20	15.49		50.0	
		Z	5.12	68.74	13.08		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	9.11	79.62	20.31	9.03	50.0	± 9.6 %
		Y	9.22	79.31	21.03		50.0	
		Z	8.20	77.78	19.21		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	9.25	79.80	20.39	9.03	50.0	± 9.6 %
		Y	9.36	79.46	21.09		50.0	
		Z	8.30	77.91	19.28		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	3.59	82.57	20.48	0.00	150.0	± 9.6 %
		Y	1.73	70.44	15.45		150.0	
		Z	1.75	72.09	15.26		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	2.13	80.55	19.92	0.00	150.0	± 9.6 %
		Y	0.98	67.37	13.95		150.0	
		Z	1.01	69.27	14.02		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	12.02	108.71	29.17	0.00	150.0	± 9.6 %
		Y	1.26	72.03	16.54		150.0	
		Z	1.93	79.12	18.49		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	100.00	144.61	38.38	0.00	150.0	± 9.6 %
		Y	1.90	78.46	19.68		150.0	
		Z	6.64	97.19	24.86		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	11.58	85.59	24.60	9.03	50.0	± 9.6 %
		Y	10.44	82.50	23.85		50.0	
		Z	13.98	88.93	25.45		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	3.31	73.28	18.55	0.00	150.0	± 9.6 %
		Y	2.94	70.32	16.89		150.0	
		Z	2.86	70.97	17.35		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	2.53	75.50	18.42	0.00	150.0	± 9.6 %
		Y	1.83	69.14	15.39		150.0	
		Z	1.69	69.62	14.84		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	6.61	82.78	20.21	0.00	150.0	± 9.6 %
		Y	3.43	72.67	16.51		150.0	
		Z	3.82	74.80	16.21		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	3.24	71.51	15.06	0.00	150.0	± 9.6 %
		Y	2.57	67.68	13.54		150.0	
		Z	2.21	66.93	12.03		150.0	
10301-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	5.62	68.28	18.87	4.17	80.0	± 9.6 %
		Y	5.93	68.63	18.94		80.0	
		Z	5.89	69.91	19.47		80.0	
10302-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	6.17	69.25	19.82	4.96	80.0	± 9.6 %
		Y	6.38	69.08	19.58		80.0	
		Z	6.23	69.95	19.93		80.0	

10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	6.02	69.32	19.87	4.96	80.0	± 9.6 %
		Y	6.26	69.22	19.66		80.0	
		Z	6.09	70.04	19.96		80.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	5.67	68.65	19.09	4.17	80.0	± 9.6 %
		Y	5.85	68.42	18.82		80.0	
		Z	5.71	69.28	19.12		80.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	9.13	83.00	26.75	6.02	50.0	± 9.6 %
		Y	11.08	85.83	27.58		50.0	
		Z	11.97	88.64	28.23		50.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	6.47	72.26	21.90	6.02	50.0	± 9.6 %
		Y	6.84	72.27	21.68		50.0	
		Z	6.81	73.77	22.17		50.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	6.58	73.04	22.08	6.02	50.0	± 9.6 %
		Y	8.34	78.37	24.64		50.0	
		Z	6.92	74.46	22.29		50.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	6.66	73.56	22.34	6.02	50.0	± 9.6 %
		Y	8.60	79.30	25.04		50.0	
		Z	7.08	75.16	22.62		50.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	6.58	72.60	22.09	6.02	50.0	± 9.6 %
		Y	6.95	72.58	21.85		50.0	
		Z	6.90	74.05	22.35		50.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	6.50	72.56	21.95	6.02	50.0	± 9.6 %
		Y	6.87	72.52	21.70		50.0	
		Z	6.86	74.10	22.23		50.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	3.70	72.28	18.01	0.00	150.0	± 9.6 %
		Y	3.30	69.61	16.53		150.0	
		Z	3.23	70.11	16.90		150.0	
10313-AAA	iDEN 1:3	X	9.18	81.61	19.86	6.99	70.0	± 9.6 %
		Y	7.64	78.40	19.13		70.0	
		Z	9.78	83.14	20.58		70.0	
10314-AAA	iDEN 1:6	X	13.83	90.60	25.32	10.00	30.0	± 9.6 %
		Y	9.35	83.01	23.15		30.0	
		Z	14.01	91.81	25.99		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	1.27	67.24	17.67	0.17	150.0	± 9.6 %
		Y	1.20	64.93	15.83		150.0	
		Z	1.21	65.68	16.36		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.76	67.47	16.83	0.17	150.0	± 9.6 %
		Y	4.78	67.03	16.51		150.0	
		Z	4.63	67.31	16.62		150.0	
10317-AAB	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.76	67.47	16.83	0.17	150.0	± 9.6 %
		Y	4.78	67.03	16.51		150.0	
		Z	4.63	67.31	16.62		150.0	
10400-AAC	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.86	67.74	16.77	0.00	150.0	± 9.6 %
		Y	4.87	67.24	16.40		150.0	
		Z	4.68	67.47	16.52		150.0	
10401-AAC	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.51	67.76	16.81	0.00	150.0	± 9.6 %
		Y	5.52	67.36	16.52		150.0	
		Z	5.41	67.67	16.70		150.0	

10402-AAC	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.79	68.18	16.86	0.00	150.0	± 9.6 %
		Y	5.81	67.85	16.61		150.0	
		Z	5.64	67.83	16.63		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	3.59	82.57	20.48	0.00	115.0	± 9.6 %
		Y	1.73	70.44	15.45		115.0	
		Z	1.75	72.09	15.26		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	3.59	82.57	20.48	0.00	115.0	± 9.6 %
		Y	1.73	70.44	15.45		115.0	
		Z	1.75	72.09	15.26		115.0	
10406-AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	100.00	122.57	31.18	0.00	100.0	± 9.6 %
		Y	18.35	99.60	26.20		100.0	
		Z	100.00	120.33	29.78		100.0	
10410-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.29	30.51	3.23	80.0	± 9.6 %
		Y	100.00	120.68	31.13		80.0	
		Z	100.00	122.62	31.38		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	1.09	65.33	16.67	0.00	150.0	± 9.6 %
		Y	1.03	63.31	14.91		150.0	
		Z	1.05	64.05	15.43		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.67	67.36	16.71	0.00	150.0	± 9.6 %
		Y	4.67	66.86	16.34		150.0	
		Z	4.53	67.14	16.45		150.0	
10417-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.67	67.36	16.71	0.00	150.0	± 9.6 %
		Y	4.67	66.86	16.34		150.0	
		Z	4.53	67.14	16.45		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	X	4.66	67.53	16.73	0.00	150.0	± 9.6 %
		Y	4.66	67.00	16.35		150.0	
		Z	4.52	67.33	16.49		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	X	4.68	67.47	16.73	0.00	150.0	± 9.6 %
		Y	4.68	66.95	16.36		150.0	
		Z	4.54	67.26	16.48		150.0	
10422-AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.80	67.45	16.73	0.00	150.0	± 9.6 %
		Y	4.81	66.96	16.37		150.0	
		Z	4.65	67.24	16.49		150.0	
10423-AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.99	67.80	16.85	0.00	150.0	± 9.6 %
		Y	5.00	67.33	16.51		150.0	
		Z	4.80	67.54	16.59		150.0	
10424-AAA	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.90	67.76	16.83	0.00	150.0	± 9.6 %
		Y	4.91	67.27	16.47		150.0	
		Z	4.73	67.50	16.57		150.0	
10425-AAA	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.49	68.02	16.94	0.00	150.0	± 9.6 %
		Y	5.50	67.62	16.64		150.0	
		Z	5.34	67.73	16.73		150.0	
10426-AAA	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.49	68.02	16.94	0.00	150.0	± 9.6 %
		Y	5.51	67.65	16.65		150.0	
		Z	5.36	67.83	16.78		150.0	

10427-AAA	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.50	68.00	16.93	0.00	150.0	± 9.6 %
		Y	5.52	67.64	16.64		150.0	
		Z	5.36	67.74	16.73		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.54	72.09	19.09	0.00	150.0	± 9.6 %
		Y	4.40	70.73	18.36		150.0	
		Z	4.26	71.56	18.37		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	4.40	68.10	16.85	0.00	150.0	± 9.6 %
		Y	4.40	67.42	16.40		150.0	
		Z	4.19	67.79	16.46		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.68	67.87	16.83	0.00	150.0	± 9.6 %
		Y	4.69	67.31	16.44		150.0	
		Z	4.50	67.59	16.53		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.92	67.80	16.85	0.00	150.0	± 9.6 %
		Y	4.93	67.31	16.50		150.0	
		Z	4.74	67.53	16.59		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.73	73.25	19.23	0.00	150.0	± 9.6 %
		Y	4.51	71.54	18.38		150.0	
		Z	4.38	72.53	18.34		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.11	30.42	3.23	80.0	± 9.6 %
		Y	100.00	120.53	31.07		80.0	
		Z	100.00	122.42	31.29		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.76	68.51	16.50	0.00	150.0	± 9.6 %
		Y	3.71	67.48	15.90		150.0	
		Z	3.49	67.91	15.73		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	X	4.23	67.89	16.73	0.00	150.0	± 9.6 %
		Y	4.22	67.19	16.26		150.0	
		Z	4.04	67.58	16.33		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	X	4.49	67.72	16.75	0.00	150.0	± 9.6 %
		Y	4.48	67.13	16.34		150.0	
		Z	4.32	67.42	16.43		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.67	67.59	16.73	0.00	150.0	± 9.6 %
		Y	4.66	67.07	16.35		150.0	
		Z	4.52	67.31	16.45		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	3.71	68.96	16.29	0.00	150.0	± 9.6 %
		Y	3.63	67.76	15.64		150.0	
		Z	3.37	68.05	15.28		150.0	
10456-AAA	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.34	68.51	17.03	0.00	150.0	± 9.6 %
		Y	6.36	68.23	16.81		150.0	
		Z	6.24	68.31	16.89		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.87	65.97	16.44	0.00	150.0	± 9.6 %
		Y	3.87	65.48	16.06		150.0	
		Z	3.81	65.79	16.17		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	4.35	72.54	18.72	0.00	150.0	± 9.6 %
		Y	4.10	70.59	17.78		150.0	
		Z	4.02	71.83	17.67		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	5.25	68.89	18.60	0.00	150.0	± 9.6 %
		Y	5.22	68.08	18.20		150.0	
		Z	4.96	68.66	18.04		150.0	

10460-AAA	UMTS-FDD (WCDMA, AMR)	X	1.62	80.44	22.68	0.00	150.0	± 9.6 %
		Y	0.96	69.05	16.73		150.0	
		Z	1.09	72.04	18.32		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	125.40	32.90	3.29	80.0	± 9.6 %
		Y	100.00	122.42	32.02		80.0	
		Z	100.00	127.89	33.84		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	109.25	25.21	3.23	80.0	± 9.6 %
		Y	100.00	110.42	26.29		80.0	
		Z	100.00	110.45	25.54		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	106.10	23.70	3.23	80.0	± 9.6 %
		Y	31.87	95.11	22.04		80.0	
		Z	100.00	107.01	23.88		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.48	31.85	3.23	80.0	± 9.6 %
		Y	100.00	120.78	31.11		80.0	
		Z	100.00	125.94	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	100.00	108.73	24.95	3.23	80.0	± 9.6 %
		Y	57.38	103.50	24.59		80.0	
		Z	100.00	109.93	25.28		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	105.62	23.47	3.23	80.0	± 9.6 %
		Y	19.30	89.18	20.39		80.0	
		Z	100.00	106.51	23.65		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.71	31.96	3.23	80.0	± 9.6 %
		Y	100.00	120.96	31.19		80.0	
		Z	100.00	126.19	32.89		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	108.89	25.03	3.23	80.0	± 9.6 %
		Y	68.69	105.73	25.14		80.0	
		Z	100.00	110.12	25.37		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	105.63	23.47	3.23	80.0	± 9.6 %
		Y	19.75	89.45	20.46		80.0	
		Z	100.00	106.53	23.66		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.74	31.96	3.23	80.0	± 9.6 %
		Y	100.00	120.98	31.20		80.0	
		Z	100.00	126.22	32.89		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	108.84	25.00	3.23	80.0	± 9.6 %
		Y	69.00	105.75	25.13		80.0	
		Z	100.00	110.07	25.35		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	105.58	23.44	3.23	80.0	± 9.6 %
		Y	19.79	89.46	20.45		80.0	
		Z	100.00	106.47	23.62		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.71	31.95	3.23	80.0	± 9.6 %
		Y	100.00	120.96	31.18		80.0	
		Z	100.00	126.20	32.88		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	108.85	25.00	3.23	80.0	± 9.6 %
		Y	67.79	105.55	25.09		80.0	
		Z	100.00	110.08	25.35		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	105.59	23.45	3.23	80.0	± 9.6 %
		Y	19.52	89.31	20.41		80.0	
		Z	100.00	106.49	23.63		80.0	

10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	108.68	24.92	3.23	80.0	± 9.6 %
		Y	60.00	104.00	24.69		80.0	
		Z	100.00	109.90	25.26		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	105.53	23.42	3.23	80.0	± 9.6 %
		Y	19.24	89.12	20.35		80.0	
		Z	100.00	106.43	23.60		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	94.50	124.14	33.84	3.23	80.0	± 9.6 %
		Y	12.50	90.83	25.02		80.0	
		Z	100.00	124.95	33.67		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	95.67	115.16	29.54	3.23	80.0	± 9.6 %
		Y	12.83	86.63	22.28		80.0	
		Z	100.00	114.83	28.84		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	58.64	107.02	27.16	3.23	80.0	± 9.6 %
		Y	11.35	84.25	21.22		80.0	
		Z	80.09	110.11	27.23		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	12.89	91.14	23.86	2.23	80.0	± 9.6 %
		Y	6.25	79.51	20.15		80.0	
		Z	8.39	84.42	21.05		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	18.92	92.85	24.00	2.23	80.0	± 9.6 %
		Y	8.58	80.90	20.47		80.0	
		Z	13.62	87.31	21.48		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	15.36	89.71	23.07	2.23	80.0	± 9.6 %
		Y	7.99	79.65	20.04		80.0	
		Z	10.91	84.16	20.49		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	10.83	89.50	24.25	2.23	80.0	± 9.6 %
		Y	6.29	79.77	20.91		80.0	
		Z	8.35	85.48	22.54		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	6.33	78.08	19.97	2.23	80.0	± 9.6 %
		Y	5.11	73.82	18.38		80.0	
		Z	5.40	75.74	18.50		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	6.09	77.15	19.61	2.23	80.0	± 9.6 %
		Y	5.06	73.33	18.18		80.0	
		Z	5.20	74.88	18.15		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.97	83.54	22.89	2.23	80.0	± 9.6 %
		Y	6.02	77.67	20.60		80.0	
		Z	6.66	81.06	21.92		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.54	75.17	19.93	2.23	80.0	± 9.6 %
		Y	5.05	72.55	18.77		80.0	
		Z	5.10	74.15	19.29		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.52	74.58	19.72	2.23	80.0	± 9.6 %
		Y	5.10	72.20	18.66		80.0	
		Z	5.11	73.70	19.12		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	6.68	78.67	21.27	2.23	80.0	± 9.6 %
		Y	5.75	75.05	19.71		80.0	
		Z	5.90	77.08	20.64		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.47	73.05	19.35	2.23	80.0	± 9.6 %
		Y	5.22	71.31	18.50		80.0	
		Z	5.12	72.35	18.92		80.0	

10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.48	72.72	19.22	2.23	80.0	± 9.6 %
		Y	5.27	71.08	18.43		80.0	
		Z	5.15	72.07	18.82		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.90	81.45	22.09	2.23	80.0	± 9.6 %
		Y	6.41	76.92	20.25		80.0	
		Z	6.69	79.16	21.27		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.61	73.73	19.62	2.23	80.0	± 9.6 %
		Y	5.32	71.86	18.72		80.0	
		Z	5.21	72.81	19.16		80.0	
10496-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.57	73.09	19.41	2.23	80.0	± 9.6 %
		Y	5.35	71.43	18.59		80.0	
		Z	5.21	72.31	18.99		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	10.14	86.59	21.54	2.23	80.0	± 9.6 %
		Y	5.12	76.51	18.39		80.0	
		Z	5.35	77.20	17.46		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.29	72.00	15.43	2.23	80.0	± 9.6 %
		Y	3.72	69.52	14.77		80.0	
		Z	2.43	65.17	11.54		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.97	70.70	14.77	2.23	80.0	± 9.6 %
		Y	3.61	68.83	14.36		80.0	
		Z	2.26	64.14	10.91		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	8.79	85.79	23.33	2.23	80.0	± 9.6 %
		Y	5.95	78.30	20.59		80.0	
		Z	7.25	82.97	22.08		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.90	76.65	19.85	2.23	80.0	± 9.6 %
		Y	5.06	73.18	18.47		80.0	
		Z	5.28	75.13	18.80		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.87	76.18	19.62	2.23	80.0	± 9.6 %
		Y	5.09	72.91	18.33		80.0	
		Z	5.26	74.71	18.58		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.83	83.24	22.77	2.23	80.0	± 9.6 %
		Y	5.94	77.45	20.51		80.0	
		Z	6.55	80.79	21.81		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.51	75.05	19.87	2.23	80.0	± 9.6 %
		Y	5.02	72.46	18.72		80.0	
		Z	5.07	74.04	19.23		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.49	74.47	19.66	2.23	80.0	± 9.6 %
		Y	5.07	72.10	18.60		80.0	
		Z	5.08	73.60	19.06		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.81	81.23	22.00	2.23	80.0	± 9.6 %
		Y	6.35	76.76	20.18		80.0	
		Z	6.62	78.99	21.19		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.58	73.65	19.59	2.23	80.0	± 9.6 %
		Y	5.30	71.80	18.69		80.0	
		Z	5.19	72.75	19.13		80.0	

10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.55	73.01	19.36	2.23	80.0	± 9.6 %
		Y	5.33	71.35	18.55		80.0	
		Z	5.19	72.24	18.95		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.03	77.40	20.60	2.23	80.0	± 9.6 %
		Y	6.25	74.54	19.35		80.0	
		Z	6.27	75.89	20.05		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.86	72.49	19.18	2.23	80.0	± 9.6 %
		Y	5.70	71.14	18.49		80.0	
		Z	5.51	71.73	18.83		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.83	72.01	19.03	2.23	80.0	± 9.6 %
		Y	5.71	70.79	18.40		80.0	
		Z	5.52	71.35	18.71		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	8.18	80.50	21.58	2.23	80.0	± 9.6 %
		Y	6.82	76.59	19.98		80.0	
		Z	6.97	78.23	20.79		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.86	73.15	19.44	2.23	80.0	± 9.6 %
		Y	5.65	71.64	18.67		80.0	
		Z	5.45	72.18	19.02		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.75	72.41	19.20	2.23	80.0	± 9.6 %
		Y	5.60	71.07	18.51		80.0	
		Z	5.40	71.58	18.82		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	1.06	65.76	16.90	0.00	150.0	± 9.6 %
		Y	1.00	63.51	14.99		150.0	
		Z	1.02	64.32	15.55		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	5.87	117.81	35.86	0.00	150.0	± 9.6 %
		Y	0.66	71.85	18.17		150.0	
		Z	0.94	79.02	21.78		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	1.03	70.61	19.18	0.00	150.0	± 9.6 %
		Y	0.86	65.67	15.75		150.0	
		Z	0.90	67.08	16.71		150.0	
10518-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.67	67.45	16.69	0.00	150.0	± 9.6 %
		Y	4.67	66.94	16.33		150.0	
		Z	4.52	67.23	16.44		150.0	
10519-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.87	67.70	16.81	0.00	150.0	± 9.6 %
		Y	4.88	67.22	16.46		150.0	
		Z	4.69	67.43	16.54		150.0	
10520-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.72	67.70	16.76	0.00	150.0	± 9.6 %
		Y	4.73	67.19	16.39		150.0	
		Z	4.54	67.39	16.47		150.0	
10521-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.66	67.72	16.76	0.00	150.0	± 9.6 %
		Y	4.66	67.20	16.38		150.0	
		Z	4.48	67.38	16.46		150.0	
10522-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.71	67.76	16.82	0.00	150.0	± 9.6 %
		Y	4.71	67.20	16.42		150.0	
		Z	4.54	67.51	16.56		150.0	

10523-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.59	67.65	16.68	0.00	150.0	± 9.6 %
		Y	4.58	67.09	16.28		150.0	
		Z	4.43	67.41	16.42		150.0	
10524-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.66	67.69	16.79	0.00	150.0	± 9.6 %
		Y	4.66	67.15	16.40		150.0	
		Z	4.48	67.43	16.53		150.0	
10525-AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.63	66.73	16.38	0.00	150.0	± 9.6 %
		Y	4.62	66.18	15.99		150.0	
		Z	4.49	66.49	16.12		150.0	
10526-AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.82	67.13	16.53	0.00	150.0	± 9.6 %
		Y	4.82	66.58	16.14		150.0	
		Z	4.64	66.83	16.26		150.0	
10527-AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.74	67.11	16.49	0.00	150.0	± 9.6 %
		Y	4.73	66.55	16.09		150.0	
		Z	4.57	66.80	16.20		150.0	
10528-AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.76	67.13	16.52	0.00	150.0	± 9.6 %
		Y	4.75	66.57	16.12		150.0	
		Z	4.58	66.81	16.23		150.0	
10529-AAA	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.76	67.13	16.52	0.00	150.0	± 9.6 %
		Y	4.75	66.57	16.12		150.0	
		Z	4.58	66.81	16.23		150.0	
10531-AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.77	67.27	16.55	0.00	150.0	± 9.6 %
		Y	4.76	66.71	16.15		150.0	
		Z	4.56	66.89	16.24		150.0	
10532-AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.62	67.15	16.50	0.00	150.0	± 9.6 %
		Y	4.61	66.57	16.09		150.0	
		Z	4.43	66.75	16.17		150.0	
10533-AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.77	67.17	16.50	0.00	150.0	± 9.6 %
		Y	4.76	66.59	16.10		150.0	
		Z	4.59	66.88	16.23		150.0	
10534-AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	5.27	67.15	16.50	0.00	150.0	± 9.6 %
		Y	5.27	66.72	16.17		150.0	
		Z	5.12	66.84	16.26		150.0	
10535-AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.34	67.31	16.57	0.00	150.0	± 9.6 %
		Y	5.34	66.86	16.23		150.0	
		Z	5.19	67.03	16.35		150.0	
10536-AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	5.22	67.31	16.55	0.00	150.0	± 9.6 %
		Y	5.21	66.84	16.21		150.0	
		Z	5.06	66.99	16.32		150.0	
10537-AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	5.27	67.26	16.52	0.00	150.0	± 9.6 %
		Y	5.28	66.82	16.20		150.0	
		Z	5.12	66.94	16.29		150.0	
10538-AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.37	67.28	16.57	0.00	150.0	± 9.6 %
		Y	5.39	66.89	16.27		150.0	
		Z	5.20	66.94	16.33		150.0	
10540-AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	5.29	67.28	16.59	0.00	150.0	± 9.6 %
		Y	5.29	66.84	16.26		150.0	
		Z	5.13	66.94	16.35		150.0	

10541-AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	5.26	67.15	16.52	0.00	150.0	± 9.6 %
		Y	5.27	66.73	16.20		150.0	
		Z	5.11	66.82	16.27		150.0	
10542-AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.42	67.19	16.55	0.00	150.0	± 9.6 %
		Y	5.42	66.79	16.25		150.0	
		Z	5.26	66.90	16.33		150.0	
10543-AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.49	67.21	16.57	0.00	150.0	± 9.6 %
		Y	5.51	66.80	16.27		150.0	
		Z	5.32	66.91	16.36		150.0	
10544-AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.57	67.22	16.46	0.00	150.0	± 9.6 %
		Y	5.56	66.82	16.16		150.0	
		Z	5.45	66.92	16.24		150.0	
10545-AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.77	67.65	16.61	0.00	150.0	± 9.6 %
		Y	5.78	67.25	16.32		150.0	
		Z	5.64	67.38	16.42		150.0	
10546-AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.65	67.48	16.55	0.00	150.0	± 9.6 %
		Y	5.65	67.10	16.26		150.0	
		Z	5.50	67.09	16.30		150.0	
10547-AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.73	67.53	16.56	0.00	150.0	± 9.6 %
		Y	5.74	67.18	16.29		150.0	
		Z	5.57	67.16	16.32		150.0	
10548-AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	6.02	68.59	17.06	0.00	150.0	± 9.6 %
		Y	6.08	68.34	16.83		150.0	
		Z	5.80	68.04	16.74		150.0	
10550-AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.67	67.46	16.54	0.00	150.0	± 9.6 %
		Y	5.67	67.06	16.25		150.0	
		Z	5.54	67.19	16.36		150.0	
10551-AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.68	67.52	16.53	0.00	150.0	± 9.6 %
		Y	5.69	67.13	16.25		150.0	
		Z	5.53	67.15	16.30		150.0	
10552-AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.59	67.30	16.44	0.00	150.0	± 9.6 %
		Y	5.59	66.90	16.14		150.0	
		Z	5.46	67.00	16.23		150.0	
10553-AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.68	67.34	16.48	0.00	150.0	± 9.6 %
		Y	5.68	66.95	16.20		150.0	
		Z	5.53	67.00	16.26		150.0	
10554-AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.97	67.57	16.52	0.00	150.0	± 9.6 %
		Y	5.97	67.21	16.26		150.0	
		Z	5.86	67.27	16.32		150.0	
10555-AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	6.11	67.88	16.66	0.00	150.0	± 9.6 %
		Y	6.11	67.54	16.39		150.0	
		Z	5.98	67.57	16.45		150.0	
10556-AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	6.13	67.93	16.67	0.00	150.0	± 9.6 %
		Y	6.13	67.56	16.40		150.0	
		Z	6.01	67.63	16.48		150.0	
10557-AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	6.10	67.85	16.65	0.00	150.0	± 9.6 %
		Y	6.11	67.51	16.40		150.0	
		Z	5.97	67.50	16.43		150.0	

10558-AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	6.16	68.03	16.76	0.00	150.0	± 9.6 %
		Y	6.17	67.70	16.50		150.0	
		Z	6.01	67.66	16.53		150.0	
10560-AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	6.15	67.86	16.71	0.00	150.0	± 9.6 %
		Y	6.16	67.52	16.45		150.0	
		Z	6.00	67.50	16.49		150.0	
10561-AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	6.06	67.83	16.73	0.00	150.0	± 9.6 %
		Y	6.07	67.48	16.47		150.0	
		Z	5.94	67.50	16.52		150.0	
10562-AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	6.21	68.28	16.96	0.00	150.0	± 9.6 %
		Y	6.23	67.97	16.72		150.0	
		Z	6.03	67.79	16.67		150.0	
10563-AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	6.55	68.85	17.19	0.00	150.0	± 9.6 %
		Y	6.59	68.58	16.96		150.0	
		Z	6.12	67.71	16.59		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.99	67.50	16.82	0.46	150.0	± 9.6 %
		Y	5.01	67.06	16.50		150.0	
		Z	4.85	67.32	16.61		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	5.24	67.95	17.13	0.46	150.0	± 9.6 %
		Y	5.26	67.54	16.83		150.0	
		Z	5.06	67.72	16.90		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	5.07	67.84	16.98	0.46	150.0	± 9.6 %
		Y	5.10	67.41	16.66		150.0	
		Z	4.90	67.58	16.73		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	5.11	68.24	17.33	0.46	150.0	± 9.6 %
		Y	5.13	67.80	17.01		150.0	
		Z	4.93	67.94	17.07		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.99	67.61	16.75	0.46	150.0	± 9.6 %
		Y	5.01	67.15	16.42		150.0	
		Z	4.83	67.42	16.55		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	5.06	68.33	17.39	0.46	150.0	± 9.6 %
		Y	5.07	67.85	17.05		150.0	
		Z	4.91	68.11	17.17		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	5.09	68.14	17.31	0.46	150.0	± 9.6 %
		Y	5.11	67.68	16.98		150.0	
		Z	4.92	67.93	17.09		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.50	68.95	18.38	0.46	130.0	± 9.6 %
		Y	1.40	66.38	16.51		130.0	
		Z	1.40	67.23	17.09		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.55	69.98	18.93	0.46	130.0	± 9.6 %
		Y	1.43	67.06	16.91		130.0	
		Z	1.44	67.99	17.53		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	100.00	153.35	41.94	0.46	130.0	± 9.6 %
		Y	5.15	96.81	26.53		130.0	
		Z	50.11	136.49	37.17		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	2.59	83.81	24.92	0.46	130.0	± 9.6 %
		Y	1.75	74.27	20.26		130.0	
		Z	1.86	76.56	21.49		130.0	

10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.81	67.37	16.92	0.46	130.0	± 9.6 %
		Y	4.84	66.96	16.62		130.0	
		Z	4.68	67.23	16.73		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.84	67.54	16.99	0.46	130.0	± 9.6 %
		Y	4.86	67.12	16.68		130.0	
		Z	4.71	67.40	16.79		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	5.05	67.83	17.14	0.46	130.0	± 9.6 %
		Y	5.09	67.44	16.86		130.0	
		Z	4.89	67.64	16.94		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.96	68.04	17.27	0.46	130.0	± 9.6 %
		Y	4.99	67.62	16.97		130.0	
		Z	4.79	67.80	17.04		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.73	67.38	16.62	0.46	130.0	± 9.6 %
		Y	4.76	66.96	16.31		130.0	
		Z	4.57	67.14	16.40		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.77	67.37	16.62	0.46	130.0	± 9.6 %
		Y	4.80	66.94	16.31		130.0	
		Z	4.61	67.21	16.43		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.86	68.14	17.25	0.46	130.0	± 9.6 %
		Y	4.89	67.70	16.92		130.0	
		Z	4.70	67.90	17.02		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.67	67.12	16.41	0.46	130.0	± 9.6 %
		Y	4.71	66.71	16.10		130.0	
		Z	4.51	66.92	16.20		130.0	
10583-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.81	67.37	16.92	0.46	130.0	± 9.6 %
		Y	4.84	66.96	16.62		130.0	
		Z	4.68	67.23	16.73		130.0	
10584-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.84	67.54	16.99	0.46	130.0	± 9.6 %
		Y	4.86	67.12	16.68		130.0	
		Z	4.71	67.40	16.79		130.0	
10585-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	5.05	67.83	17.14	0.46	130.0	± 9.6 %
		Y	5.09	67.44	16.86		130.0	
		Z	4.89	67.64	16.94		130.0	
10586-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.96	68.04	17.27	0.46	130.0	± 9.6 %
		Y	4.99	67.62	16.97		130.0	
		Z	4.79	67.80	17.04		130.0	
10587-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.73	67.38	16.62	0.46	130.0	± 9.6 %
		Y	4.76	66.96	16.31		130.0	
		Z	4.57	67.14	16.40		130.0	
10588-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.77	67.37	16.62	0.46	130.0	± 9.6 %
		Y	4.80	66.94	16.31		130.0	
		Z	4.61	67.21	16.43		130.0	
10589-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.86	68.14	17.25	0.46	130.0	± 9.6 %
		Y	4.89	67.70	16.92		130.0	
		Z	4.70	67.90	17.02		130.0	
10590-AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.67	67.12	16.41	0.46	130.0	± 9.6 %
		Y	4.71	66.71	16.10		130.0	
		Z	4.51	66.92	16.20		130.0	

10591-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.95	67.39	16.99	0.46	130.0	± 9.6 %
		Y	4.98	67.01	16.71		130.0	
		Z	4.83	67.26	16.81		130.0	
10592-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	5.12	67.74	17.12	0.46	130.0	± 9.6 %
		Y	5.15	67.35	16.84		130.0	
		Z	4.97	67.58	16.94		130.0	
10593-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	5.04	67.68	17.02	0.46	130.0	± 9.6 %
		Y	5.08	67.30	16.74		130.0	
		Z	4.89	67.49	16.82		130.0	
10594-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	5.10	67.84	17.17	0.46	130.0	± 9.6 %
		Y	5.14	67.45	16.88		130.0	
		Z	4.94	67.65	16.97		130.0	
10595-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	5.07	67.81	17.07	0.46	130.0	± 9.6 %
		Y	5.11	67.42	16.78		130.0	
		Z	4.91	67.63	16.88		130.0	
10596-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	5.01	67.82	17.09	0.46	130.0	± 9.6 %
		Y	5.05	67.42	16.79		130.0	
		Z	4.85	67.64	16.90		130.0	
10597-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.96	67.75	16.98	0.46	130.0	± 9.6 %
		Y	5.00	67.35	16.69		130.0	
		Z	4.80	67.53	16.77		130.0	
10598-AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.95	68.01	17.26	0.46	130.0	± 9.6 %
		Y	4.98	67.61	16.96		130.0	
		Z	4.78	67.73	17.01		130.0	
10599-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.60	67.86	17.12	0.46	130.0	± 9.6 %
		Y	5.66	67.61	16.91		130.0	
		Z	5.48	67.70	16.99		130.0	
10600-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.78	68.39	17.36	0.46	130.0	± 9.6 %
		Y	5.85	68.19	17.17		130.0	
		Z	5.62	68.16	17.20		130.0	
10601-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.65	68.09	17.22	0.46	130.0	± 9.6 %
		Y	5.71	67.83	17.01		130.0	
		Z	5.51	67.89	17.08		130.0	
10602-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.73	68.07	17.13	0.46	130.0	± 9.6 %
		Y	5.79	67.82	16.93		130.0	
		Z	5.63	68.04	17.07		130.0	
10603-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.82	68.41	17.43	0.46	130.0	± 9.6 %
		Y	5.87	68.11	17.19		130.0	
		Z	5.69	68.27	17.32		130.0	
10604-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.61	67.82	17.13	0.46	130.0	± 9.6 %
		Y	5.66	67.56	16.91		130.0	
		Z	5.56	67.91	17.12		130.0	
10605-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.73	68.17	17.30	0.46	130.0	± 9.6 %
		Y	5.77	67.87	17.07		130.0	
		Z	5.62	68.08	17.21		130.0	
10606-AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.50	67.62	16.90	0.46	130.0	± 9.6 %
		Y	5.53	67.31	16.65		130.0	
		Z	5.35	67.34	16.70		130.0	

10607-AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.80	66.75	16.64	0.46	130.0	± 9.6 %
		Y	4.81	66.30	16.32		130.0	
		Z	4.67	66.60	16.45		130.0	
10608-AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	5.00	67.18	16.81	0.46	130.0	± 9.6 %
		Y	5.02	66.72	16.48		130.0	
		Z	4.84	66.98	16.61		130.0	
10609-AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.89	67.06	16.67	0.46	130.0	± 9.6 %
		Y	4.91	66.60	16.34		130.0	
		Z	4.73	66.84	16.45		130.0	
10610-AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.94	67.21	16.82	0.46	130.0	± 9.6 %
		Y	4.96	66.76	16.50		130.0	
		Z	4.78	66.99	16.61		130.0	
10611-AAA	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.86	67.03	16.68	0.46	130.0	± 9.6 %
		Y	4.89	66.59	16.36		130.0	
		Z	4.70	66.81	16.46		130.0	
10612-AAA	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.88	67.21	16.74	0.46	130.0	± 9.6 %
		Y	4.90	66.74	16.40		130.0	
		Z	4.71	66.99	16.53		130.0	
10613-AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.89	67.11	16.63	0.46	130.0	± 9.6 %
		Y	4.91	66.65	16.30		130.0	
		Z	4.71	66.83	16.39		130.0	
10614-AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.83	67.31	16.87	0.46	130.0	± 9.6 %
		Y	4.85	66.84	16.53		130.0	
		Z	4.66	67.02	16.61		130.0	
10615-AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.86	66.85	16.46	0.46	130.0	± 9.6 %
		Y	4.89	66.40	16.13		130.0	
		Z	4.70	66.67	16.26		130.0	
10616-AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.44	67.18	16.77	0.46	130.0	± 9.6 %
		Y	5.47	66.84	16.51		130.0	
		Z	5.30	66.94	16.59		130.0	
10617-AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.50	67.33	16.81	0.46	130.0	± 9.6 %
		Y	5.52	66.94	16.53		130.0	
		Z	5.38	67.17	16.68		130.0	
10618-AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.40	67.39	16.87	0.46	130.0	± 9.6 %
		Y	5.42	67.02	16.59		130.0	
		Z	5.27	67.18	16.70		130.0	
10619-AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.42	67.21	16.71	0.46	130.0	± 9.6 %
		Y	5.44	66.85	16.44		130.0	
		Z	5.28	66.96	16.53		130.0	
10620-AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.51	67.25	16.78	0.46	130.0	± 9.6 %
		Y	5.56	66.94	16.53		130.0	
		Z	5.36	66.98	16.59		130.0	
10621-AAA	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.50	67.33	16.93	0.46	130.0	± 9.6 %
		Y	5.53	67.00	16.68		130.0	
		Z	5.36	67.10	16.76		130.0	
10622-AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.51	67.50	17.01	0.46	130.0	± 9.6 %
		Y	5.53	67.13	16.73		130.0	
		Z	5.38	67.30	16.85		130.0	

10623-AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.39	67.03	16.66	0.46	130.0	± 9.6 %
		Y	5.41	66.69	16.40		130.0	
		Z	5.25	66.80	16.48		130.0	
10624-AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.58	67.21	16.80	0.46	130.0	± 9.6 %
		Y	5.61	66.88	16.56		130.0	
		Z	5.44	66.99	16.64		130.0	
10625-AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.99	68.31	17.39	0.46	130.0	± 9.6 %
		Y	6.04	68.02	17.17		130.0	
		Z	5.71	67.69	17.04		130.0	
10626-AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.71	67.19	16.69	0.46	130.0	± 9.6 %
		Y	5.72	66.86	16.44		130.0	
		Z	5.61	66.97	16.54		130.0	
10627-AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.96	67.77	16.93	0.46	130.0	± 9.6 %
		Y	5.99	67.46	16.69		130.0	
		Z	5.86	67.59	16.81		130.0	
10628-AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.76	67.34	16.66	0.46	130.0	± 9.6 %
		Y	5.79	67.03	16.42		130.0	
		Z	5.63	67.03	16.47		130.0	
10629-AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.85	67.42	16.69	0.46	130.0	± 9.6 %
		Y	5.87	67.09	16.44		130.0	
		Z	5.71	67.12	16.51		130.0	
10630-AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.37	69.15	17.55	0.46	130.0	± 9.6 %
		Y	6.48	69.04	17.41		130.0	
		Z	6.10	68.51	17.21		130.0	
10631-AAA	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.23	68.84	17.58	0.46	130.0	± 9.6 %
		Y	6.30	68.64	17.40		130.0	
		Z	6.00	68.26	17.26		130.0	
10632-AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.93	67.81	17.09	0.46	130.0	± 9.6 %
		Y	5.96	67.50	16.85		130.0	
		Z	5.82	67.64	16.97		130.0	
10633-AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.83	67.50	16.76	0.46	130.0	± 9.6 %
		Y	5.88	67.25	16.56		130.0	
		Z	5.69	67.21	16.59		130.0	
10634-AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.81	67.52	16.84	0.46	130.0	± 9.6 %
		Y	5.85	67.23	16.61		130.0	
		Z	5.67	67.21	16.64		130.0	
10635-AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.70	66.87	16.25	0.46	130.0	± 9.6 %
		Y	5.74	66.58	16.02		130.0	
		Z	5.55	66.58	16.07		130.0	
10636-AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	6.12	67.55	16.76	0.46	130.0	± 9.6 %
		Y	6.14	67.26	16.54		130.0	
		Z	6.03	67.32	16.61		130.0	
10637-AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.28	67.94	16.93	0.46	130.0	± 9.6 %
		Y	6.31	67.65	16.72		130.0	
		Z	6.19	67.72	16.79		130.0	
10638-AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.28	67.91	16.90	0.46	130.0	± 9.6 %
		Y	6.31	67.62	16.68		130.0	
		Z	6.18	67.68	16.75		130.0	

10639-AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.27	67.88	16.93	0.46	130.0	± 9.6 %
		Y	6.30	67.62	16.73		130.0	
		Z	6.15	67.59	16.75		130.0	
10640-AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.29	67.93	16.90	0.46	130.0	± 9.6 %
		Y	6.33	67.70	16.71		130.0	
		Z	6.15	67.62	16.71		130.0	
10641-AAB	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.30	67.74	16.81	0.46	130.0	± 9.6 %
		Y	6.32	67.44	16.59		130.0	
		Z	6.22	67.59	16.72		130.0	
10642-AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.36	68.03	17.13	0.46	130.0	± 9.6 %
		Y	6.39	67.76	16.92		130.0	
		Z	6.23	67.75	16.95		130.0	
10643-AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.19	67.72	16.88	0.46	130.0	± 9.6 %
		Y	6.22	67.45	16.67		130.0	
		Z	6.09	67.50	16.74		130.0	
10644-AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.39	68.34	17.21	0.46	130.0	± 9.6 %
		Y	6.45	68.14	17.04		130.0	
		Z	6.20	67.86	16.93		130.0	
10645-AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.86	69.27	17.61	0.46	130.0	± 9.6 %
		Y	6.87	68.89	17.35		130.0	
		Z	6.34	67.93	16.93		130.0	
10646-AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	58.91	128.47	41.72	9.30	60.0	± 9.6 %
		Y	22.23	103.66	34.19		60.0	
		Z	97.77	144.05	46.65		60.0	
10647-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	62.96	130.94	42.54	9.30	60.0	± 9.6 %
		Y	22.84	105.02	34.74		60.0	
		Z	100.00	145.78	47.28		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	1.21	71.90	15.83	0.00	150.0	± 9.6 %
		Y	0.81	64.89	12.16		150.0	
		Z	0.74	65.22	11.47		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	4.72	70.40	18.28	2.23	80.0	± 9.6 %
		Y	4.59	69.04	17.59		80.0	
		Z	4.50	69.96	17.82		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	5.05	69.01	18.05	2.23	80.0	± 9.6 %
		Y	5.03	68.18	17.58		80.0	
		Z	4.88	68.67	17.76		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.97	68.58	18.01	2.23	80.0	± 9.6 %
		Y	4.96	67.84	17.57		80.0	
		Z	4.83	68.24	17.75		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	5.02	68.56	18.04	2.23	80.0	± 9.6 %
		Y	5.02	67.86	17.60		80.0	
		Z	4.89	68.17	17.77		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.

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: ES3-3319_Mar18

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3319

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

BN ✓
03/30/2018

Calibration date: March 13, 2018

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	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

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

Issued: March 15, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) **Accreditation No.: SCS 0108**
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,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., ϑ = 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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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*.
- *DCPx,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
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,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 ≤ 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 *NORMx,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 *NORMx* (no uncertainty required).

Probe ES3DV3

SN:3319

Manufactured: January 10, 2012
Calibrated: March 13, 2018

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.08	1.05	1.12	± 10.1 %
DCP (mV)[B]	104.0	103.0	104.0	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	197.9	±3.8 %
		Y	0.0	0.0	1.0		198.2	
		Z	0.0	0.0	1.0		200.6	

Note: For details on UID parameters see Appendix.

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	60.52	430.8	35.08	29.64	3.011	5.10	0.615	0.538	1.010
Y	55.79	400.8	35.48	29.01	2.492	5.10	0.600	0.518	1.009
Z	63.98	455.3	34.93	29.72	3.442	5.10	0.679	0.571	1.011

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	6.70	6.70	6.70	0.80	1.21	± 12.0 %
835	41.5	0.90	6.44	6.44	6.44	0.80	1.17	± 12.0 %
1750	40.1	1.37	5.49	5.49	5.49	0.65	1.43	± 12.0 %
1900	40.0	1.40	5.29	5.29	5.29	0.76	1.30	± 12.0 %
2300	39.5	1.67	5.06	5.06	5.06	0.72	1.29	± 12.0 %
2450	39.2	1.80	4.71	4.71	4.71	0.77	1.30	± 12.0 %
2600	39.0	1.96	4.55	4.55	4.55	0.80	1.31	± 12.0 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

Calibration Parameter Determined in Body Tissue Simulating Media

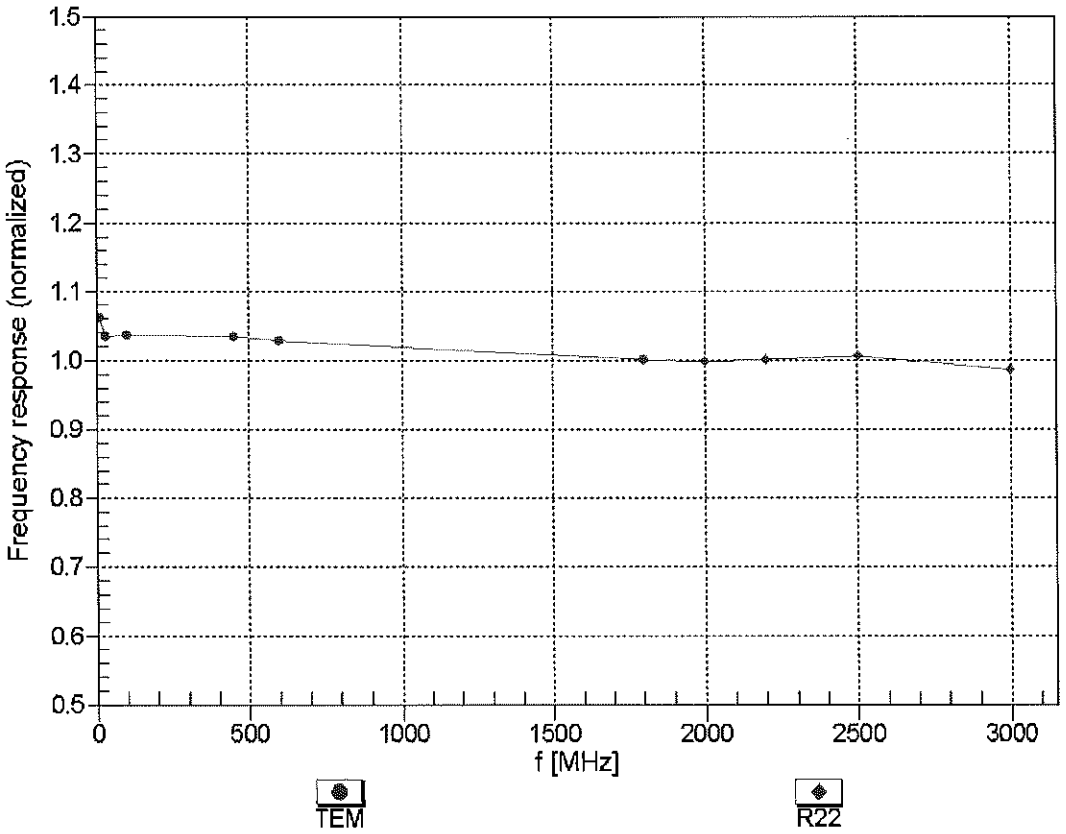
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	6.32	6.32	6.32	0.65	1.26	± 12.0 %
835	55.2	0.97	6.20	6.20	6.20	0.80	1.14	± 12.0 %
1750	53.4	1.49	5.05	5.05	5.05	0.76	1.27	± 12.0 %
1900	53.3	1.52	4.84	4.84	4.84	0.55	1.56	± 12.0 %
2300	52.9	1.81	4.63	4.63	4.63	0.80	1.30	± 12.0 %
2450	52.7	1.95	4.51	4.51	4.51	0.80	1.25	± 12.0 %
2600	52.5	2.16	4.33	4.33	4.33	0.80	1.20	± 12.0 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

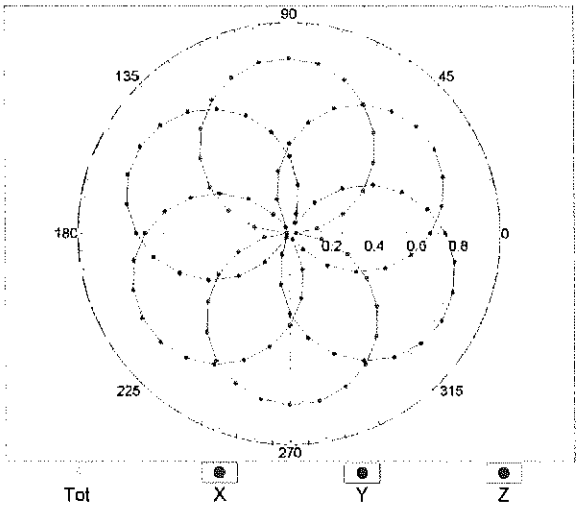
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



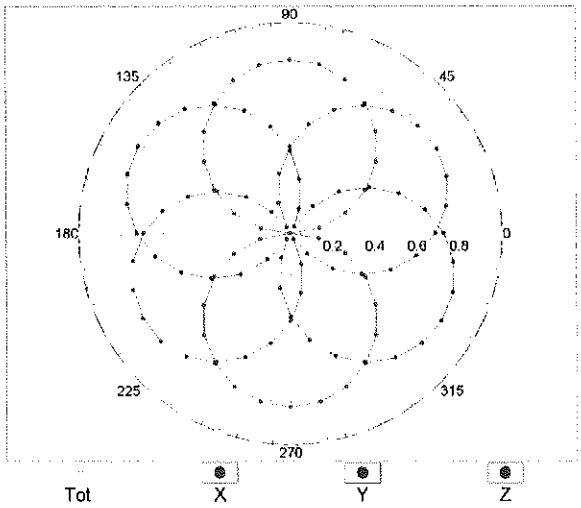
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

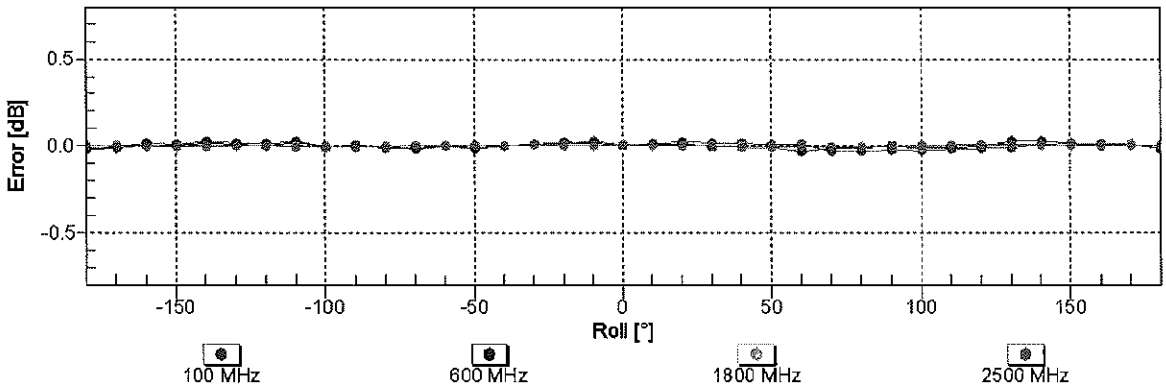
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



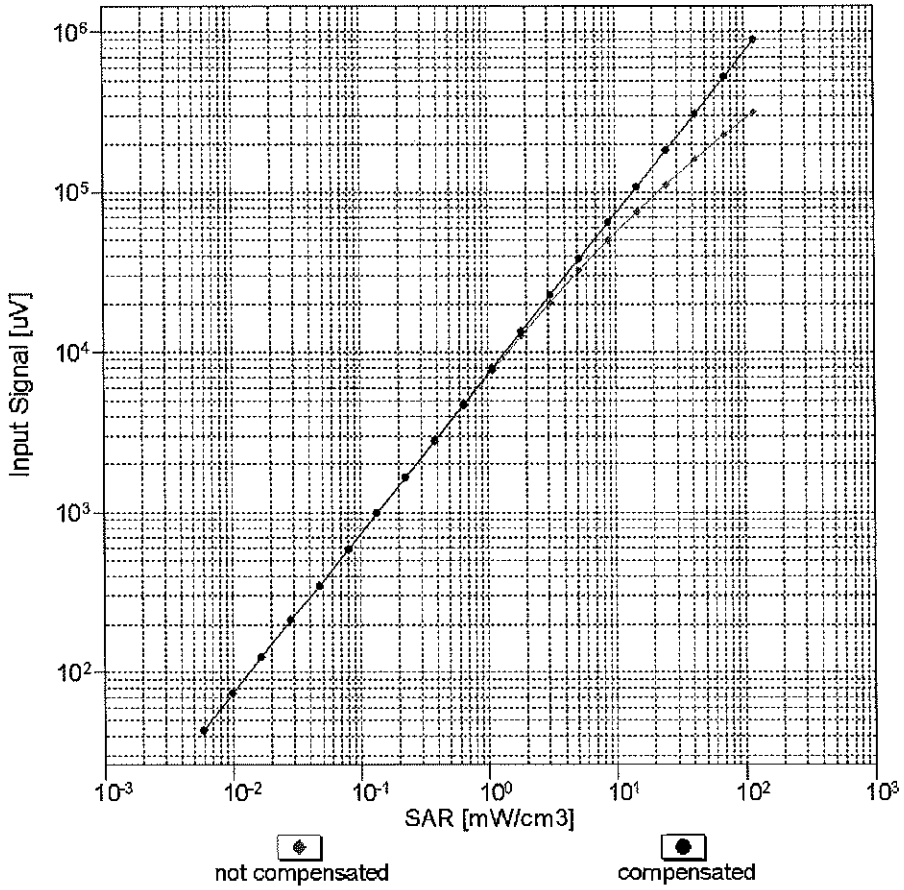
f=1800 MHz,R22

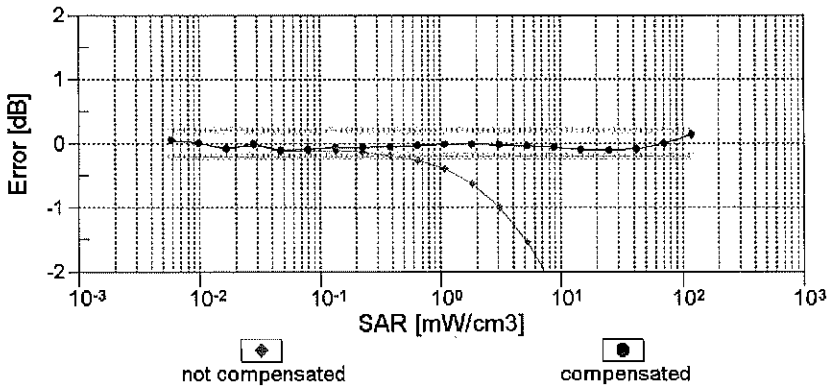




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

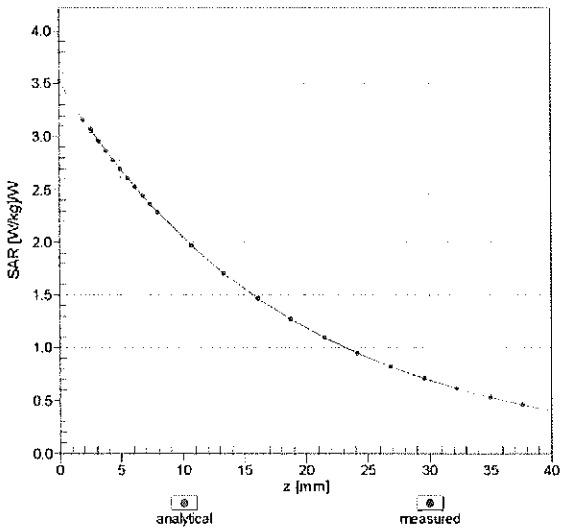




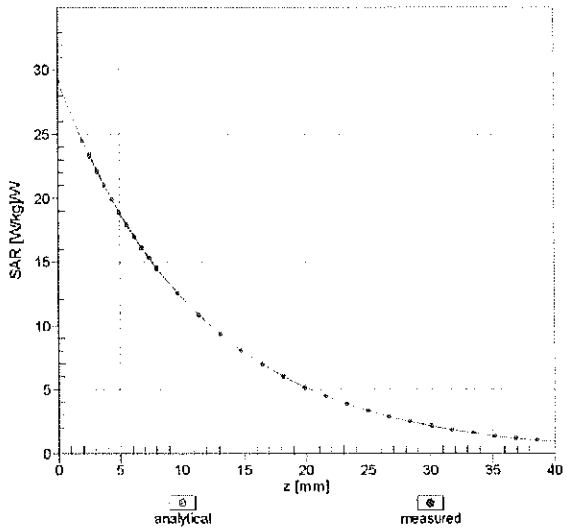
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

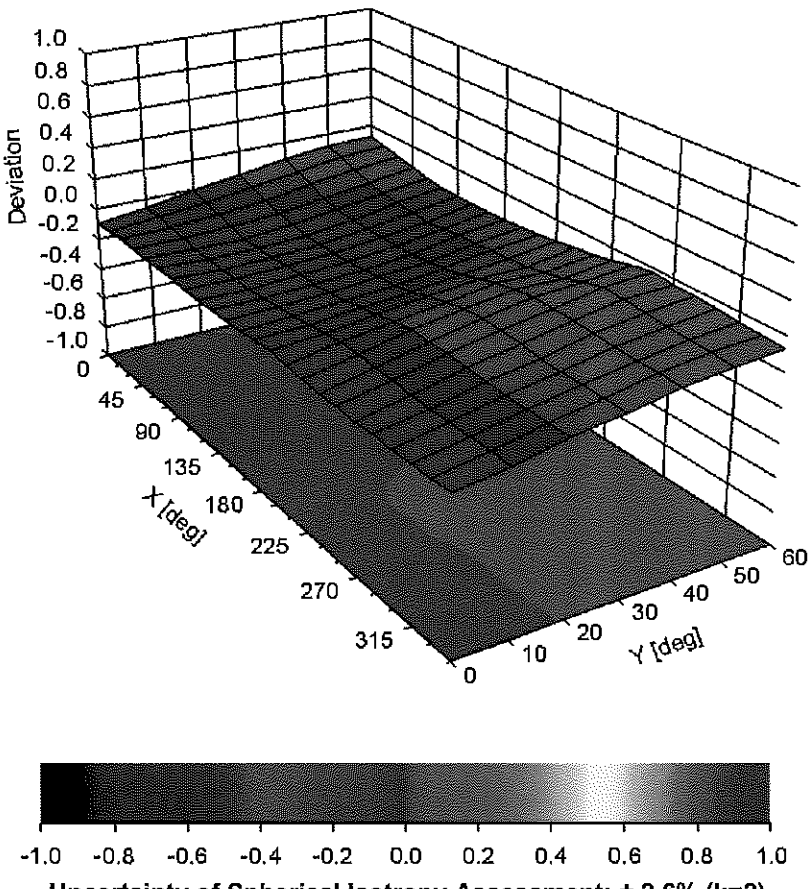


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	60.4
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max Unc^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	197.9	± 3.8 %
		Y	0.00	0.00	1.00		198.2	
		Z	0.00	0.00	1.00		200.6	
10010-CAA	SAR Validation (Square, 100ms, 10ms)	X	9.56	81.28	19.98	10.00	25.0	± 9.6 %
		Y	8.09	78.70	18.35		25.0	
		Z	8.70	79.52	19.57		25.0	
10011-CAB	UMTS-FDD (WCDMA)	X	1.34	72.37	18.08	0.00	150.0	± 9.6 %
		Y	0.99	67.12	14.82		150.0	
		Z	1.12	68.87	16.00		150.0	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.37	66.58	17.00	0.41	150.0	± 9.6 %
		Y	1.25	64.92	15.59		150.0	
		Z	1.32	65.58	16.11		150.0	
10013-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	5.18	67.48	17.64	1.46	150.0	± 9.6 %
		Y	5.08	67.20	17.36		150.0	
		Z	5.20	67.32	17.47		150.0	
10021-DAC	GSM-FDD (TDMA, GMSK)	X	20.40	95.52	26.57	9.39	50.0	± 9.6 %
		Y	29.46	101.11	27.60		50.0	
		Z	14.66	89.52	24.83		50.0	
10023-DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	18.37	93.61	26.02	9.57	50.0	± 9.6 %
		Y	24.41	97.95	26.72		50.0	
		Z	13.84	88.39	24.49		50.0	
10024-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	100.00	119.56	31.31	6.56	60.0	± 9.6 %
		Y	100.00	117.39	29.93		60.0	
		Z	47.21	108.31	28.71		60.0	
10025-DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	21.09	108.48	41.18	12.57	50.0	± 9.6 %
		Y	17.11	102.80	38.82		50.0	
		Z	18.44	103.12	38.97		50.0	
10026-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	21.59	105.09	36.25	9.56	60.0	± 9.6 %
		Y	18.95	102.20	35.03		60.0	
		Z	18.49	100.22	34.38		60.0	
10027-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	118.49	29.83	4.80	80.0	± 9.6 %
		Y	100.00	115.83	28.28		80.0	
		Z	100.00	118.30	29.89		80.0	
10028-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	118.84	29.14	3.55	100.0	± 9.6 %
		Y	100.00	115.36	27.25		100.0	
		Z	100.00	118.10	28.92		100.0	
10029-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	15.08	97.16	32.49	7.80	80.0	± 9.6 %
		Y	12.90	93.80	31.06		80.0	
		Z	13.60	93.82	31.09		80.0	
10030-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	100.00	118.11	30.01	5.30	70.0	± 9.6 %
		Y	100.00	115.58	28.50		70.0	
		Z	100.00	118.16	30.20		70.0	
10031-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	100.00	121.01	28.44	1.88	100.0	± 9.6 %
		Y	100.00	114.03	25.11		100.0	
		Z	100.00	118.73	27.54		100.0	

10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	100.00	127.26	29.88	1.17	100.0	± 9.6 %
		Y	100.00	114.89	24.38		100.0	
		Z	100.00	122.11	27.79		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	21.21	99.84	27.91	5.30	70.0	± 9.6 %
		Y	19.09	97.43	26.61		70.0	
		Z	13.98	92.26	25.56		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	14.93	98.23	25.94	1.88	100.0	± 9.6 %
		Y	7.46	86.71	21.62		100.0	
		Z	7.45	87.10	22.42		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	7.98	90.77	23.49	1.17	100.0	± 9.6 %
		Y	3.97	79.58	18.90		100.0	
		Z	4.48	81.52	20.27		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	26.12	103.52	29.04	5.30	70.0	± 9.6 %
		Y	24.16	101.42	27.84		70.0	
		Z	15.99	94.67	26.38		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	14.25	97.55	25.70	1.88	100.0	± 9.6 %
		Y	7.04	85.92	21.32		100.0	
		Z	7.24	86.72	22.25		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	8.53	92.07	23.99	1.17	100.0	± 9.6 %
		Y	4.13	80.37	19.27		100.0	
		Z	4.65	82.31	20.62		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	2.96	79.09	19.43	0.00	150.0	± 9.6 %
		Y	1.75	71.10	15.36		150.0	
		Z	2.10	73.23	16.92		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	53.77	109.05	28.70	7.78	50.0	± 9.6 %
		Y	79.10	112.95	28.86		50.0	
		Z	23.46	96.42	25.41		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.00	123.18	1.26	0.00	150.0	± 9.6 %
		Y	0.02	127.84	0.07		150.0	
		Z	0.00	110.77	4.52		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	11.41	83.11	24.20	13.80	25.0	± 9.6 %
		Y	12.66	85.48	24.49		25.0	
		Z	10.45	80.79	23.56		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	13.41	87.55	24.40	10.79	40.0	± 9.6 %
		Y	15.25	89.77	24.55		40.0	
		Z	11.61	84.53	23.55		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	13.37	87.98	25.03	9.03	50.0	± 9.6 %
		Y	13.72	88.51	24.74		50.0	
		Z	11.72	85.02	24.05		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	11.14	91.28	29.72	6.55	100.0	± 9.6 %
		Y	9.52	87.98	28.26		100.0	
		Z	10.41	88.91	28.62		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.60	69.38	18.31	0.61	110.0	± 9.6 %
		Y	1.43	67.15	16.67		110.0	
		Z	1.53	67.97	17.25		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	100.00	133.15	34.60	1.30	110.0	± 9.6 %
		Y	100.00	128.63	32.36		110.0	
		Z	100.00	130.16	33.31		110.0	

10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	24.68	111.64	31.63	2.04	110.0	± 9.6 %
		Y	11.26	97.49	27.04		110.0	
		Z	10.95	96.57	26.98		110.0	
10062-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.90	67.24	16.94	0.49	100.0	± 9.6 %
		Y	4.79	66.94	16.63		100.0	
		Z	4.90	67.05	16.74		100.0	
10063-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.95	67.42	17.09	0.72	100.0	± 9.6 %
		Y	4.84	67.10	16.77		100.0	
		Z	4.95	67.23	16.89		100.0	
10064-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	5.28	67.75	17.35	0.86	100.0	± 9.6 %
		Y	5.16	67.43	17.04		100.0	
		Z	5.30	67.59	17.17		100.0	
10065-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	5.19	67.81	17.53	1.21	100.0	± 9.6 %
		Y	5.07	67.47	17.22		100.0	
		Z	5.21	67.65	17.35		100.0	
10066-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	5.25	67.95	17.76	1.46	100.0	± 9.6 %
		Y	5.12	67.61	17.44		100.0	
		Z	5.27	67.80	17.59		100.0	
10067-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	5.57	68.10	18.21	2.04	100.0	± 9.6 %
		Y	5.44	67.80	17.92		100.0	
		Z	5.60	67.97	18.05		100.0	
10068-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	5.73	68.50	18.60	2.55	100.0	± 9.6 %
		Y	5.58	68.13	18.28		100.0	
		Z	5.77	68.41	18.46		100.0	
10069-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.81	68.43	18.78	2.67	100.0	± 9.6 %
		Y	5.66	68.09	18.46		100.0	
		Z	5.84	68.33	18.64		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	5.34	67.73	18.04	1.99	100.0	± 9.6 %
		Y	5.22	67.44	17.75		100.0	
		Z	5.35	67.60	17.87		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	5.42	68.35	18.39	2.30	100.0	± 9.6 %
		Y	5.29	68.00	18.07		100.0	
		Z	5.44	68.21	18.22		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	5.57	68.74	18.83	2.83	100.0	± 9.6 %
		Y	5.42	68.36	18.50		100.0	
		Z	5.60	68.62	18.66		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	5.61	68.84	19.10	3.30	100.0	± 9.6 %
		Y	5.46	68.44	18.75		100.0	
		Z	5.65	68.74	18.95		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	5.79	69.40	19.63	3.82	90.0	± 9.6 %
		Y	5.61	68.91	19.24		90.0	
		Z	5.85	69.35	19.51		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	5.80	69.20	19.75	4.15	90.0	± 9.6 %
		Y	5.64	68.73	19.37		90.0	
		Z	5.86	69.15	19.63		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	5.84	69.30	19.86	4.30	90.0	± 9.6 %
		Y	5.68	68.82	19.47		90.0	
		Z	5.90	69.25	19.74		90.0	

10081-CAB	CDMA2000 (1xRTT, RC3)	X	1.29	72.14	16.36	0.00	150.0	± 9.6 %
		Y	0.81	65.51	12.24		150.0	
		Z	0.99	67.68	14.05		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	2.36	64.73	9.48	4.77	80.0	± 9.6 %
		Y	1.97	63.15	8.18		80.0	
		Z	2.45	64.78	9.67		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	100.00	119.65	31.37	6.56	60.0	± 9.6 %
		Y	100.00	117.49	29.99		60.0	
		Z	45.52	107.81	28.61		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	2.00	69.44	16.95	0.00	150.0	± 9.6 %
		Y	1.78	67.32	15.42		150.0	
		Z	1.87	67.93	15.97		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.97	69.46	16.95	0.00	150.0	± 9.6 %
		Y	1.74	67.28	15.38		150.0	
		Z	1.84	67.91	15.95		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	21.45	104.88	36.18	9.56	60.0	± 9.6 %
		Y	18.89	102.07	34.98		60.0	
		Z	18.39	100.05	34.32		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	3.55	72.46	17.74	0.00	150.0	± 9.6 %
		Y	3.14	70.29	16.48		150.0	
		Z	3.35	71.19	16.95		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.45	68.62	16.57	0.00	150.0	± 9.6 %
		Y	3.26	67.61	15.85		150.0	
		Z	3.39	68.08	16.14		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.54	68.46	16.61	0.00	150.0	± 9.6 %
		Y	3.37	67.56	15.95		150.0	
		Z	3.49	67.97	16.20		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	8.98	78.82	21.57	3.98	65.0	± 9.6 %
		Y	8.50	78.15	21.17		65.0	
		Z	8.60	77.58	20.95		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	8.85	77.44	21.89	3.98	65.0	± 9.6 %
		Y	8.45	76.83	21.49		65.0	
		Z	8.72	76.72	21.48		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	8.33	76.23	21.66	3.98	65.0	± 9.6 %
		Y	7.79	75.22	21.09		65.0	
		Z	7.71	74.28	20.69		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	3.11	71.64	17.59	0.00	150.0	± 9.6 %
		Y	2.75	69.54	16.32		150.0	
		Z	2.95	70.37	16.78		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	3.12	68.50	16.56	0.00	150.0	± 9.6 %
		Y	2.92	67.41	15.75		150.0	
		Z	3.06	67.87	16.07		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	2.56	70.84	17.38	0.00	150.0	± 9.6 %
		Y	2.24	68.61	15.94		150.0	
		Z	2.42	69.44	16.48		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.84	69.29	16.96	0.00	150.0	± 9.6 %
		Y	2.62	68.02	15.99		150.0	
		Z	2.75	68.36	16.33		150.0	

10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	3.23	68.35	16.55	0.00	150.0	± 9.6 %
		Y	3.05	67.38	15.81		150.0	
		Z	3.18	67.77	16.10		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.98	69.28	17.01	0.00	150.0	± 9.6 %
		Y	2.77	68.14	16.13		150.0	
		Z	2.90	68.40	16.43		150.0	
10114-CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	5.25	67.55	16.67	0.00	150.0	± 9.6 %
		Y	5.16	67.27	16.41		150.0	
		Z	5.23	67.36	16.47		150.0	
10115-CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.62	67.87	16.84	0.00	150.0	± 9.6 %
		Y	5.53	67.61	16.59		150.0	
		Z	5.61	67.68	16.64		150.0	
10116-CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.38	67.84	16.74	0.00	150.0	± 9.6 %
		Y	5.28	67.54	16.47		150.0	
		Z	5.37	67.64	16.53		150.0	
10117-CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	5.26	67.57	16.70	0.00	150.0	± 9.6 %
		Y	5.15	67.22	16.40		150.0	
		Z	5.24	67.39	16.51		150.0	
10118-CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.70	68.05	16.94	0.00	150.0	± 9.6 %
		Y	5.61	67.82	16.70		150.0	
		Z	5.67	67.81	16.71		150.0	
10119-CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	5.36	67.79	16.73	0.00	150.0	± 9.6 %
		Y	5.26	67.48	16.45		150.0	
		Z	5.34	67.59	16.52		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.59	68.46	16.53	0.00	150.0	± 9.6 %
		Y	3.41	67.56	15.87		150.0	
		Z	3.54	67.97	16.13		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.70	68.46	16.65	0.00	150.0	± 9.6 %
		Y	3.53	67.64	16.03		150.0	
		Z	3.65	67.99	16.26		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	2.36	71.08	17.31	0.00	150.0	± 9.6 %
		Y	2.01	68.49	15.62		150.0	
		Z	2.20	69.37	16.30		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.76	70.34	17.00	0.00	150.0	± 9.6 %
		Y	2.47	68.62	15.73		150.0	
		Z	2.62	69.02	16.23		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	2.54	68.16	15.50	0.00	150.0	± 9.6 %
		Y	2.28	66.60	14.27		150.0	
		Z	2.46	67.23	14.93		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	1.75	69.86	15.18	0.00	150.0	± 9.6 %
		Y	1.29	65.55	12.27		150.0	
		Z	1.55	67.61	14.05		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	4.07	76.05	17.30	0.00	150.0	± 9.6 %
		Y	2.52	69.20	13.62		150.0	
		Z	3.50	73.50	16.33		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	5.72	80.95	19.32	0.00	150.0	± 9.6 %
		Y	3.13	72.10	15.05		150.0	
		Z	4.43	76.91	17.88		150.0	

10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	3.13	68.56	16.60	0.00	150.0	± 9.6 %
		Y	2.93	67.47	15.80		150.0	
		Z	3.07	67.93	16.12		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	3.24	68.40	16.59	0.00	150.0	± 9.6 %
		Y	3.05	67.43	15.85		150.0	
		Z	3.18	67.82	16.13		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	9.59	81.21	22.61	3.98	65.0	± 9.6 %
		Y	9.21	80.79	22.27		65.0	
		Z	9.05	79.62	21.87		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	8.53	77.77	21.82	3.98	65.0	± 9.6 %
		Y	8.07	77.03	21.32		65.0	
		Z	8.36	76.93	21.37		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	8.87	78.41	22.41	3.98	65.0	± 9.6 %
		Y	8.48	77.88	22.02		65.0	
		Z	8.68	77.54	21.94		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.63	71.34	17.67	0.00	150.0	± 9.6 %
		Y	2.29	69.04	16.21		150.0	
		Z	2.48	69.88	16.75		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.84	69.30	16.97	0.00	150.0	± 9.6 %
		Y	2.62	68.03	16.00		150.0	
		Z	2.75	68.36	16.34		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	2.26	71.67	17.44	0.00	150.0	± 9.6 %
		Y	1.86	68.59	15.46		150.0	
		Z	2.07	69.64	16.29		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	2.42	69.16	15.83	0.00	150.0	± 9.6 %
		Y	2.11	67.12	14.31		150.0	
		Z	2.30	67.87	15.10		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.99	69.33	17.05	0.00	150.0	± 9.6 %
		Y	2.78	68.20	16.17		150.0	
		Z	2.90	68.44	16.46		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	2.55	69.60	16.11	0.00	150.0	± 9.6 %
		Y	2.22	67.56	14.60		150.0	
		Z	2.41	68.28	15.37		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	3.02	70.16	17.19	0.00	150.0	± 9.6 %
		Y	2.77	68.66	16.17		150.0	
		Z	2.91	69.14	16.50		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	3.13	68.32	16.54	0.00	150.0	± 9.6 %
		Y	2.95	67.34	15.78		150.0	
		Z	3.07	67.70	16.08		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	3.23	68.35	16.60	0.00	150.0	± 9.6 %
		Y	3.06	67.45	15.88		150.0	
		Z	3.18	67.74	16.14		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	4.02	71.10	20.08	3.01	150.0	± 9.6 %
		Y	3.79	70.19	19.37		150.0	
		Z	4.03	70.69	19.72		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	5.24	74.71	20.79	3.01	150.0	± 9.6 %
		Y	4.82	73.39	19.92		150.0	
		Z	5.25	74.14	20.39		150.0	

10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	5.76	76.76	21.96	3.01	150.0	± 9.6 %
		Y	5.36	75.66	21.24		150.0	
		Z	5.73	75.99	21.47		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	3.69	72.72	20.82	3.01	150.0	± 9.6 %
		Y	3.33	70.78	19.63		150.0	
		Z	3.78	72.61	20.53		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	5.76	80.54	23.62	3.01	150.0	± 9.6 %
		Y	4.94	77.74	22.22		150.0	
		Z	5.83	79.90	23.09		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	4.61	75.69	20.76	3.01	150.0	± 9.6 %
		Y	3.94	72.92	19.25		150.0	
		Z	4.70	75.28	20.35		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	36.99	114.19	35.08	6.02	65.0	± 9.6 %
		Y	22.97	105.21	32.24		65.0	
		Z	26.68	106.36	32.56		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	41.01	110.69	32.32	6.02	65.0	± 9.6 %
		Y	35.83	108.35	31.36		65.0	
		Z	28.00	102.66	29.85		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	30.73	104.07	29.95	6.02	65.0	± 9.6 %
		Y	27.27	102.14	29.08		65.0	
		Z	22.20	97.35	27.81		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	3.64	72.35	20.56	3.01	150.0	± 9.6 %
		Y	3.28	70.42	19.36		150.0	
		Z	3.72	72.25	20.28		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	5.77	80.56	23.63	3.01	150.0	± 9.6 %
		Y	4.95	77.76	22.23		150.0	
		Z	5.84	79.92	23.10		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	3.67	72.53	20.66	3.01	150.0	± 9.6 %
		Y	3.31	70.60	19.46		150.0	
		Z	3.76	72.42	20.38		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	5.68	80.23	23.47	3.01	150.0	± 9.6 %
		Y	4.88	77.46	22.08		150.0	
		Z	5.74	79.60	22.95		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	5.14	77.96	22.04	3.01	150.0	± 9.6 %
		Y	4.38	75.13	20.57		150.0	
		Z	5.21	77.41	21.56		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	4.59	75.59	20.70	3.01	150.0	± 9.6 %
		Y	3.92	72.83	19.19		150.0	
		Z	4.68	75.18	20.29		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	3.66	72.51	20.66	3.01	150.0	± 9.6 %
		Y	3.30	70.58	19.46		150.0	
		Z	3.75	72.41	20.37		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	5.67	80.21	23.46	3.01	150.0	± 9.6 %
		Y	4.87	77.43	22.07		150.0	
		Z	5.73	79.57	22.94		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	4.58	75.56	20.68	3.01	150.0	± 9.6 %
		Y	3.92	72.80	19.18		150.0	
		Z	4.67	75.15	20.27		150.0	

10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	3.68	72.56	20.68	3.01	150.0	± 9.6 %
		Y	3.32	70.63	19.48		150.0	
		Z	3.77	72.45	20.39		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	5.70	80.29	23.50	3.01	150.0	± 9.6 %
		Y	4.90	77.51	22.11		150.0	
		Z	5.76	79.65	22.97		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	4.61	75.64	20.72	3.01	150.0	± 9.6 %
		Y	3.94	72.88	19.21		150.0	
		Z	4.69	75.23	20.31		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	3.69	72.61	20.73	3.01	150.0	± 9.6 %
		Y	3.33	70.68	19.54		150.0	
		Z	3.77	72.50	20.44		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	5.93	81.11	23.91	3.01	150.0	± 9.6 %
		Y	5.09	78.33	22.53		150.0	
		Z	5.99	80.44	23.37		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	4.73	76.16	21.02	3.01	150.0	± 9.6 %
		Y	4.04	73.37	19.51		150.0	
		Z	4.82	75.73	20.60		150.0	
10193-CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.67	66.99	16.47	0.00	150.0	± 9.6 %
		Y	4.56	66.66	16.13		150.0	
		Z	4.66	66.78	16.26		150.0	
10194-CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.87	67.36	16.58	0.00	150.0	± 9.6 %
		Y	4.75	67.00	16.25		150.0	
		Z	4.87	67.15	16.37		150.0	
10195-CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.91	67.37	16.59	0.00	150.0	± 9.6 %
		Y	4.79	67.03	16.27		150.0	
		Z	4.91	67.16	16.38		150.0	
10196-CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.69	67.10	16.51	0.00	150.0	± 9.6 %
		Y	4.58	66.74	16.16		150.0	
		Z	4.69	66.88	16.30		150.0	
10197-CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.89	67.38	16.59	0.00	150.0	± 9.6 %
		Y	4.77	67.03	16.26		150.0	
		Z	4.88	67.17	16.38		150.0	
10198-CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.92	67.39	16.60	0.00	150.0	± 9.6 %
		Y	4.80	67.05	16.28		150.0	
		Z	4.91	67.18	16.39		150.0	
10219-CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.64	67.11	16.47	0.00	150.0	± 9.6 %
		Y	4.53	66.75	16.12		150.0	
		Z	4.64	66.90	16.26		150.0	
10220-CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.88	67.37	16.59	0.00	150.0	± 9.6 %
		Y	4.76	67.01	16.26		150.0	
		Z	4.88	67.17	16.38		150.0	
10221-CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.92	67.32	16.59	0.00	150.0	± 9.6 %
		Y	4.80	66.98	16.27		150.0	
		Z	4.92	67.11	16.38		150.0	
10222-CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	5.23	67.59	16.70	0.00	150.0	± 9.6 %
		Y	5.12	67.23	16.39		150.0	
		Z	5.22	67.42	16.51		150.0	

10223-CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.61	67.92	16.89	0.00	150.0	± 9.6 %
		Y	5.46	67.48	16.54		150.0	
		Z	5.61	67.78	16.72		150.0	
10224-CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	5.28	67.68	16.67	0.00	150.0	± 9.6 %
		Y	5.17	67.32	16.37		150.0	
		Z	5.27	67.52	16.48		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	2.96	66.82	16.01	0.00	150.0	± 9.6 %
		Y	2.82	66.09	15.31		150.0	
		Z	2.93	66.33	15.63		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	43.59	111.94	32.75	6.02	65.0	± 9.6 %
		Y	38.77	109.92	31.88		65.0	
		Z	29.30	103.58	30.20		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	32.72	105.33	30.40	6.02	65.0	± 9.6 %
		Y	30.31	104.10	29.73		65.0	
		Z	23.58	98.50	28.23		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	45.04	118.57	36.38	6.02	65.0	± 9.6 %
		Y	33.63	112.96	34.54		65.0	
		Z	30.07	109.15	33.47		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	40.99	110.67	32.33	6.02	65.0	± 9.6 %
		Y	35.91	108.38	31.38		65.0	
		Z	28.02	102.65	29.86		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	31.17	104.37	30.06	6.02	65.0	± 9.6 %
		Y	28.46	102.90	29.31		65.0	
		Z	22.72	97.78	27.95		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	42.43	117.25	35.96	6.02	65.0	± 9.6 %
		Y	31.37	111.47	34.05		65.0	
		Z	28.77	108.18	33.13		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	40.99	110.68	32.33	6.02	65.0	± 9.6 %
		Y	35.90	108.38	31.38		65.0	
		Z	28.01	102.65	29.86		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	31.21	104.41	30.07	6.02	65.0	± 9.6 %
		Y	28.46	102.91	29.32		65.0	
		Z	22.74	97.80	27.96		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	39.80	115.77	35.45	6.02	65.0	± 9.6 %
		Y	29.32	109.94	33.51		65.0	
		Z	27.42	107.07	32.71		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	41.16	110.77	32.35	6.02	65.0	± 9.6 %
		Y	36.04	108.46	31.40		65.0	
		Z	28.08	102.71	29.87		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	31.50	104.54	30.10	6.02	65.0	± 9.6 %
		Y	28.73	103.05	29.35		65.0	
		Z	22.90	97.90	27.98		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	42.99	117.54	36.03	6.02	65.0	± 9.6 %
		Y	31.67	111.68	34.11		65.0	
		Z	29.03	108.38	33.18		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	41.04	110.71	32.33	6.02	65.0	± 9.6 %
		Y	35.91	108.40	31.38		65.0	
		Z	28.02	102.67	29.86		65.0	

10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	31.24	104.44	30.08	6.02	65.0	± 9.6 %
		Y	28.46	102.92	29.32		65.0	
		Z	22.74	97.82	27.96		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	42.83	117.47	36.01	6.02	65.0	± 9.6 %
		Y	31.56	111.62	34.09		65.0	
		Z	28.94	108.32	33.17		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	13.21	88.13	28.12	6.98	65.0	± 9.6 %
		Y	12.19	86.75	27.34		65.0	
		Z	12.93	86.92	27.56		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	11.82	85.64	27.08	6.98	65.0	± 9.6 %
		Y	11.88	86.18	27.05		65.0	
		Z	11.71	84.70	26.62		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	9.69	83.18	27.04	6.98	65.0	± 9.6 %
		Y	8.48	80.58	25.71		65.0	
		Z	9.71	82.55	26.66		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	10.16	81.71	21.73	3.98	65.0	± 9.6 %
		Y	9.31	80.28	20.70		65.0	
		Z	9.66	80.44	21.31		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	9.99	81.19	21.49	3.98	65.0	± 9.6 %
		Y	9.12	79.71	20.44		65.0	
		Z	9.56	80.04	21.12		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	10.26	84.67	22.74	3.98	65.0	± 9.6 %
		Y	9.22	82.91	21.64		65.0	
		Z	9.02	82.03	21.79		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	8.13	78.66	21.05	3.98	65.0	± 9.6 %
		Y	7.56	77.60	20.25		65.0	
		Z	7.81	77.51	20.59		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	8.10	78.15	20.84	3.98	65.0	± 9.6 %
		Y	7.50	77.03	20.01		65.0	
		Z	7.84	77.14	20.44		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	11.10	86.20	23.88	3.98	65.0	± 9.6 %
		Y	10.38	85.15	23.14		65.0	
		Z	9.69	83.27	22.77		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	8.90	80.26	22.85	3.98	65.0	± 9.6 %
		Y	8.50	79.72	22.41		65.0	
		Z	8.55	78.98	22.26		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	8.43	78.18	21.77	3.98	65.0	± 9.6 %
		Y	7.97	77.44	21.21		65.0	
		Z	8.21	77.20	21.30		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	10.55	84.69	23.95	3.98	65.0	± 9.6 %
		Y	10.10	84.18	23.52		65.0	
		Z	9.56	82.30	22.95		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	8.29	77.16	21.61	3.98	65.0	± 9.6 %
		Y	7.87	76.45	21.11		65.0	
		Z	8.15	76.38	21.20		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	8.65	77.83	22.17	3.98	65.0	± 9.6 %
		Y	8.27	77.28	21.75		65.0	
		Z	8.49	77.01	21.74		65.0	

10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	9.28	80.86	22.71	3.98	65.0	± 9.6 %
		Y	8.89	80.40	22.35		65.0	
		Z	8.80	79.34	21.99		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	9.13	79.62	20.18	3.98	65.0	± 9.6 %
		Y	7.96	77.38	18.74		65.0	
		Z	8.84	78.74	19.97		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	8.90	78.86	19.81	3.98	65.0	± 9.6 %
		Y	7.73	76.58	18.34		65.0	
		Z	8.71	78.17	19.67		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	8.90	81.94	21.19	3.98	65.0	± 9.6 %
		Y	7.60	79.37	19.69		65.0	
		Z	8.10	80.01	20.54		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	8.43	79.20	21.67	3.98	65.0	± 9.6 %
		Y	7.92	78.34	21.01		65.0	
		Z	8.11	78.01	21.17		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	8.43	78.91	21.57	3.98	65.0	± 9.6 %
		Y	7.92	78.05	20.91		65.0	
		Z	8.14	77.80	21.11		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	10.44	84.93	23.72	3.98	65.0	± 9.6 %
		Y	9.81	84.03	23.07		65.0	
		Z	9.35	82.40	22.71		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	8.89	80.23	22.82	3.98	65.0	± 9.6 %
		Y	8.49	79.67	22.37		65.0	
		Z	8.55	78.95	22.23		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	8.43	78.18	21.77	3.98	65.0	± 9.6 %
		Y	7.96	77.43	21.21		65.0	
		Z	8.21	77.20	21.30		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	10.49	84.56	23.88	3.98	65.0	± 9.6 %
		Y	10.02	84.01	23.44		65.0	
		Z	9.51	82.19	22.89		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	8.52	77.77	21.82	3.98	65.0	± 9.6 %
		Y	8.07	77.03	21.32		65.0	
		Z	8.36	76.93	21.38		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	8.87	78.41	22.40	3.98	65.0	± 9.6 %
		Y	8.48	77.88	22.01		65.0	
		Z	8.68	77.54	21.94		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	9.58	81.18	22.60	3.98	65.0	± 9.6 %
		Y	9.19	80.75	22.26		65.0	
		Z	9.04	79.59	21.85		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	8.91	77.09	21.88	3.98	65.0	± 9.6 %
		Y	8.54	76.56	21.51		65.0	
		Z	8.80	76.43	21.50		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	8.82	76.67	21.78	3.98	65.0	± 9.6 %
		Y	8.46	76.15	21.41		65.0	
		Z	8.73	76.06	21.42		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	8.97	78.33	21.62	3.98	65.0	± 9.6 %
		Y	8.64	77.97	21.34		65.0	
		Z	8.71	77.32	21.10		65.0	

10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	X	2.72	67.23	15.95	0.00	150.0	± 9.6 %
		Y	2.57	66.31	15.13		150.0	
		Z	2.65	66.56	15.46		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	1.89	70.77	17.26	0.00	150.0	± 9.6 %
		Y	1.58	67.67	15.25		150.0	
		Z	1.72	68.75	16.01		150.0	
10277-CAA	PHS (QPSK)	X	6.00	70.47	14.76	9.03	50.0	± 9.6 %
		Y	5.21	68.57	13.21		50.0	
		Z	6.28	70.88	15.27		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	9.55	80.33	21.17	9.03	50.0	± 9.6 %
		Y	8.72	78.79	19.97		50.0	
		Z	9.29	79.51	21.06		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	9.72	80.54	21.26	9.03	50.0	± 9.6 %
		Y	8.86	78.97	20.05		50.0	
		Z	9.46	79.72	21.15		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	2.18	74.40	17.31	0.00	150.0	± 9.6 %
		Y	1.44	68.27	13.81		150.0	
		Z	1.72	70.30	15.40		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	1.24	71.68	16.15	0.00	150.0	± 9.6 %
		Y	0.80	65.30	12.12		150.0	
		Z	0.97	67.39	13.90		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	2.10	80.68	20.23	0.00	150.0	± 9.6 %
		Y	0.98	68.86	14.25		150.0	
		Z	1.23	71.77	16.34		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	4.35	92.52	24.81	0.00	150.0	± 9.6 %
		Y	1.43	74.29	17.12		150.0	
		Z	1.75	77.17	19.08		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	11.19	84.61	24.64	9.03	50.0	± 9.6 %
		Y	11.12	84.62	24.20		50.0	
		Z	10.33	82.52	23.91		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	3.13	71.75	17.66	0.00	150.0	± 9.6 %
		Y	2.77	69.64	16.38		150.0	
		Z	2.96	70.46	16.84		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	2.07	71.56	16.68	0.00	150.0	± 9.6 %
		Y	1.59	67.63	14.15		150.0	
		Z	1.84	69.13	15.41		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	4.44	77.05	18.50	0.00	150.0	± 9.6 %
		Y	3.17	71.89	15.69		150.0	
		Z	3.89	74.52	17.46		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	2.98	70.18	14.87	0.00	150.0	± 9.6 %
		Y	2.33	66.80	12.64		150.0	
		Z	2.88	69.22	14.45		150.0	
10301-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	5.88	68.71	19.12	4.17	80.0	± 9.6 %
		Y	5.67	68.35	18.79		80.0	
		Z	5.96	68.70	19.05		80.0	
10302-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	6.49	69.93	20.23	4.96	80.0	± 9.6 %
		Y	6.06	68.48	19.24		80.0	
		Z	6.58	69.96	20.17		80.0	

10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	6.38	70.18	20.37	4.96	80.0	± 9.6 %
		Y	5.90	68.52	19.27		80.0	
		Z	6.49	70.27	20.35		80.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	5.94	69.20	19.41	4.17	80.0	± 9.6 %
		Y	5.55	67.84	18.48		80.0	
		Z	6.02	69.19	19.33		80.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	8.63	79.84	25.16	6.02	50.0	± 9.6 %
		Y	8.50	80.74	25.49		50.0	
		Z	9.07	80.51	25.38		50.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	7.19	74.26	22.98	6.02	50.0	± 9.6 %
		Y	6.24	70.98	21.03		50.0	
		Z	7.44	74.65	23.11		50.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	7.43	75.32	23.26	6.02	50.0	± 9.6 %
		Y	7.08	75.34	23.24		50.0	
		Z	7.71	75.76	23.39		50.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	7.56	75.95	23.55	6.02	50.0	± 9.6 %
		Y	7.22	76.07	23.58		50.0	
		Z	7.85	76.40	23.68		50.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	7.34	74.67	23.20	6.02	50.0	± 9.6 %
		Y	6.34	71.28	21.21		50.0	
		Z	7.59	75.05	23.31		50.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	7.26	74.63	23.05	6.02	50.0	± 9.6 %
		Y	6.24	71.19	21.04		50.0	
		Z	7.51	75.03	23.17		50.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	3.50	70.87	17.20	0.00	150.0	± 9.6 %
		Y	3.12	68.92	16.05		150.0	
		Z	3.32	69.72	16.47		150.0	
10313-AAA	iDEN 1:3	X	8.27	79.76	19.38	6.99	70.0	± 9.6 %
		Y	7.09	77.48	18.12		70.0	
		Z	7.27	77.42	18.52		70.0	
10314-AAA	iDEN 1:6	X	10.52	85.41	23.73	10.00	30.0	± 9.6 %
		Y	9.80	84.47	23.05		30.0	
		Z	8.56	81.26	22.24		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	1.21	66.04	16.76	0.17	150.0	± 9.6 %
		Y	1.11	64.36	15.28		150.0	
		Z	1.16	64.99	15.81		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.78	67.20	16.69	0.17	150.0	± 9.6 %
		Y	4.67	66.87	16.36		150.0	
		Z	4.78	67.00	16.48		150.0	
10317-AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.78	67.20	16.69	0.17	150.0	± 9.6 %
		Y	4.67	66.87	16.36		150.0	
		Z	4.78	67.00	16.48		150.0	
10400-AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.88	67.44	16.59	0.00	150.0	± 9.6 %
		Y	4.75	67.07	16.25		150.0	
		Z	4.88	67.23	16.38		150.0	
10401-AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.52	67.51	16.67	0.00	150.0	± 9.6 %
		Y	5.43	67.26	16.42		150.0	
		Z	5.50	67.29	16.46		150.0	

10402-AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.81	67.99	16.74	0.00	150.0	± 9.6 %
		Y	5.71	67.67	16.46		150.0	
		Z	5.80	67.83	16.56		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	2.18	74.40	17.31	0.00	115.0	± 9.6 %
		Y	1.44	68.27	13.81		115.0	
		Z	1.72	70.30	15.40		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	2.18	74.40	17.31	0.00	115.0	± 9.6 %
		Y	1.44	68.27	13.81		115.0	
		Z	1.72	70.30	15.40		115.0	
10406-AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	100.00	125.34	32.57	0.00	100.0	± 9.6 %
		Y	100.00	122.30	30.90		100.0	
		Z	100.00	123.59	31.86		100.0	
10410-AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	X	100.00	121.08	31.14	3.23	80.0	± 9.6 %
		Y	100.00	119.39	30.03		80.0	
		Z	100.00	119.84	30.69		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	1.04	64.21	15.75	0.00	150.0	± 9.6 %
		Y	0.96	62.81	14.37		150.0	
		Z	1.00	63.31	14.86		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.68	67.03	16.52	0.00	150.0	± 9.6 %
		Y	4.57	66.70	16.19		150.0	
		Z	4.67	66.81	16.30		150.0	
10417-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.68	67.03	16.52	0.00	150.0	± 9.6 %
		Y	4.57	66.70	16.19		150.0	
		Z	4.67	66.81	16.30		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	X	4.66	67.18	16.53	0.00	150.0	± 9.6 %
		Y	4.55	66.84	16.19		150.0	
		Z	4.65	66.94	16.30		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	X	4.69	67.13	16.53	0.00	150.0	± 9.6 %
		Y	4.58	66.80	16.20		150.0	
		Z	4.68	66.91	16.31		150.0	
10422-AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.81	67.13	16.54	0.00	150.0	± 9.6 %
		Y	4.70	66.81	16.22		150.0	
		Z	4.80	66.92	16.33		150.0	
10423-AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	5.01	67.51	16.68	0.00	150.0	± 9.6 %
		Y	4.89	67.16	16.35		150.0	
		Z	5.01	67.31	16.47		150.0	
10424-AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.92	67.45	16.65	0.00	150.0	± 9.6 %
		Y	4.80	67.10	16.32		150.0	
		Z	4.92	67.24	16.43		150.0	
10425-AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.50	67.77	16.79	0.00	150.0	± 9.6 %
		Y	5.41	67.50	16.53		150.0	
		Z	5.49	67.58	16.59		150.0	
10426-AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.51	67.80	16.80	0.00	150.0	± 9.6 %
		Y	5.41	67.51	16.53		150.0	
		Z	5.50	67.62	16.60		150.0	

10427-AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.53	67.79	16.79	0.00	150.0	± 9.6 %
		Y	5.42	67.48	16.51		150.0	
		Z	5.52	67.63	16.61		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.38	70.70	18.40	0.00	150.0	± 9.6 %
		Y	4.25	70.46	18.05		150.0	
		Z	4.31	70.02	17.98		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	4.42	67.67	16.62	0.00	150.0	± 9.6 %
		Y	4.27	67.23	16.20		150.0	
		Z	4.41	67.37	16.37		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.70	67.52	16.63	0.00	150.0	± 9.6 %
		Y	4.57	67.13	16.26		150.0	
		Z	4.70	67.28	16.40		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.94	67.50	16.67	0.00	150.0	± 9.6 %
		Y	4.82	67.14	16.34		150.0	
		Z	4.94	67.29	16.46		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.49	71.52	18.43	0.00	150.0	± 9.6 %
		Y	4.34	71.22	18.01		150.0	
		Z	4.39	70.68	17.96		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	120.92	31.06	3.23	80.0	± 9.6 %
		Y	100.00	119.22	29.95		80.0	
		Z	100.00	119.70	30.62		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.75	67.86	16.21	0.00	150.0	± 9.6 %
		Y	3.56	67.20	15.57		150.0	
		Z	3.73	67.41	15.90		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	X	4.24	67.45	16.49	0.00	150.0	± 9.6 %
		Y	4.10	67.00	16.05		150.0	
		Z	4.22	67.14	16.23		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	X	4.49	67.35	16.53	0.00	150.0	± 9.6 %
		Y	4.37	66.95	16.16		150.0	
		Z	4.48	67.09	16.30		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.67	67.26	16.53	0.00	150.0	± 9.6 %
		Y	4.56	66.89	16.18		150.0	
		Z	4.66	67.04	16.31		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	3.69	68.21	15.98	0.00	150.0	± 9.6 %
		Y	3.47	67.39	15.23		150.0	
		Z	3.66	67.69	15.67		150.0	
10456-AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.36	68.35	16.93	0.00	150.0	± 9.6 %
		Y	6.27	68.07	16.69		150.0	
		Z	6.35	68.21	16.77		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.86	65.66	16.26	0.00	150.0	± 9.6 %
		Y	3.78	65.32	15.90		150.0	
		Z	3.84	65.45	16.04		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	4.10	70.68	17.90	0.00	150.0	± 9.6 %
		Y	3.95	70.36	17.40		150.0	
		Z	3.98	69.73	17.40		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	5.16	67.87	18.15	0.00	150.0	± 9.6 %
		Y	5.08	67.96	18.01		150.0	
		Z	5.12	67.39	17.86		150.0	

10460-AAA	UMTS-FDD (WCDMA, AMR)	X	1.21	74.36	19.56	0.00	150.0	± 9.6 %
		Y	0.84	67.73	15.53		150.0	
		Z	0.96	69.69	16.87		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	124.72	32.88	3.29	80.0	± 9.6 %
		Y	100.00	122.71	31.63		80.0	
		Z	100.00	122.27	31.89		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.81	26.22	3.23	80.0	± 9.6 %
		Y	100.00	107.68	24.48		80.0	
		Z	100.00	109.58	25.81		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	108.02	24.88	3.23	80.0	± 9.6 %
		Y	17.57	87.04	18.79		80.0	
		Z	57.71	101.03	23.21		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	122.99	31.92	3.23	80.0	± 9.6 %
		Y	100.00	120.66	30.52		80.0	
		Z	100.00	120.59	30.96		80.0	
10465-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.36	26.00	3.23	80.0	± 9.6 %
		Y	69.93	103.37	23.39		80.0	
		Z	100.00	109.17	25.60		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	107.59	24.67	3.23	80.0	± 9.6 %
		Y	10.32	81.39	17.12		80.0	
		Z	32.56	94.43	21.51		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.18	32.01	3.23	80.0	± 9.6 %
		Y	100.00	120.88	30.62		80.0	
		Z	100.00	120.77	31.04		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.50	26.06	3.23	80.0	± 9.6 %
		Y	95.55	106.84	24.20		80.0	
		Z	100.00	109.30	25.66		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	107.60	24.67	3.23	80.0	± 9.6 %
		Y	10.51	81.58	17.17		80.0	
		Z	33.51	94.76	21.58		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.21	32.02	3.23	80.0	± 9.6 %
		Y	100.00	120.90	30.62		80.0	
		Z	100.00	120.79	31.05		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.46	26.04	3.23	80.0	± 9.6 %
		Y	94.56	106.68	24.14		80.0	
		Z	100.00	109.26	25.63		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	107.56	24.64	3.23	80.0	± 9.6 %
		Y	10.43	81.48	17.13		80.0	
		Z	33.64	94.78	21.58		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.19	32.00	3.23	80.0	± 9.6 %
		Y	100.00	120.87	30.61		80.0	
		Z	100.00	120.77	31.03		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.47	26.04	3.23	80.0	± 9.6 %
		Y	92.06	106.40	24.08		80.0	
		Z	100.00	109.26	25.64		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	107.57	24.65	3.23	80.0	± 9.6 %
		Y	10.30	81.37	17.09		80.0	
		Z	33.12	94.61	21.54		80.0	

10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	110.32	25.97	3.23	80.0	± 9.6 %
		Y	73.47	103.85	23.47		80.0	
		Z	100.00	109.13	25.57		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	107.52	24.63	3.23	80.0	± 9.6 %
		Y	10.13	81.17	17.03		80.0	
		Z	32.56	94.40	21.47		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	23.24	102.02	28.60	3.23	80.0	± 9.6 %
		Y	17.72	96.96	26.53		80.0	
		Z	12.62	91.31	25.32		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	23.79	96.38	25.31	3.23	80.0	± 9.6 %
		Y	16.50	90.35	22.90		80.0	
		Z	13.56	87.65	22.71		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	19.64	92.74	23.93	3.23	80.0	± 9.6 %
		Y	13.10	86.39	21.35		80.0	
		Z	12.05	85.29	21.66		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	8.49	84.69	22.05	2.23	80.0	± 9.6 %
		Y	5.66	78.52	19.36		80.0	
		Z	6.07	79.11	20.05		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	11.70	86.22	22.45	2.23	80.0	± 9.6 %
		Y	8.73	81.47	20.24		80.0	
		Z	8.71	81.39	20.85		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	10.50	84.41	21.86	2.23	80.0	± 9.6 %
		Y	7.92	79.90	19.71		80.0	
		Z	8.18	80.26	20.46		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	8.12	84.44	22.68	2.23	80.0	± 9.6 %
		Y	5.95	79.56	20.54		80.0	
		Z	6.24	79.61	20.83		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.60	75.72	19.25	2.23	80.0	± 9.6 %
		Y	4.71	73.16	17.81		80.0	
		Z	5.00	73.46	18.29		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.48	75.06	18.99	2.23	80.0	± 9.6 %
		Y	4.65	72.64	17.60		80.0	
		Z	4.96	73.01	18.11		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.06	80.88	21.92	2.23	80.0	± 9.6 %
		Y	5.70	77.55	20.40		80.0	
		Z	6.08	77.77	20.57		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.31	73.88	19.45	2.23	80.0	± 9.6 %
		Y	4.75	72.25	18.50		80.0	
		Z	5.02	72.44	18.71		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.32	73.40	19.28	2.23	80.0	± 9.6 %
		Y	4.80	71.92	18.39		80.0	
		Z	5.07	72.08	18.60		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	6.29	77.08	20.62	2.23	80.0	± 9.6 %
		Y	5.44	74.84	19.51		80.0	
		Z	5.78	75.12	19.66		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.38	72.26	19.03	2.23	80.0	± 9.6 %
		Y	4.95	71.03	18.29		80.0	
		Z	5.22	71.29	18.47		80.0	

10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.41	71.97	18.93	2.23	80.0	± 9.6 %
		Y	4.99	70.82	18.22		80.0	
		Z	5.27	71.06	18.40		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.26	79.46	21.31	2.23	80.0	± 9.6 %
		Y	6.08	76.70	20.04		80.0	
		Z	6.47	77.03	20.19		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.52	72.92	19.28	2.23	80.0	± 9.6 %
		Y	5.04	71.57	18.51		80.0	
		Z	5.33	71.88	18.69		80.0	
10496-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.51	72.36	19.10	2.23	80.0	± 9.6 %
		Y	5.07	71.15	18.38		80.0	
		Z	5.35	71.43	18.55		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	6.84	81.16	20.14	2.23	80.0	± 9.6 %
		Y	4.18	74.07	16.91		80.0	
		Z	4.97	76.21	18.38		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.23	71.63	15.72	2.23	80.0	± 9.6 %
		Y	2.88	66.72	12.99		80.0	
		Z	3.81	69.89	15.10		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.07	70.79	15.25	2.23	80.0	± 9.6 %
		Y	2.78	66.03	12.55		80.0	
		Z	3.73	69.33	14.75		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.25	82.07	22.09	2.23	80.0	± 9.6 %
		Y	5.64	78.16	20.30		80.0	
		Z	5.95	78.24	20.53		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.43	74.78	19.24	2.23	80.0	± 9.6 %
		Y	4.72	72.72	18.04		80.0	
		Z	4.99	72.91	18.39		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.43	74.40	19.05	2.23	80.0	± 9.6 %
		Y	4.75	72.45	17.89		80.0	
		Z	5.01	72.63	18.25		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	6.96	80.64	21.82	2.23	80.0	± 9.6 %
		Y	5.62	77.31	20.29		80.0	
		Z	6.00	77.58	20.48		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.28	73.79	19.40	2.23	80.0	± 9.6 %
		Y	4.72	72.15	18.44		80.0	
		Z	5.00	72.37	18.67		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.30	73.31	19.23	2.23	80.0	± 9.6 %
		Y	4.78	71.81	18.34		80.0	
		Z	5.05	72.00	18.55		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.19	79.29	21.23	2.23	80.0	± 9.6 %
		Y	6.02	76.53	19.97		80.0	
		Z	6.42	76.89	20.13		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.49	72.85	19.25	2.23	80.0	± 9.6 %
		Y	5.02	71.50	18.47		80.0	
		Z	5.31	71.82	18.66		80.0	

10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.49	72.29	19.06	2.23	80.0	± 9.6 %
		Y	5.05	71.07	18.34		80.0	
		Z	5.33	71.37	18.52		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	6.71	76.12	20.06	2.23	80.0	± 9.6 %
		Y	5.94	74.25	19.13		80.0	
		Z	6.28	74.57	19.27		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.84	71.95	18.94	2.23	80.0	± 9.6 %
		Y	5.42	70.86	18.30		80.0	
		Z	5.71	71.20	18.47		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.82	71.51	18.81	2.23	80.0	± 9.6 %
		Y	5.44	70.51	18.21		80.0	
		Z	5.71	70.83	18.37		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	7.61	78.80	20.90	2.23	80.0	± 9.6 %
		Y	6.48	76.29	19.75		80.0	
		Z	6.88	76.71	19.92		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.82	72.58	19.18	2.23	80.0	± 9.6 %
		Y	5.36	71.33	18.47		80.0	
		Z	5.67	71.74	18.66		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.73	71.89	18.96	2.23	80.0	± 9.6 %
		Y	5.32	70.77	18.31		80.0	
		Z	5.61	71.15	18.49		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	1.00	64.53	15.90	0.00	150.0	± 9.6 %
		Y	0.92	62.98	14.41		150.0	
		Z	0.96	63.54	14.94		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	1.68	91.06	26.34	0.00	150.0	± 9.6 %
		Y	0.55	69.99	16.34		150.0	
		Z	0.73	74.56	19.01		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.92	68.12	17.45	0.00	150.0	± 9.6 %
		Y	0.77	64.83	14.89		150.0	
		Z	0.84	65.95	15.79		150.0	
10518-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.67	67.12	16.50	0.00	150.0	± 9.6 %
		Y	4.56	66.77	16.17		150.0	
		Z	4.66	66.89	16.28		150.0	
10519-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.89	67.40	16.64	0.00	150.0	± 9.6 %
		Y	4.77	67.04	16.30		150.0	
		Z	4.89	67.19	16.43		150.0	
10520-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.74	67.39	16.57	0.00	150.0	± 9.6 %
		Y	4.61	67.01	16.22		150.0	
		Z	4.74	67.17	16.35		150.0	
10521-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.67	67.41	16.56	0.00	150.0	± 9.6 %
		Y	4.55	67.00	16.20		150.0	
		Z	4.67	67.18	16.34		150.0	
10522-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.72	67.39	16.60	0.00	150.0	± 9.6 %
		Y	4.60	67.04	16.27		150.0	
		Z	4.71	67.14	16.36		150.0	

10523-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.59	67.29	16.46	0.00	150.0	± 9.6 %
		Y	4.47	66.91	16.11		150.0	
		Z	4.58	67.04	16.22		150.0	
10524-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.67	67.35	16.59	0.00	150.0	± 9.6 %
		Y	4.55	66.98	16.24		150.0	
		Z	4.67	67.11	16.36		150.0	
10525-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.63	66.37	16.17	0.00	150.0	± 9.6 %
		Y	4.52	66.01	15.83		150.0	
		Z	4.62	66.13	15.94		150.0	
10526-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.83	66.78	16.32	0.00	150.0	± 9.6 %
		Y	4.70	66.40	15.97		150.0	
		Z	4.82	66.54	16.09		150.0	
10527-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.75	66.76	16.27	0.00	150.0	± 9.6 %
		Y	4.62	66.36	15.92		150.0	
		Z	4.74	66.51	16.04		150.0	
10528-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.77	66.78	16.31	0.00	150.0	± 9.6 %
		Y	4.64	66.38	15.95		150.0	
		Z	4.76	66.54	16.08		150.0	
10529-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.77	66.78	16.31	0.00	150.0	± 9.6 %
		Y	4.64	66.38	15.95		150.0	
		Z	4.76	66.54	16.08		150.0	
10531-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.78	66.93	16.34	0.00	150.0	± 9.6 %
		Y	4.64	66.50	15.97		150.0	
		Z	4.77	66.69	16.10		150.0	
10532-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.63	66.80	16.29	0.00	150.0	± 9.6 %
		Y	4.49	66.35	15.90		150.0	
		Z	4.62	66.56	16.05		150.0	
10533-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.78	66.80	16.29	0.00	150.0	± 9.6 %
		Y	4.65	66.41	15.94		150.0	
		Z	4.77	66.55	16.05		150.0	
10534-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	5.28	66.88	16.33	0.00	150.0	± 9.6 %
		Y	5.17	66.53	16.03		150.0	
		Z	5.27	66.70	16.13		150.0	
10535-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.35	67.03	16.39	0.00	150.0	± 9.6 %
		Y	5.24	66.69	16.10		150.0	
		Z	5.34	66.84	16.18		150.0	
10536-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	5.22	67.03	16.37	0.00	150.0	± 9.6 %
		Y	5.10	66.65	16.06		150.0	
		Z	5.21	66.83	16.16		150.0	
10537-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	5.29	67.00	16.36	0.00	150.0	± 9.6 %
		Y	5.17	66.63	16.05		150.0	
		Z	5.27	66.80	16.15		150.0	
10538-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.40	67.06	16.43	0.00	150.0	± 9.6 %
		Y	5.27	66.69	16.12		150.0	
		Z	5.39	66.88	16.23		150.0	
10540-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	5.30	67.01	16.42	0.00	150.0	± 9.6 %
		Y	5.19	66.66	16.12		150.0	
		Z	5.29	66.82	16.22		150.0	

10541-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	5.28	66.90	16.36	0.00	150.0	± 9.6 %
		Y	5.16	66.53	16.05		150.0	
		Z	5.27	66.74	16.17		150.0	
10542-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.43	66.95	16.40	0.00	150.0	± 9.6 %
		Y	5.32	66.61	16.11		150.0	
		Z	5.42	66.77	16.20		150.0	
10543-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.51	66.95	16.41	0.00	150.0	± 9.6 %
		Y	5.40	66.65	16.14		150.0	
		Z	5.51	66.78	16.22		150.0	
10544-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.56	66.97	16.30	0.00	150.0	± 9.6 %
		Y	5.46	66.64	16.02		150.0	
		Z	5.54	66.80	16.11		150.0	
10545-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.78	67.41	16.46	0.00	150.0	± 9.6 %
		Y	5.68	67.09	16.19		150.0	
		Z	5.76	67.21	16.25		150.0	
10546-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.66	67.27	16.41	0.00	150.0	± 9.6 %
		Y	5.55	66.90	16.11		150.0	
		Z	5.65	67.10	16.22		150.0	
10547-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.75	67.34	16.43	0.00	150.0	± 9.6 %
		Y	5.64	66.99	16.14		150.0	
		Z	5.73	67.16	16.24		150.0	
10548-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	6.10	68.57	17.02	0.00	150.0	± 9.6 %
		Y	5.97	68.15	16.70		150.0	
		Z	6.06	68.30	16.78		150.0	
10550-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.68	67.21	16.39	0.00	150.0	± 9.6 %
		Y	5.57	66.88	16.11		150.0	
		Z	5.66	67.04	16.20		150.0	
10551-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.70	67.30	16.39	0.00	150.0	± 9.6 %
		Y	5.58	66.93	16.09		150.0	
		Z	5.68	67.15	16.21		150.0	
10552-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.59	67.05	16.28	0.00	150.0	± 9.6 %
		Y	5.48	66.70	15.99		150.0	
		Z	5.58	66.90	16.10		150.0	
10553-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.69	67.10	16.33	0.00	150.0	± 9.6 %
		Y	5.57	66.76	16.05		150.0	
		Z	5.67	66.95	16.15		150.0	
10554-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.97	67.34	16.39	0.00	150.0	± 9.6 %
		Y	5.87	67.02	16.12		150.0	
		Z	5.94	67.19	16.21		150.0	
10555-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	6.12	67.69	16.53	0.00	150.0	± 9.6 %
		Y	6.01	67.35	16.26		150.0	
		Z	6.10	67.54	16.36		150.0	
10556-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	6.13	67.71	16.53	0.00	150.0	± 9.6 %
		Y	6.03	67.38	16.27		150.0	
		Z	6.11	67.54	16.35		150.0	
10557-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	6.12	67.66	16.53	0.00	150.0	± 9.6 %
		Y	6.00	67.31	16.25		150.0	
		Z	6.10	67.52	16.36		150.0	

10558-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	6.18	67.86	16.65	0.00	150.0	± 9.6 %
		Y	6.06	67.49	16.36		150.0	
		Z	6.16	67.71	16.47		150.0	
10560-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	6.16	67.67	16.59	0.00	150.0	± 9.6 %
		Y	6.05	67.32	16.31		150.0	
		Z	6.15	67.54	16.42		150.0	
10561-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	6.08	67.64	16.61	0.00	150.0	± 9.6 %
		Y	5.97	67.29	16.33		150.0	
		Z	6.06	67.49	16.44		150.0	
10562-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	6.25	68.16	16.88	0.00	150.0	± 9.6 %
		Y	6.13	67.77	16.57		150.0	
		Z	6.23	68.01	16.70		150.0	
10563-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	6.60	68.73	17.10	0.00	150.0	± 9.6 %
		Y	6.50	68.45	16.86		150.0	
		Z	6.53	68.43	16.86		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	5.01	67.24	16.68	0.46	150.0	± 9.6 %
		Y	4.90	66.90	16.36		150.0	
		Z	5.01	67.05	16.49		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	5.27	67.70	16.99	0.46	150.0	± 9.6 %
		Y	5.15	67.37	16.68		150.0	
		Z	5.27	67.52	16.80		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	5.11	67.60	16.84	0.46	150.0	± 9.6 %
		Y	4.98	67.23	16.50		150.0	
		Z	5.11	67.41	16.64		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	5.13	67.96	17.16	0.46	150.0	± 9.6 %
		Y	5.01	67.61	16.84		150.0	
		Z	5.13	67.75	16.95		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	5.02	67.36	16.62	0.46	150.0	± 9.6 %
		Y	4.90	67.01	16.28		150.0	
		Z	5.02	67.16	16.41		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	5.07	67.97	17.18	0.46	150.0	± 9.6 %
		Y	4.96	67.67	16.89		150.0	
		Z	5.06	67.76	16.96		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	5.11	67.83	17.12	0.46	150.0	± 9.6 %
		Y	5.00	67.52	16.83		150.0	
		Z	5.11	67.61	16.91		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.43	67.78	17.55	0.46	130.0	± 9.6 %
		Y	1.29	65.83	16.01		130.0	
		Z	1.37	66.57	16.56		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.47	68.62	18.01	0.46	130.0	± 9.6 %
		Y	1.32	66.50	16.39		130.0	
		Z	1.40	67.26	16.95		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	100.00	147.77	39.50	0.46	130.0	± 9.6 %
		Y	5.11	95.86	25.26		130.0	
		Z	11.46	108.94	29.46		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	2.11	79.07	22.64	0.46	130.0	± 9.6 %
		Y	1.59	73.49	19.59		130.0	
		Z	1.75	74.78	20.34		130.0	

10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.84	67.12	16.79	0.46	130.0	± 9.6 %
		Y	4.72	66.80	16.47		130.0	
		Z	4.83	66.93	16.59		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.86	67.28	16.85	0.46	130.0	± 9.6 %
		Y	4.75	66.95	16.53		130.0	
		Z	4.86	67.08	16.65		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	5.09	67.60	17.02	0.46	130.0	± 9.6 %
		Y	4.97	67.26	16.71		130.0	
		Z	5.10	67.41	16.83		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.99	67.77	17.12	0.46	130.0	± 9.6 %
		Y	4.86	67.43	16.80		130.0	
		Z	4.99	67.57	16.91		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.77	67.19	16.53	0.46	130.0	± 9.6 %
		Y	4.64	66.77	16.15		130.0	
		Z	4.78	67.01	16.33		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.81	67.17	16.53	0.46	130.0	± 9.6 %
		Y	4.68	66.78	16.16		130.0	
		Z	4.82	66.97	16.32		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.90	67.87	17.09	0.46	130.0	± 9.6 %
		Y	4.77	67.49	16.75		130.0	
		Z	4.90	67.66	16.87		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.73	66.96	16.34	0.46	130.0	± 9.6 %
		Y	4.59	66.53	15.94		130.0	
		Z	4.73	66.78	16.14		130.0	
10583-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.84	67.12	16.79	0.46	130.0	± 9.6 %
		Y	4.72	66.80	16.47		130.0	
		Z	4.83	66.93	16.59		130.0	
10584-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.86	67.28	16.85	0.46	130.0	± 9.6 %
		Y	4.75	66.95	16.53		130.0	
		Z	4.86	67.08	16.65		130.0	
10585-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	5.09	67.60	17.02	0.46	130.0	± 9.6 %
		Y	4.97	67.26	16.71		130.0	
		Z	5.10	67.41	16.83		130.0	
10586-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.99	67.77	17.12	0.46	130.0	± 9.6 %
		Y	4.86	67.43	16.80		130.0	
		Z	4.99	67.57	16.91		130.0	
10587-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.77	67.19	16.53	0.46	130.0	± 9.6 %
		Y	4.64	66.77	16.15		130.0	
		Z	4.78	67.01	16.33		130.0	
10588-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.81	67.17	16.53	0.46	130.0	± 9.6 %
		Y	4.68	66.78	16.16		130.0	
		Z	4.82	66.97	16.32		130.0	
10589-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.90	67.87	17.09	0.46	130.0	± 9.6 %
		Y	4.77	67.49	16.75		130.0	
		Z	4.90	67.66	16.87		130.0	
10590-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.73	66.96	16.34	0.46	130.0	± 9.6 %
		Y	4.59	66.53	15.94		130.0	
		Z	4.73	66.78	16.14		130.0	

10591-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.98	67.15	16.87	0.46	130.0	± 9.6 %
		Y	4.87	66.85	16.57		130.0	
		Z	4.98	66.97	16.68		130.0	
10592-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	5.15	67.50	16.99	0.46	130.0	± 9.6 %
		Y	5.04	67.19	16.69		130.0	
		Z	5.16	67.32	16.80		130.0	
10593-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	5.09	67.46	16.91	0.46	130.0	± 9.6 %
		Y	4.96	67.12	16.59		130.0	
		Z	5.09	67.29	16.72		130.0	
10594-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	5.14	67.60	17.04	0.46	130.0	± 9.6 %
		Y	5.02	67.28	16.73		130.0	
		Z	5.14	67.42	16.84		130.0	
10595-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	5.11	67.58	16.95	0.46	130.0	± 9.6 %
		Y	4.99	67.24	16.64		130.0	
		Z	5.12	67.40	16.76		130.0	
10596-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	5.05	67.59	16.96	0.46	130.0	± 9.6 %
		Y	4.93	67.24	16.64		130.0	
		Z	5.06	67.40	16.76		130.0	
10597-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	5.00	67.53	16.87	0.46	130.0	± 9.6 %
		Y	4.88	67.16	16.53		130.0	
		Z	5.01	67.35	16.68		130.0	
10598-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.98	67.77	17.12	0.46	130.0	± 9.6 %
		Y	4.86	67.40	16.79		130.0	
		Z	4.99	67.58	16.92		130.0	
10599-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.65	67.74	17.05	0.46	130.0	± 9.6 %
		Y	5.54	67.42	16.77		130.0	
		Z	5.65	67.58	16.87		130.0	
10600-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.86	68.37	17.35	0.46	130.0	± 9.6 %
		Y	5.74	68.03	17.05		130.0	
		Z	5.87	68.25	17.19		130.0	
10601-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.71	67.99	17.17	0.46	130.0	± 9.6 %
		Y	5.59	67.67	16.88		130.0	
		Z	5.71	67.84	16.99		130.0	
10602-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.80	67.99	17.09	0.46	130.0	± 9.6 %
		Y	5.68	67.66	16.80		130.0	
		Z	5.80	67.87	16.93		130.0	
10603-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.88	68.27	17.35	0.46	130.0	± 9.6 %
		Y	5.76	67.95	17.07		130.0	
		Z	5.91	68.22	17.22		130.0	
10604-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.65	67.69	17.05	0.46	130.0	± 9.6 %
		Y	5.55	67.38	16.78		130.0	
		Z	5.65	67.55	16.88		130.0	
10605-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.77	68.03	17.23	0.46	130.0	± 9.6 %
		Y	5.67	67.75	16.97		130.0	
		Z	5.76	67.86	17.04		130.0	
10606-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.54	67.48	16.82	0.46	130.0	± 9.6 %
		Y	5.42	67.14	16.52		130.0	
		Z	5.54	67.37	16.67		130.0	

10607-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.81	66.46	16.48	0.46	130.0	± 9.6 %
		Y	4.70	66.13	16.17		130.0	
		Z	4.81	66.25	16.27		130.0	
10608-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	5.03	66.90	16.65	0.46	130.0	± 9.6 %
		Y	4.90	66.55	16.34		130.0	
		Z	5.02	66.68	16.44		130.0	
10609-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.92	66.79	16.52	0.46	130.0	± 9.6 %
		Y	4.79	66.41	16.18		130.0	
		Z	4.92	66.57	16.31		130.0	
10610-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.97	66.94	16.67	0.46	130.0	± 9.6 %
		Y	4.84	66.57	16.34		130.0	
		Z	4.97	66.72	16.46		130.0	
10611-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.89	66.78	16.54	0.46	130.0	± 9.6 %
		Y	4.76	66.39	16.20		130.0	
		Z	4.89	66.57	16.33		130.0	
10612-AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.92	66.95	16.59	0.46	130.0	± 9.6 %
		Y	4.78	66.55	16.24		130.0	
		Z	4.91	66.73	16.37		130.0	
10613-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.93	66.87	16.50	0.46	130.0	± 9.6 %
		Y	4.79	66.46	16.14		130.0	
		Z	4.93	66.66	16.28		130.0	
10614-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.85	67.03	16.71	0.46	130.0	± 9.6 %
		Y	4.72	66.63	16.36		130.0	
		Z	4.85	66.82	16.49		130.0	
10615-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.90	66.61	16.33	0.46	130.0	± 9.6 %
		Y	4.76	66.22	15.98		130.0	
		Z	4.90	66.40	16.12		130.0	
10616-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.47	66.98	16.66	0.46	130.0	± 9.6 %
		Y	5.36	66.66	16.38		130.0	
		Z	5.46	66.82	16.47		130.0	
10617-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.52	67.09	16.68	0.46	130.0	± 9.6 %
		Y	5.42	66.80	16.41		130.0	
		Z	5.52	66.93	16.49		130.0	
10618-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.42	67.18	16.74	0.46	130.0	± 9.6 %
		Y	5.31	66.84	16.45		130.0	
		Z	5.41	67.00	16.54		130.0	
10619-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.45	67.00	16.59	0.46	130.0	± 9.6 %
		Y	5.34	66.68	16.31		130.0	
		Z	5.44	66.82	16.40		130.0	
10620-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.56	67.11	16.69	0.46	130.0	± 9.6 %
		Y	5.44	66.75	16.39		130.0	
		Z	5.56	66.95	16.51		130.0	
10621-AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.53	67.13	16.81	0.46	130.0	± 9.6 %
		Y	5.42	66.81	16.54		130.0	
		Z	5.53	66.98	16.63		130.0	
10622-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.53	67.27	16.87	0.46	130.0	± 9.6 %
		Y	5.43	66.97	16.61		130.0	
		Z	5.52	67.09	16.67		130.0	

10623-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.42	66.86	16.56	0.46	130.0	± 9.6 %
		Y	5.30	66.51	16.26		130.0	
		Z	5.42	66.73	16.39		130.0	
10624-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.61	67.03	16.70	0.46	130.0	± 9.6 %
		Y	5.50	66.72	16.43		130.0	
		Z	5.60	66.86	16.51		130.0	
10625-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	6.05	68.19	17.33	0.46	130.0	± 9.6 %
		Y	5.94	67.90	17.07		130.0	
		Z	6.01	67.90	17.08		130.0	
10626-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.72	66.99	16.57	0.46	130.0	± 9.6 %
		Y	5.63	66.69	16.31		130.0	
		Z	5.71	66.84	16.40		130.0	
10627-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.99	67.59	16.82	0.46	130.0	± 9.6 %
		Y	5.90	67.32	16.58		130.0	
		Z	5.97	67.39	16.62		130.0	
10628-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.80	67.20	16.57	0.46	130.0	± 9.6 %
		Y	5.69	66.85	16.29		130.0	
		Z	5.79	67.05	16.40		130.0	
10629-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.88	67.25	16.59	0.46	130.0	± 9.6 %
		Y	5.77	66.92	16.31		130.0	
		Z	5.87	67.12	16.43		130.0	
10630-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.51	69.31	17.62	0.46	130.0	± 9.6 %
		Y	6.37	68.86	17.28		130.0	
		Z	6.46	69.04	17.39		130.0	
10631-AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.31	68.81	17.54	0.46	130.0	± 9.6 %
		Y	6.17	68.39	17.24		130.0	
		Z	6.30	68.62	17.35		130.0	
10632-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.95	67.61	16.96	0.46	130.0	± 9.6 %
		Y	5.85	67.34	16.73		130.0	
		Z	5.94	67.45	16.78		130.0	
10633-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.89	67.42	16.71	0.46	130.0	± 9.6 %
		Y	5.75	67.01	16.39		130.0	
		Z	5.89	67.32	16.56		130.0	
10634-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.85	67.37	16.74	0.46	130.0	± 9.6 %
		Y	5.73	67.02	16.46		130.0	
		Z	5.86	67.27	16.59		130.0	
10635-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.75	66.78	16.20	0.46	130.0	± 9.6 %
		Y	5.62	66.39	15.89		130.0	
		Z	5.75	66.67	16.05		130.0	
10636-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	6.13	67.38	16.66	0.46	130.0	± 9.6 %
		Y	6.05	67.09	16.42		130.0	
		Z	6.12	67.24	16.50		130.0	
10637-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.31	67.79	16.85	0.46	130.0	± 9.6 %
		Y	6.21	67.50	16.60		130.0	
		Z	6.29	67.65	16.68		130.0	
10638-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.31	67.76	16.81	0.46	130.0	± 9.6 %
		Y	6.21	67.47	16.56		130.0	
		Z	6.29	67.60	16.64		130.0	

10639-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.30	67.76	16.86	0.46	130.0	± 9.6 %
		Y	6.20	67.43	16.59		130.0	
		Z	6.29	67.63	16.70		130.0	
10640-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.34	67.87	16.86	0.46	130.0	± 9.6 %
		Y	6.22	67.50	16.57		130.0	
		Z	6.33	67.75	16.70		130.0	
10641-AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.33	67.58	16.73	0.46	130.0	± 9.6 %
		Y	6.23	67.29	16.48		130.0	
		Z	6.31	67.45	16.57		130.0	
10642-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.39	67.88	17.04	0.46	130.0	± 9.6 %
		Y	6.28	67.58	16.79		130.0	
		Z	6.38	67.76	16.88		130.0	
10643-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.22	67.60	16.81	0.46	130.0	± 9.6 %
		Y	6.12	67.28	16.54		130.0	
		Z	6.21	67.48	16.65		130.0	
10644-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.47	68.34	17.21	0.46	130.0	± 9.6 %
		Y	6.34	67.93	16.89		130.0	
		Z	6.46	68.22	17.05		130.0	
10645-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.86	69.01	17.48	0.46	130.0	± 9.6 %
		Y	6.84	68.95	17.35		130.0	
		Z	6.77	68.66	17.21		130.0	
10646-AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	39.97	118.78	39.16	9.30	60.0	± 9.6 %
		Y	36.64	117.33	38.51		60.0	
		Z	28.19	109.42	36.13		60.0	
10647-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	43.22	121.45	40.07	9.30	60.0	± 9.6 %
		Y	37.61	118.78	39.06		60.0	
		Z	29.77	111.44	36.87		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.92	67.44	13.60	0.00	150.0	± 9.6 %
		Y	0.67	63.31	10.51		150.0	
		Z	0.80	64.88	12.09		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	4.65	69.66	17.99	2.23	80.0	± 9.6 %
		Y	4.35	68.72	17.32		80.0	
		Z	4.56	68.93	17.55		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	5.05	68.61	17.89	2.23	80.0	± 9.6 %
		Y	4.81	67.90	17.37		80.0	
		Z	5.01	68.17	17.57		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.97	68.24	17.87	2.23	80.0	± 9.6 %
		Y	4.75	67.55	17.37		80.0	
		Z	4.94	67.85	17.56		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	5.03	68.27	17.91	2.23	80.0	± 9.6 %
		Y	4.81	67.56	17.41		80.0	
		Z	4.99	67.90	17.61		80.0	
10658-AAA	Pulse Waveform (200Hz, 10%)	X	13.25	86.83	23.62	10.00	50.0	± 9.6 %
		Y	14.38	88.09	23.44		50.0	
		Z	11.47	83.98	22.82		50.0	
10659-AAA	Pulse Waveform (200Hz, 20%)	X	55.89	109.63	28.77	6.99	60.0	± 9.6 %
		Y	73.21	111.71	28.47		60.0	
		Z	23.49	96.54	25.38		60.0	

10660-AAA	Pulse Waveform (200Hz, 40%)	X	100.00	116.44	28.38	3.98	80.0	± 9.6 %
		Y	100.00	113.18	26.58		80.0	
		Z	100.00	116.19	28.39		80.0	
10661-AAA	Pulse Waveform (200Hz, 60%)	X	100.00	118.35	27.71	2.22	100.0	± 9.6 %
		Y	100.00	112.59	24.89		100.0	
		Z	100.00	116.83	27.13		100.0	
10662-AAA	Pulse Waveform (200Hz, 80%)	X	100.00	126.67	29.16	0.97	120.0	± 9.6 %
		Y	100.00	111.31	22.51		120.0	
		Z	100.00	120.40	26.63		120.0	

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

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test** **Certificate No: EX3-7357_Apr18**

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:7357

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

BN ✓ 05-01-2018

Calibration date: April 18, 2018

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-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
Reference Probe ES3DV2	SN: 3013	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 19, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,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., ϑ = 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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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*.
- *DCPx,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
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,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 ≤ 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 *NORMx,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 *NORMx* (no uncertainty required).

Probe EX3DV4

SN:7357

Manufactured: February 5, 2015
Calibrated: April 18, 2018

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7357

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.37	0.48	0.40	± 10.1 %
DCP (mV)[B]	89.1	99.1	96.4	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	151.5	±2.7 %
		Y	0.0	0.0	1.0		139.1	
		Z	0.0	0.0	1.0		158.4	

Note: For details on UID parameters see Appendix.

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	37.91	303.3	40.25	6.413	0.832	4.998	0.00	0.454	1.006
Y	48.33	363.1	36.01	10.58	0.113	5.100	0.00	0.458	1.004
Z	39.38	305.2	38.03	5.76	0.610	5.046	0.00	0.461	1.008

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7357

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
64	54.2	0.75	14.92	14.92	14.92	0.00	1.00	± 13.3 %
150	52.3	0.76	13.49	13.49	13.49	0.00	1.00	± 13.3 %
300	45.3	0.87	12.37	12.37	12.37	0.08	1.20	± 13.3 %
450	43.5	0.87	11.17	11.17	11.17	0.14	1.20	± 13.3 %
750	41.9	0.89	10.50	10.50	10.50	0.45	0.85	± 12.0 %
835	41.5	0.90	10.11	10.11	10.11	0.37	0.93	± 12.0 %
1750	40.1	1.37	8.80	8.80	8.80	0.38	0.86	± 12.0 %
1900	40.0	1.40	8.47	8.47	8.47	0.18	0.83	± 12.0 %
2300	39.5	1.67	7.83	7.83	7.83	0.33	0.86	± 12.0 %
2450	39.2	1.80	7.43	7.43	7.43	0.37	0.89	± 12.0 %
2600	39.0	1.96	7.13	7.13	7.13	0.27	0.98	± 12.0 %
5250	35.9	4.71	5.62	5.62	5.62	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.93	4.93	4.93	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.23	5.23	5.23	0.40	1.80	± 13.1 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7357

Calibration Parameter Determined in Body Tissue Simulating Media

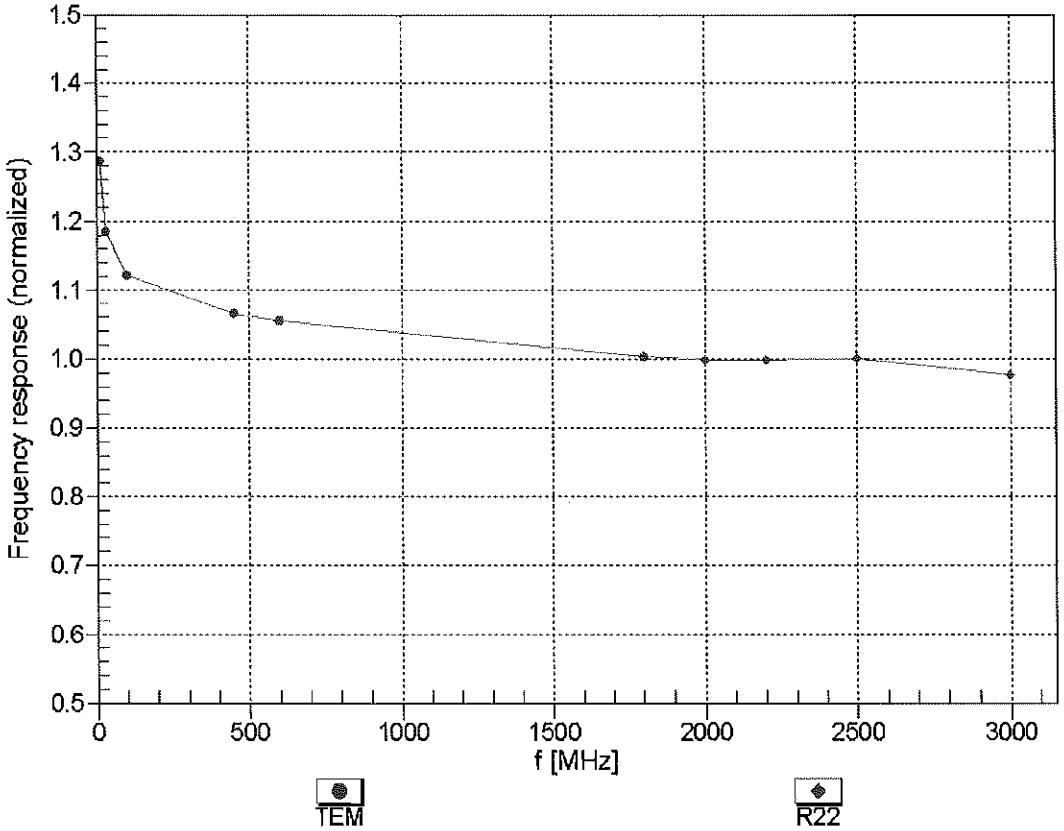
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
150	61.9	0.80	12.99	12.99	12.99	0.00	1.00	± 13.3 %
300	58.2	0.92	12.08	12.08	12.08	0.05	1.20	± 13.3 %
450	56.7	0.94	11.52	11.52	11.52	0.08	1.20	± 13.3 %
750	55.5	0.96	10.37	10.37	10.37	0.47	0.85	± 12.0 %
835	55.2	0.97	10.17	10.17	10.17	0.37	0.93	± 12.0 %
1750	53.4	1.49	8.43	8.43	8.43	0.37	0.86	± 12.0 %
1900	53.3	1.52	8.08	8.08	8.08	0.36	0.83	± 12.0 %
2300	52.9	1.81	7.74	7.74	7.74	0.38	0.85	± 12.0 %
2450	52.7	1.95	7.60	7.60	7.60	0.35	0.88	± 12.0 %
2600	52.5	2.16	7.44	7.44	7.44	0.33	0.93	± 12.0 %
5250	48.9	5.36	4.78	4.78	4.78	0.50	1.80	± 13.1 %
5600	48.5	5.77	4.20	4.20	4.20	0.50	1.80	± 13.1 %
5750	48.3	5.94	4.21	4.21	4.21	0.50	1.80	± 13.1 %

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

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

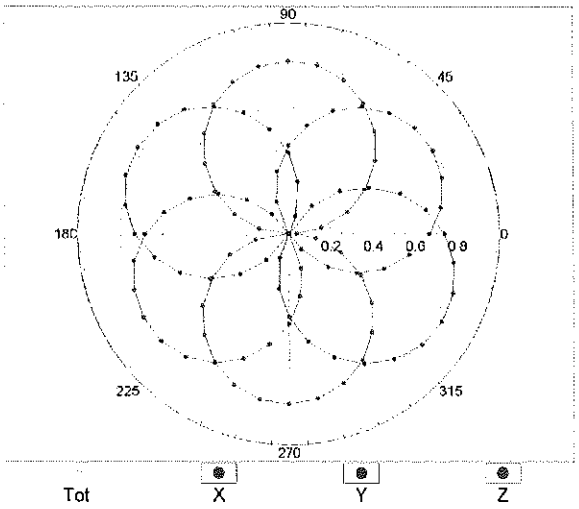
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



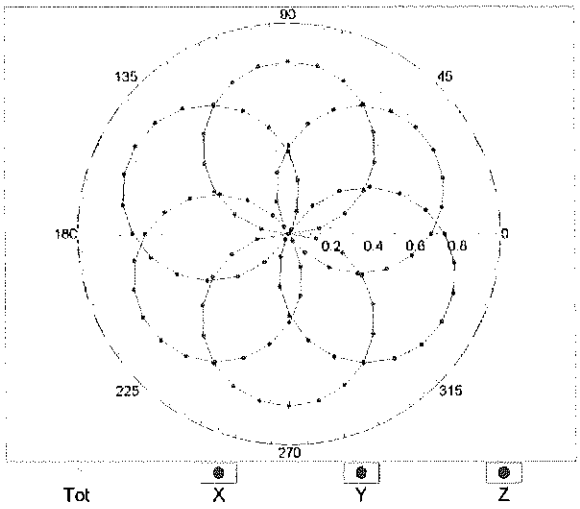
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

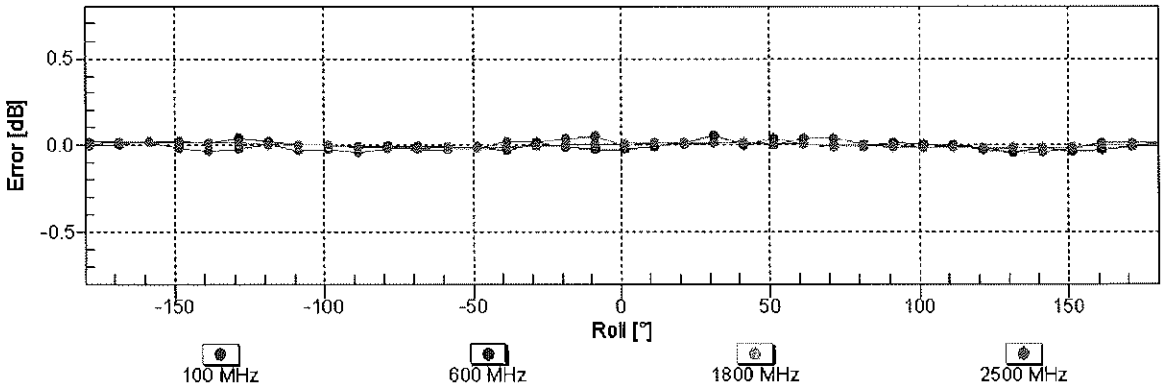
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



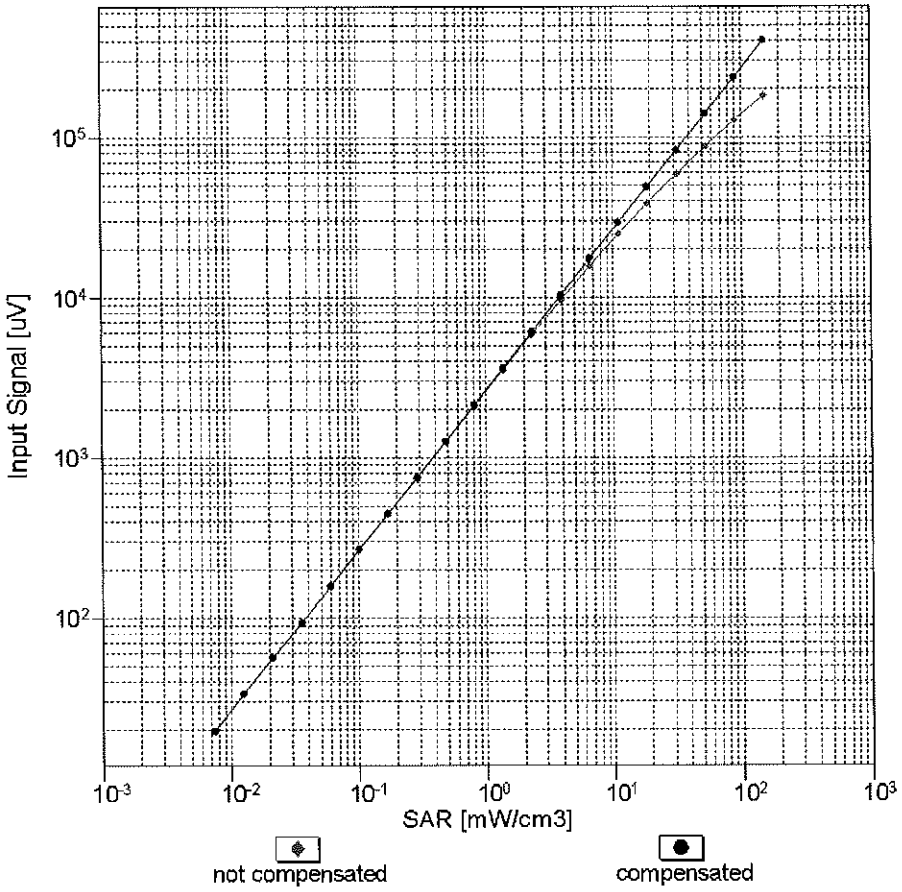
f=1800 MHz,R22

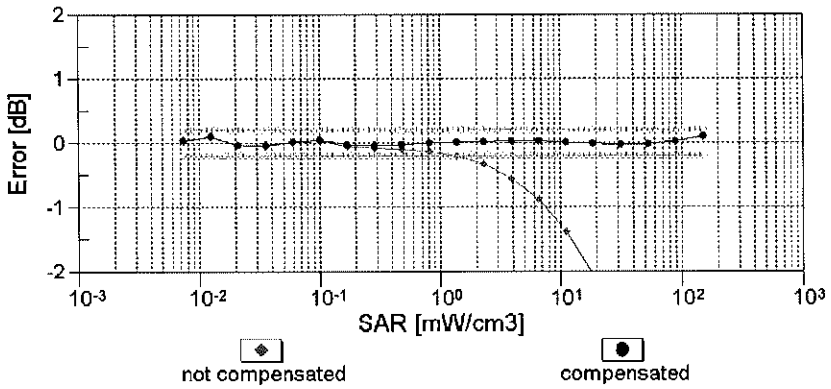




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

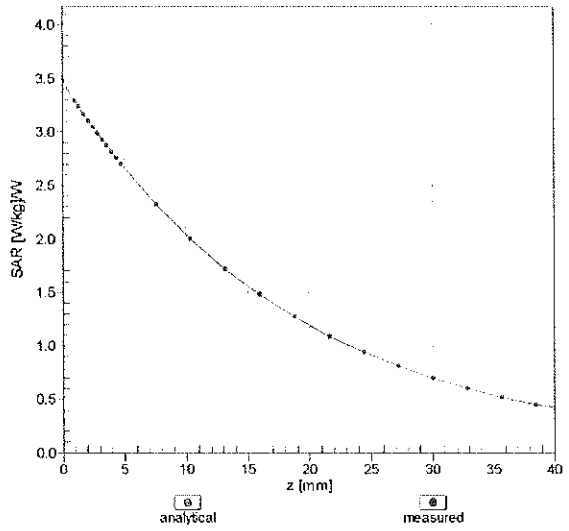




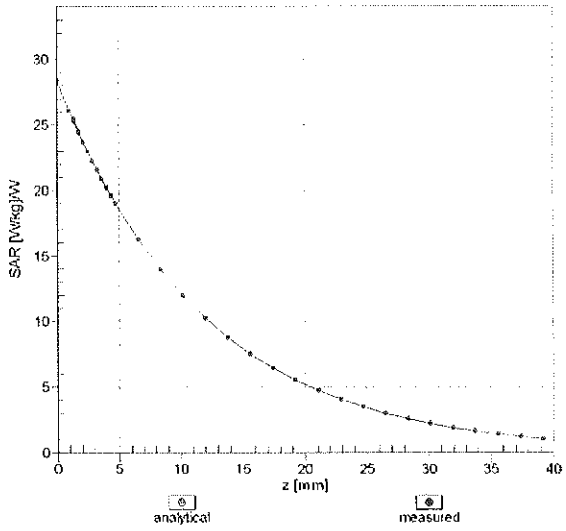
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

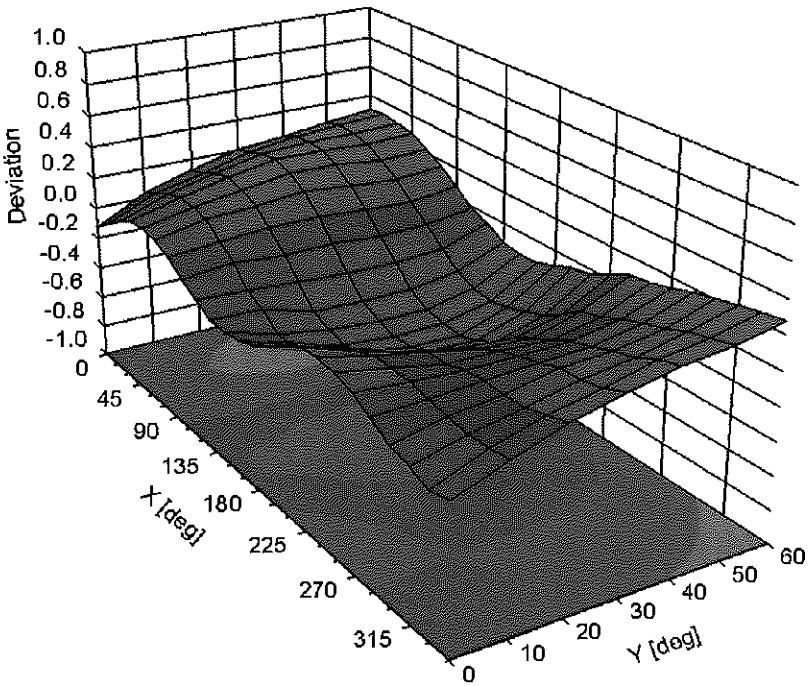


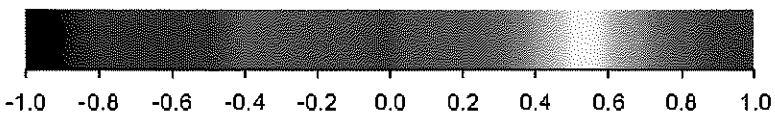
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7357

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	11.4
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max Unc^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	151.5	± 2.7 %
		Y	0.00	0.00	1.00		139.1	
		Z	0.00	0.00	1.00		158.4	
10010-CAA	SAR Validation (Square, 100ms, 10ms)	X	1.67	61.93	7.65	10.00	20.0	± 9.6 %
		Y	2.82	69.17	11.50		20.0	
		Z	1.68	62.20	7.72		20.0	
10011-CAB	UMTS-FDD (WCDMA)	X	0.91	67.36	14.64	0.00	150.0	± 9.6 %
		Y	1.03	67.52	15.32		150.0	
		Z	0.87	67.00	14.33		150.0	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.03	63.20	14.83	0.41	150.0	± 9.6 %
		Y	1.15	63.79	15.34		150.0	
		Z	1.01	63.27	14.81		150.0	
10013-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	4.63	66.39	16.96	1.46	150.0	± 9.6 %
		Y	4.87	66.69	17.19		150.0	
		Z	4.64	66.53	16.99		150.0	
10021-DAC	GSM-FDD (TDMA, GMSK)	X	3.67	70.27	12.79	9.39	50.0	± 9.6 %
		Y	100.00	116.17	27.83		50.0	
		Z	17.04	87.58	18.77		50.0	
10023-DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	3.48	69.40	12.45	9.57	50.0	± 9.6 %
		Y	100.00	115.39	27.52		50.0	
		Z	8.91	80.25	16.55		50.0	
10024-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	1.80	66.18	9.84	6.56	60.0	± 9.6 %
		Y	100.00	120.19	28.55		60.0	
		Z	100.00	103.30	20.82		60.0	
10025-DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	3.42	64.49	22.34	12.57	50.0	± 9.6 %
		Y	6.04	85.62	35.55		50.0	
		Z	3.44	65.04	22.85		50.0	
10026-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	6.25	83.47	29.08	9.56	60.0	± 9.6 %
		Y	9.24	95.88	35.47		60.0	
		Z	6.56	85.41	30.17		60.0	
10027-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	0.96	63.24	7.67	4.80	80.0	± 9.6 %
		Y	100.00	125.59	30.06		80.0	
		Z	100.00	100.14	18.62		80.0	
10028-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	0.48	60.36	5.50	3.55	100.0	± 9.6 %
		Y	100.00	132.37	32.13		100.0	
		Z	99.97	95.45	15.98		100.0	
10029-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	4.19	75.28	24.64	7.80	80.0	± 9.6 %
		Y	5.35	81.78	28.49		80.0	
		Z	4.26	76.21	25.31		80.0	
10030-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	1.09	63.09	7.76	5.30	70.0	± 9.6 %
		Y	100.00	120.14	28.06		70.0	
		Z	4.93	76.05	12.90		70.0	
10031-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	0.27	60.00	3.17	1.88	100.0	± 9.6 %
		Y	100.00	135.00	31.47		100.0	
		Z	0.26	60.00	3.07		100.0	

10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	27.08	314.20	3.36	1.17	100.0	± 9.6 %
		Y	100.00	149.06	35.68		100.0	
		Z	1.21	330.96	55.77		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	3.08	73.10	16.00	5.30	70.0	± 9.6 %
		Y	100.00	136.30	37.75		70.0	
		Z	7.37	86.92	21.69		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	1.25	65.91	11.39	1.88	100.0	± 9.6 %
		Y	5.27	87.77	22.72		100.0	
		Z	1.70	70.42	13.93		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	0.99	64.64	10.52	1.17	100.0	± 9.6 %
		Y	2.59	77.96	18.88		100.0	
		Z	1.19	67.26	12.19		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	3.48	74.91	16.77	5.30	70.0	± 9.6 %
		Y	100.00	136.90	38.02		70.0	
		Z	11.33	93.27	23.71		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	1.18	65.50	11.18	1.88	100.0	± 9.6 %
		Y	4.66	86.12	22.16		100.0	
		Z	1.56	69.56	13.55		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	1.00	64.92	10.78	1.17	100.0	± 9.6 %
		Y	2.61	78.41	19.18		100.0	
		Z	1.21	67.70	12.52		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	0.95	64.99	10.40	0.00	150.0	± 9.6 %
		Y	1.84	72.12	15.71		150.0	
		Z	1.02	65.84	10.98		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	1.77	64.37	9.09	7.78	50.0	± 9.6 %
		Y	100.00	113.16	25.71		50.0	
		Z	2.56	68.32	10.93		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.31	133.81	11.51	0.00	150.0	± 9.6 %
		Y	0.00	104.03	5.27		150.0	
		Z	0.33	142.49	0.98		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	4.01	66.51	12.74	13.80	25.0	± 9.6 %
		Y	100.00	110.91	26.95		25.0	
		Z	5.44	70.40	14.40		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	3.70	68.56	12.33	10.79	40.0	± 9.6 %
		Y	100.00	112.50	26.54		40.0	
		Z	5.22	72.87	14.17		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	6.09	76.95	17.81	9.03	50.0	± 9.6 %
		Y	100.00	128.62	35.43		50.0	
		Z	13.22	89.10	22.41		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	3.39	71.63	22.33	6.55	100.0	± 9.6 %
		Y	4.14	76.10	25.11		100.0	
		Z	3.42	72.27	22.83		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.03	63.98	15.22	0.61	110.0	± 9.6 %
		Y	1.18	64.90	16.05		110.0	
		Z	1.02	64.18	15.34		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	5.25	93.28	23.11	1.30	110.0	± 9.6 %
		Y	100.00	145.92	38.93		110.0	
		Z	39.44	123.36	31.22		110.0	

10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	1.80	74.31	19.24	2.04	110.0	± 9.6 %
		Y	3.02	83.93	24.56		110.0	
		Z	2.14	78.36	21.37		110.0	
10062-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.44	66.41	16.45	0.49	100.0	± 9.6 %
		Y	4.68	66.67	16.57		100.0	
		Z	4.45	66.51	16.42		100.0	
10063-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.45	66.48	16.52	0.72	100.0	± 9.6 %
		Y	4.69	66.78	16.69		100.0	
		Z	4.46	66.59	16.51		100.0	
10064-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	4.70	66.70	16.72	0.86	100.0	± 9.6 %
		Y	4.99	67.05	16.93		100.0	
		Z	4.72	66.83	16.73		100.0	
10065-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	4.56	66.53	16.77	1.21	100.0	± 9.6 %
		Y	4.85	66.96	17.05		100.0	
		Z	4.58	66.69	16.81		100.0	
10066-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	4.57	66.51	16.90	1.46	100.0	± 9.6 %
		Y	4.87	66.98	17.22		100.0	
		Z	4.60	66.69	16.96		100.0	
10067-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	4.86	66.77	17.36	2.04	100.0	± 9.6 %
		Y	5.15	67.13	17.68		100.0	
		Z	4.89	66.94	17.44		100.0	
10068-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	4.88	66.65	17.49	2.55	100.0	± 9.6 %
		Y	5.20	67.19	17.93		100.0	
		Z	4.91	66.87	17.60		100.0	
10069-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	4.95	66.72	17.70	2.67	100.0	± 9.6 %
		Y	5.28	67.17	18.11		100.0	
		Z	4.99	66.91	17.80		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	4.71	66.43	17.22	1.99	100.0	± 9.6 %
		Y	4.96	66.77	17.51		100.0	
		Z	4.73	66.59	17.28		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	4.67	66.65	17.37	2.30	100.0	± 9.6 %
		Y	4.94	67.10	17.75		100.0	
		Z	4.69	66.85	17.47		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	4.72	66.79	17.66	2.83	100.0	± 9.6 %
		Y	4.99	67.24	18.08		100.0	
		Z	4.75	67.01	17.79		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	4.72	66.70	17.78	3.30	100.0	± 9.6 %
		Y	4.95	67.09	18.23		100.0	
		Z	4.74	66.91	17.92		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	4.74	66.71	18.01	3.82	90.0	± 9.6 %
		Y	4.98	67.20	18.56		90.0	
		Z	4.76	66.94	18.18		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	4.77	66.58	18.17	4.15	90.0	± 9.6 %
		Y	4.98	66.93	18.66		90.0	
		Z	4.79	66.78	18.33		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	4.80	66.66	18.27	4.30	90.0	± 9.6 %
		Y	5.00	66.98	18.75		90.0	
		Z	4.82	66.86	18.43		90.0	

10081-CAB	CDMA2000 (1xRTT, RC3)	X	0.45	61.00	7.50	0.00	150.0	± 9.6 %
		Y	0.83	65.94	12.49		150.0	
		Z	0.46	61.34	7.83		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	0.68	60.00	3.10	4.77	80.0	± 9.6 %
		Y	0.78	61.11	4.54		80.0	
		Z	0.72	60.00	2.85		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	1.84	66.30	9.91	6.56	60.0	± 9.6 %
		Y	100.00	120.24	28.59		60.0	
		Z	100.00	103.44	20.90		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	1.71	67.90	15.28	0.00	150.0	± 9.6 %
		Y	1.82	67.70	15.69		150.0	
		Z	1.68	67.71	15.15		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.67	67.85	15.26	0.00	150.0	± 9.6 %
		Y	1.79	67.66	15.66		150.0	
		Z	1.64	67.65	15.11		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	6.29	83.56	29.10	9.56	60.0	± 9.6 %
		Y	9.34	96.14	35.56		60.0	
		Z	6.61	85.53	30.21		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	2.90	69.76	16.53	0.00	150.0	± 9.6 %
		Y	3.14	70.37	16.71		150.0	
		Z	2.89	69.82	16.39		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.04	67.08	15.83	0.00	150.0	± 9.6 %
		Y	3.24	67.51	15.94		150.0	
		Z	3.03	67.13	15.70		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.15	67.10	15.95	0.00	150.0	± 9.6 %
		Y	3.34	67.47	16.02		150.0	
		Z	3.13	67.15	15.83		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	4.81	72.04	18.88	3.98	65.0	± 9.6 %
		Y	6.41	77.25	21.56		65.0	
		Z	5.14	73.67	19.73		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	5.09	70.84	19.13	3.98	65.0	± 9.6 %
		Y	5.94	73.69	20.83		65.0	
		Z	5.16	71.44	19.51		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	4.78	69.37	18.75	3.98	65.0	± 9.6 %
		Y	5.83	73.15	20.89		65.0	
		Z	4.90	70.20	19.25		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	2.51	69.24	16.41	0.00	150.0	± 9.6 %
		Y	2.74	69.60	16.54		150.0	
		Z	2.49	69.21	16.24		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	2.68	67.06	15.67	0.00	150.0	± 9.6 %
		Y	2.89	67.36	15.84		150.0	
		Z	2.67	67.07	15.55		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	1.99	68.49	15.84	0.00	150.0	± 9.6 %
		Y	2.22	68.71	16.15		150.0	
		Z	1.98	68.38	15.68		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.41	68.19	15.80	0.00	150.0	± 9.6 %
		Y	2.61	68.17	16.11		150.0	
		Z	2.40	68.17	15.74		150.0	

10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	2.81	67.12	15.76	0.00	150.0	± 9.6 %
		Y	3.02	67.35	15.89		150.0	
		Z	2.80	67.12	15.64		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.56	68.40	15.97	0.00	150.0	± 9.6 %
		Y	2.76	68.30	16.24		150.0	
		Z	2.55	68.39	15.92		150.0	
10114-CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	4.95	66.96	16.54	0.00	150.0	± 9.6 %
		Y	5.12	67.17	16.44		150.0	
		Z	4.92	66.97	16.39		150.0	
10115-CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.23	67.14	16.63	0.00	150.0	± 9.6 %
		Y	5.41	67.31	16.52		150.0	
		Z	5.18	67.06	16.45		150.0	
10116-CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.04	67.18	16.57	0.00	150.0	± 9.6 %
		Y	5.22	67.37	16.47		150.0	
		Z	5.01	67.18	16.42		150.0	
10117-CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	4.94	66.92	16.53	0.00	150.0	± 9.6 %
		Y	5.09	67.03	16.39		150.0	
		Z	4.91	66.91	16.38		150.0	
10118-CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.34	67.47	16.81	0.00	150.0	± 9.6 %
		Y	5.50	67.52	16.63		150.0	
		Z	5.27	67.32	16.58		150.0	
10119-CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	5.06	67.24	16.61	0.00	150.0	± 9.6 %
		Y	5.20	67.31	16.45		150.0	
		Z	5.01	67.18	16.43		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.17	67.11	15.85	0.00	150.0	± 9.6 %
		Y	3.38	67.48	15.94		150.0	
		Z	3.16	67.15	15.73		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.30	67.28	16.06	0.00	150.0	± 9.6 %
		Y	3.50	67.57	16.11		150.0	
		Z	3.29	67.32	15.94		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	1.73	68.17	14.94	0.00	150.0	± 9.6 %
		Y	2.00	68.71	15.82		150.0	
		Z	1.72	68.11	14.89		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.15	68.15	14.63	0.00	150.0	± 9.6 %
		Y	2.47	68.91	15.82		150.0	
		Z	2.17	68.32	14.76		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	1.86	65.26	12.63	0.00	150.0	± 9.6 %
		Y	2.24	66.62	14.22		150.0	
		Z	1.88	65.43	12.77		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	0.67	60.16	6.91	0.00	150.0	± 9.6 %
		Y	1.22	65.11	11.80		150.0	
		Z	0.71	60.61	7.39		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	0.95	60.06	6.44	0.00	150.0	± 9.6 %
		Y	1.65	64.56	10.76		150.0	
		Z	1.07	61.07	7.44		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	0.99	60.33	6.68	0.00	150.0	± 9.6 %
		Y	1.85	65.94	11.59		150.0	
		Z	1.13	61.55	7.80		150.0	

10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	2.69	67.13	15.72	0.00	150.0	± 9.6 %
		Y	2.90	67.42	15.88		150.0	
		Z	2.68	67.14	15.60		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	2.82	67.19	15.80	0.00	150.0	± 9.6 %
		Y	3.03	67.40	15.93		150.0	
		Z	2.81	67.19	15.69		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	5.01	74.56	19.93	3.98	65.0	± 9.6 %
		Y	6.65	79.71	22.70		65.0	
		Z	5.36	76.27	20.86		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	4.60	70.61	18.55	3.98	65.0	± 9.6 %
		Y	5.50	73.80	20.64		65.0	
		Z	4.69	71.33	19.06		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	4.95	71.72	19.46	3.98	65.0	± 9.6 %
		Y	5.84	74.66	21.37		65.0	
		Z	5.05	72.49	19.99		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.04	68.92	16.11	0.00	150.0	± 9.6 %
		Y	2.27	69.12	16.41		150.0	
		Z	2.03	68.83	15.96		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.41	68.23	15.84	0.00	150.0	± 9.6 %
		Y	2.61	68.18	16.13		150.0	
		Z	2.40	68.21	15.77		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	1.51	67.60	14.13	0.00	150.0	± 9.6 %
		Y	1.84	68.81	15.61		150.0	
		Z	1.52	67.67	14.19		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	1.63	65.15	12.07	0.00	150.0	± 9.6 %
		Y	2.08	67.20	14.25		150.0	
		Z	1.66	65.43	12.31		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.57	68.50	16.04	0.00	150.0	± 9.6 %
		Y	2.77	68.36	16.29		150.0	
		Z	2.56	68.48	15.98		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	1.70	65.38	12.24	0.00	150.0	± 9.6 %
		Y	2.19	67.65	14.54		150.0	
		Z	1.74	65.76	12.53		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	2.62	68.99	16.41	0.00	150.0	± 9.6 %
		Y	2.74	68.65	16.32		150.0	
		Z	2.56	68.70	16.16		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	2.71	67.15	15.66	0.00	150.0	± 9.6 %
		Y	2.92	67.34	15.86		150.0	
		Z	2.70	67.15	15.57		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	2.82	67.38	15.82	0.00	150.0	± 9.6 %
		Y	3.03	67.49	15.97		150.0	
		Z	2.81	67.37	15.72		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	3.14	68.82	18.96	3.01	150.0	± 9.6 %
		Y	3.40	68.62	18.58		150.0	
		Z	3.24	69.38	19.21		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	3.68	71.26	19.14	3.01	150.0	± 9.6 %
		Y	4.01	70.93	18.84		150.0	
		Z	3.86	71.98	19.46		150.0	

10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	4.20	74.21	20.88	3.01	150.0	± 9.6 %
		Y	4.39	72.91	20.06		150.0	
		Z	4.45	75.16	21.28		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	2.49	66.95	18.11	3.01	150.0	± 9.6 %
		Y	2.73	67.59	18.14		150.0	
		Z	2.58	67.69	18.47		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	3.17	72.06	20.27	3.01	150.0	± 9.6 %
		Y	3.45	72.20	20.01		150.0	
		Z	3.40	73.44	20.89		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	2.61	67.98	17.29	3.01	150.0	± 9.6 %
		Y	2.93	68.85	17.54		150.0	
		Z	2.74	68.83	17.69		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	3.59	76.79	22.90	6.02	65.0	± 9.6 %
		Y	7.70	92.12	29.64		65.0	
		Z	4.50	82.04	25.61		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	5.40	81.69	22.80	6.02	65.0	± 9.6 %
		Y	14.31	100.07	30.15		65.0	
		Z	8.60	91.21	26.84		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	3.41	73.68	19.23	6.02	65.0	± 9.6 %
		Y	12.55	96.17	28.30		65.0	
		Z	5.50	82.57	23.30		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	2.47	66.66	17.85	3.01	150.0	± 9.6 %
		Y	2.70	67.34	17.92		150.0	
		Z	2.55	67.36	18.19		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	3.18	72.09	20.28	3.01	150.0	± 9.6 %
		Y	3.46	72.22	20.02		150.0	
		Z	3.41	73.46	20.90		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	2.48	66.79	17.93	3.01	150.0	± 9.6 %
		Y	2.72	67.46	18.00		150.0	
		Z	2.57	67.51	18.28		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	3.15	71.92	20.18	3.01	150.0	± 9.6 %
		Y	3.43	72.05	19.92		150.0	
		Z	3.38	73.25	20.78		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	2.85	69.85	18.61	3.01	150.0	± 9.6 %
		Y	3.17	70.44	18.65		150.0	
		Z	3.03	70.94	19.12		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	2.61	67.94	17.25	3.01	150.0	± 9.6 %
		Y	2.92	68.79	17.50		150.0	
		Z	2.74	68.78	17.65		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	2.48	66.77	17.93	3.01	150.0	± 9.6 %
		Y	2.71	67.45	18.00		150.0	
		Z	2.56	67.49	18.28		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	3.15	71.89	20.17	3.01	150.0	± 9.6 %
		Y	3.42	72.03	19.91		150.0	
		Z	3.37	73.22	20.77		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	2.60	67.92	17.24	3.01	150.0	± 9.6 %
		Y	2.92	68.77	17.49		150.0	
		Z	2.73	68.75	17.64		150.0	

10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	2.49	66.81	17.95	3.01	150.0	± 9.6 %
		Y	2.72	67.49	18.02		150.0	
		Z	2.57	67.53	18.30		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	3.16	71.97	20.21	3.01	150.0	± 9.6 %
		Y	3.44	72.09	19.94		150.0	
		Z	3.39	73.31	20.81		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	2.62	67.98	17.28	3.01	150.0	± 9.6 %
		Y	2.93	68.83	17.52		150.0	
		Z	2.74	68.82	17.67		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	2.50	66.88	18.03	3.01	150.0	± 9.6 %
		Y	2.73	67.53	18.08		150.0	
		Z	2.58	67.61	18.38		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	3.26	72.60	20.60	3.01	150.0	± 9.6 %
		Y	3.53	72.62	20.27		150.0	
		Z	3.51	74.04	21.24		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	2.67	68.35	17.55	3.01	150.0	± 9.6 %
		Y	2.99	69.18	17.77		150.0	
		Z	2.80	69.24	17.97		150.0	
10193-CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.32	66.50	16.16	0.00	150.0	± 9.6 %
		Y	4.52	66.59	16.14		150.0	
		Z	4.31	66.50	16.05		150.0	
10194-CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.47	66.75	16.31	0.00	150.0	± 9.6 %
		Y	4.69	66.90	16.27		150.0	
		Z	4.46	66.77	16.19		150.0	
10195-CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.51	66.78	16.33	0.00	150.0	± 9.6 %
		Y	4.73	66.93	16.28		150.0	
		Z	4.50	66.80	16.21		150.0	
10196-CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.31	66.51	16.16	0.00	150.0	± 9.6 %
		Y	4.52	66.65	16.16		150.0	
		Z	4.30	66.52	16.05		150.0	
10197-CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.48	66.77	16.32	0.00	150.0	± 9.6 %
		Y	4.70	66.92	16.28		150.0	
		Z	4.47	66.78	16.20		150.0	
10198-CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.50	66.79	16.33	0.00	150.0	± 9.6 %
		Y	4.73	66.95	16.30		150.0	
		Z	4.49	66.81	16.22		150.0	
10219-CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.26	66.54	16.13	0.00	150.0	± 9.6 %
		Y	4.47	66.66	16.12		150.0	
		Z	4.25	66.55	16.01		150.0	
10220-CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.47	66.73	16.30	0.00	150.0	± 9.6 %
		Y	4.70	66.89	16.27		150.0	
		Z	4.46	66.74	16.19		150.0	
10221-CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.51	66.73	16.32	0.00	150.0	± 9.6 %
		Y	4.74	66.87	16.28		150.0	
		Z	4.51	66.74	16.20		150.0	
10222-CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	4.91	66.89	16.51	0.00	150.0	± 9.6 %
		Y	5.06	67.05	16.39		150.0	
		Z	4.88	66.88	16.36		150.0	

10223-CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.21	67.18	16.67	0.00	150.0	± 9.6 %
		Y	5.37	67.24	16.51		150.0	
		Z	5.17	67.14	16.51		150.0	
10224-CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	4.95	66.99	16.48	0.00	150.0	± 9.6 %
		Y	5.11	67.16	16.37		150.0	
		Z	4.91	66.98	16.33		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	2.57	65.87	14.82	0.00	150.0	± 9.6 %
		Y	2.79	66.10	15.32		150.0	
		Z	2.57	65.89	14.81		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	5.70	82.73	23.27	6.02	65.0	± 9.6 %
		Y	15.45	101.64	30.73		65.0	
		Z	9.36	92.89	27.50		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	5.51	81.11	22.01	6.02	65.0	± 9.6 %
		Y	15.16	99.52	29.37		65.0	
		Z	9.33	91.39	26.29		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	4.37	80.87	24.58	6.02	65.0	± 9.6 %
		Y	8.06	93.39	30.16		65.0	
		Z	5.51	86.54	27.40		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	5.43	81.78	22.83	6.02	65.0	± 9.6 %
		Y	14.43	100.19	30.19		65.0	
		Z	8.67	91.34	26.89		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	5.22	80.18	21.60	6.02	65.0	± 9.6 %
		Y	14.07	98.09	28.85		65.0	
		Z	8.56	89.82	25.70		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	4.21	80.08	24.19	6.02	65.0	± 9.6 %
		Y	7.72	92.42	29.75		65.0	
		Z	5.25	85.50	26.93		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	5.42	81.76	22.83	6.02	65.0	± 9.6 %
		Y	14.40	100.18	30.19		65.0	
		Z	8.65	91.31	26.89		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	5.21	80.16	21.59	6.02	65.0	± 9.6 %
		Y	14.03	98.05	28.84		65.0	
		Z	8.53	89.78	25.69		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	4.09	79.41	23.80	6.02	65.0	± 9.6 %
		Y	7.46	91.57	29.34		65.0	
		Z	5.06	84.64	26.49		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	5.43	81.79	22.84	6.02	65.0	± 9.6 %
		Y	14.42	100.22	30.20		65.0	
		Z	8.66	91.36	26.90		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	5.25	80.28	21.63	6.02	65.0	± 9.6 %
		Y	14.26	98.30	28.91		65.0	
		Z	8.64	89.96	25.74		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	4.21	80.11	24.20	6.02	65.0	± 9.6 %
		Y	7.73	92.49	29.78		65.0	
		Z	5.25	85.54	26.95		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	5.41	81.74	22.82	6.02	65.0	± 9.6 %
		Y	14.37	100.15	30.18		65.0	
		Z	8.63	91.28	26.88		65.0	

10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	5.19	80.13	21.58	6.02	65.0	± 9.6 %
		Y	13.97	98.01	28.83		65.0	
		Z	8.50	89.73	25.67		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	4.20	80.08	24.19	6.02	65.0	± 9.6 %
		Y	7.71	92.44	29.76		65.0	
		Z	5.24	85.50	26.94		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	6.28	77.75	23.74	6.98	65.0	± 9.6 %
		Y	7.17	79.66	25.20		65.0	
		Z	6.62	79.11	24.64		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	5.61	75.51	22.71	6.98	65.0	± 9.6 %
		Y	7.01	79.22	24.95		65.0	
		Z	6.04	77.21	23.74		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	4.77	72.80	22.43	6.98	65.0	± 9.6 %
		Y	5.72	75.84	24.40		65.0	
		Z	4.99	73.88	23.19		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	3.08	66.71	12.88	3.98	65.0	± 9.6 %
		Y	5.65	76.51	19.16		65.0	
		Z	3.79	70.31	15.20		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	3.05	66.35	12.65	3.98	65.0	± 9.6 %
		Y	5.47	75.72	18.77		65.0	
		Z	3.68	69.62	14.83		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	2.73	68.50	14.10	3.98	65.0	± 9.6 %
		Y	6.90	84.10	22.59		65.0	
		Z	3.38	72.30	16.31		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	3.32	68.16	14.83	3.98	65.0	± 9.6 %
		Y	5.00	75.29	19.75		65.0	
		Z	3.63	70.11	16.18		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	3.35	67.83	14.68	3.98	65.0	± 9.6 %
		Y	4.95	74.49	19.36		65.0	
		Z	3.62	69.55	15.90		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	3.90	73.79	17.79	3.98	65.0	± 9.6 %
		Y	7.87	86.63	24.46		65.0	
		Z	4.87	78.17	20.05		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	4.46	72.43	19.10	3.98	65.0	± 9.6 %
		Y	5.61	76.63	21.92		65.0	
		Z	4.70	73.89	20.05		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	4.27	70.46	17.79	3.98	65.0	± 9.6 %
		Y	5.36	74.41	20.57		65.0	
		Z	4.43	71.53	18.56		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	4.80	76.28	20.36	3.98	65.0	± 9.6 %
		Y	7.12	83.67	24.31		65.0	
		Z	5.40	79.04	21.81		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	4.54	70.25	18.29	3.98	65.0	± 9.6 %
		Y	5.37	73.18	20.35		65.0	
		Z	4.62	70.94	18.80		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	4.85	71.22	19.07	3.98	65.0	± 9.6 %
		Y	5.69	74.00	21.02		65.0	
		Z	4.94	71.96	19.60		65.0	

10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	4.83	74.07	19.88	3.98	65.0	± 9.6 %
		Y	6.20	78.60	22.49		65.0	
		Z	5.10	75.57	20.75		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	2.29	63.25	9.85	3.98	65.0	± 9.6 %
		Y	4.33	72.34	16.30		65.0	
		Z	2.61	65.28	11.48		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	2.28	62.96	9.60	3.98	65.0	± 9.6 %
		Y	4.16	71.35	15.76		65.0	
		Z	2.56	64.75	11.10		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	1.96	64.07	10.75	3.98	65.0	± 9.6 %
		Y	4.97	78.32	19.50		65.0	
		Z	2.22	66.21	12.33		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	3.77	69.86	16.44	3.98	65.0	± 9.6 %
		Y	5.26	75.82	20.54		65.0	
		Z	4.07	71.70	17.67		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	3.81	69.66	16.35	3.98	65.0	± 9.6 %
		Y	5.26	75.42	20.36		65.0	
		Z	4.10	71.41	17.53		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	4.13	74.31	18.63	3.98	65.0	± 9.6 %
		Y	6.91	83.89	23.89		65.0	
		Z	4.85	77.73	20.46		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	4.45	72.36	19.04	3.98	65.0	± 9.6 %
		Y	5.60	76.58	21.88		65.0	
		Z	4.68	73.81	19.99		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	4.26	70.44	17.79	3.98	65.0	± 9.6 %
		Y	5.34	74.38	20.56		65.0	
		Z	4.42	71.51	18.55		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	4.75	76.08	20.25	3.98	65.0	± 9.6 %
		Y	7.04	83.44	24.20		65.0	
		Z	5.33	78.79	21.68		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	4.60	70.61	18.56	3.98	65.0	± 9.6 %
		Y	5.50	73.80	20.64		65.0	
		Z	4.69	71.34	19.07		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	4.95	71.71	19.45	3.98	65.0	± 9.6 %
		Y	5.83	74.64	21.36		65.0	
		Z	5.05	72.48	19.97		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	5.01	74.52	19.91	3.98	65.0	± 9.6 %
		Y	6.63	79.66	22.68		65.0	
		Z	5.35	76.22	20.84		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	5.27	70.89	19.25	3.98	65.0	± 9.6 %
		Y	6.07	73.43	20.81		65.0	
		Z	5.33	71.43	19.60		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	5.29	70.58	19.15	3.98	65.0	± 9.6 %
		Y	6.04	72.94	20.64		65.0	
		Z	5.34	71.06	19.47		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	5.17	72.58	19.33	3.98	65.0	± 9.6 %
		Y	6.28	76.09	21.29		65.0	
		Z	5.35	73.62	19.93		65.0	

10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	X	2.41	66.43	14.82	0.00	150.0	± 9.6 %
		Y	2.58	66.48	15.24		150.0	
		Z	2.39	66.38	14.76		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	1.45	67.76	15.04	0.00	150.0	± 9.6 %
		Y	1.61	67.98	15.58		150.0	
		Z	1.42	67.56	14.85		150.0	
10277-CAA	PHS (QPSK)	X	1.74	59.75	5.31	9.03	50.0	± 9.6 %
		Y	1.81	61.19	6.71		50.0	
		Z	1.73	59.88	5.41		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	2.71	64.14	10.09	9.03	50.0	± 9.6 %
		Y	10.58	86.01	20.92		50.0	
		Z	2.95	65.66	11.11		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	2.77	64.34	10.25	9.03	50.0	± 9.6 %
		Y	10.86	86.33	21.10		50.0	
		Z	3.03	65.92	11.30		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	0.78	62.91	9.04	0.00	150.0	± 9.6 %
		Y	1.44	68.67	13.91		150.0	
		Z	0.82	63.50	9.52		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	0.44	60.90	7.41	0.00	150.0	± 9.6 %
		Y	0.81	65.70	12.35		150.0	
		Z	0.46	61.22	7.73		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	0.52	62.90	8.81	0.00	150.0	± 9.6 %
		Y	1.08	70.34	14.96		150.0	
		Z	0.54	63.47	9.26		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	0.85	67.98	11.75	0.00	150.0	± 9.6 %
		Y	1.81	77.73	18.47		150.0	
		Z	0.93	69.19	12.44		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	10.59	83.36	20.91	9.03	50.0	± 9.6 %
		Y	13.63	95.28	28.15		50.0	
		Z	12.33	87.48	22.99		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	2.52	69.36	16.49	0.00	150.0	± 9.6 %
		Y	2.75	69.70	16.61		150.0	
		Z	2.51	69.33	16.32		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	1.02	63.71	10.46	0.00	150.0	± 9.6 %
		Y	1.56	67.65	14.07		150.0	
		Z	1.06	64.21	10.86		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	1.41	63.10	9.49	0.00	150.0	± 9.6 %
		Y	2.20	67.48	13.20		150.0	
		Z	1.66	65.04	10.89		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	1.19	60.99	7.64	0.00	150.0	± 9.6 %
		Y	1.75	63.96	10.73		150.0	
		Z	1.30	61.89	8.49		150.0	
10301-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	4.40	65.21	17.25	4.17	50.0	± 9.6 %
		Y	4.79	65.64	17.57		50.0	
		Z	4.51	65.62	17.36		50.0	
10302-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	4.89	66.01	18.10	4.96	50.0	± 9.6 %
		Y	5.23	66.10	18.21		50.0	
		Z	4.90	65.76	17.79		50.0	

10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	4.65	65.68	17.92	4.96	50.0	± 9.6 %
		Y	4.97	65.72	18.04		50.0	
		Z	4.66	65.38	17.59		50.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	4.43	65.21	17.19	4.17	50.0	± 9.6 %
		Y	4.78	65.59	17.51		50.0	
		Z	4.47	65.30	17.12		50.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	4.15	67.54	18.96	6.02	35.0	± 9.6 %
		Y	4.30	67.06	19.45		35.0	
		Z	4.22	67.78	19.08		35.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	4.43	66.43	18.72	6.02	35.0	± 9.6 %
		Y	4.66	66.30	19.12		35.0	
		Z	4.49	66.64	18.78		35.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	4.32	66.52	18.64	6.02	35.0	± 9.6 %
		Y	4.55	66.42	19.07		35.0	
		Z	4.38	66.74	18.71		35.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	4.30	66.75	18.79	6.02	35.0	± 9.6 %
		Y	4.52	66.60	19.20		35.0	
		Z	4.37	66.98	18.86		35.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	4.46	66.55	18.83	6.02	35.0	± 9.6 %
		Y	4.72	66.54	19.28		35.0	
		Z	4.52	66.77	18.90		35.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	4.39	66.51	18.71	6.02	35.0	± 9.6 %
		Y	4.60	66.34	19.08		35.0	
		Z	4.45	66.72	18.77		35.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	2.88	68.46	16.13	0.00	150.0	± 9.6 %
		Y	3.11	68.97	16.25		150.0	
		Z	2.86	68.50	15.98		150.0	
10313-AAA	iDEN 1:3	X	1.87	66.02	12.37	6.99	70.0	± 9.6 %
		Y	5.52	82.21	20.17		70.0	
		Z	2.06	67.90	13.38		70.0	
10314-AAA	iDEN 1:6	X	2.66	70.48	16.99	10.00	30.0	± 9.6 %
		Y	9.77	95.91	27.98		30.0	
		Z	4.14	77.84	20.07		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	0.95	63.27	14.86	0.17	150.0	± 9.6 %
		Y	1.06	63.68	15.21		150.0	
		Z	0.93	63.28	14.78		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.35	66.42	16.23	0.17	150.0	± 9.6 %
		Y	4.58	66.66	16.32		150.0	
		Z	4.34	66.49	16.17		150.0	
10317-AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.35	66.42	16.23	0.17	150.0	± 9.6 %
		Y	4.58	66.66	16.32		150.0	
		Z	4.34	66.49	16.17		150.0	
10400-AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.44	66.78	16.30	0.00	150.0	± 9.6 %
		Y	4.68	66.96	16.27		150.0	
		Z	4.43	66.80	16.17		150.0	
10401-AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.15	66.76	16.42	0.00	150.0	± 9.6 %
		Y	5.39	67.16	16.44		150.0	
		Z	5.17	66.92	16.36		150.0	

10402-AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.46	67.17	16.51	0.00	150.0	± 9.6 %
		Y	5.63	67.44	16.43		150.0	
		Z	5.43	67.19	16.37		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	0.78	62.91	9.04	0.00	115.0	± 9.6 %
		Y	1.44	68.67	13.91		115.0	
		Z	0.82	63.50	9.52		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	0.78	62.91	9.04	0.00	115.0	± 9.6 %
		Y	1.44	68.67	13.91		115.0	
		Z	0.82	63.50	9.52		115.0	
10406-AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	100.00	119.25	28.40	0.00	100.0	± 9.6 %
		Y	9.50	91.59	22.98		100.0	
		Z	100.00	122.00	29.77		100.0	
10410-AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	X	3.12	77.42	16.90	3.23	80.0	± 9.6 %
		Y	100.00	127.40	32.46		80.0	
		Z	100.00	125.01	30.73		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	0.90	62.74	14.48	0.00	150.0	± 9.6 %
		Y	1.00	62.96	14.62		150.0	
		Z	0.88	62.66	14.28		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.32	66.51	16.25	0.00	150.0	± 9.6 %
		Y	4.52	66.62	16.21		150.0	
		Z	4.30	66.52	16.13		150.0	
10417-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.32	66.51	16.25	0.00	150.0	± 9.6 %
		Y	4.52	66.62	16.21		150.0	
		Z	4.30	66.52	16.13		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	X	4.31	66.71	16.30	0.00	150.0	± 9.6 %
		Y	4.51	66.79	16.23		150.0	
		Z	4.30	66.71	16.18		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	X	4.33	66.64	16.29	0.00	150.0	± 9.6 %
		Y	4.53	66.73	16.23		150.0	
		Z	4.32	66.65	16.17		150.0	
10422-AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.44	66.62	16.30	0.00	150.0	± 9.6 %
		Y	4.65	66.73	16.25		150.0	
		Z	4.43	66.63	16.18		150.0	
10423-AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.57	66.89	16.39	0.00	150.0	± 9.6 %
		Y	4.81	67.05	16.36		150.0	
		Z	4.56	66.90	16.28		150.0	
10424-AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.50	66.84	16.37	0.00	150.0	± 9.6 %
		Y	4.73	67.00	16.33		150.0	
		Z	4.49	66.86	16.25		150.0	
10425-AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.17	67.18	16.65	0.00	150.0	± 9.6 %
		Y	5.33	67.30	16.51		150.0	
		Z	5.13	67.14	16.48		150.0	
10426-AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.23	67.40	16.76	0.00	150.0	± 9.6 %
		Y	5.34	67.33	16.52		150.0	
		Z	5.16	67.27	16.54		150.0	

10427-AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.16	67.07	16.58	0.00	150.0	± 9.6 %
		Y	5.35	67.30	16.51		150.0	
		Z	5.13	67.07	16.44		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.20	72.13	18.43	0.00	150.0	± 9.6 %
		Y	4.22	70.70	18.10		150.0	
		Z	4.22	72.19	18.46		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	3.93	67.10	16.09	0.00	150.0	± 9.6 %
		Y	4.20	67.18	16.20		150.0	
		Z	3.93	67.10	16.01		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.26	66.93	16.28	0.00	150.0	± 9.6 %
		Y	4.50	67.05	16.28		150.0	
		Z	4.25	66.94	16.17		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.52	66.87	16.39	0.00	150.0	± 9.6 %
		Y	4.75	67.03	16.35		150.0	
		Z	4.51	66.89	16.27		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.28	72.84	18.10	0.00	150.0	± 9.6 %
		Y	4.33	71.56	18.07		150.0	
		Z	4.34	73.06	18.24		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.96	76.73	16.60	3.23	80.0	± 9.6 %
		Y	100.00	127.17	32.36		80.0	
		Z	100.00	124.69	30.58		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.15	66.77	14.81	0.00	150.0	± 9.6 %
		Y	3.49	67.18	15.50		150.0	
		Z	3.17	66.84	14.85		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	X	3.79	66.88	15.96	0.00	150.0	± 9.6 %
		Y	4.04	66.96	16.06		150.0	
		Z	3.79	66.88	15.87		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	X	4.09	66.75	16.17	0.00	150.0	± 9.6 %
		Y	4.31	66.88	16.18		150.0	
		Z	4.08	66.77	16.07		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.31	66.64	16.24	0.00	150.0	± 9.6 %
		Y	4.51	66.80	16.21		150.0	
		Z	4.30	66.66	16.12		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	2.94	66.45	13.98	0.00	150.0	± 9.6 %
		Y	3.38	67.33	15.10		150.0	
		Z	2.98	66.61	14.10		150.0	
10456-AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.17	67.89	16.91	0.00	150.0	± 9.6 %
		Y	6.20	67.84	16.66		150.0	
		Z	6.10	67.86	16.74		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.65	65.21	15.97	0.00	150.0	± 9.6 %
		Y	3.78	65.27	15.92		150.0	
		Z	3.63	65.21	15.85		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	3.63	70.67	16.50	0.00	150.0	± 9.6 %
		Y	3.97	70.83	17.45		150.0	
		Z	3.75	71.23	16.87		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	4.91	69.28	18.19	0.00	150.0	± 9.6 %
		Y	5.06	68.34	18.09		150.0	
		Z	4.97	69.44	18.31		150.0	

10460-AAA	UMTS-FDD (WCDMA, AMR)	X	0.82	68.91	15.77	0.00	150.0	± 9.6 %
		Y	0.90	68.29	16.15		150.0	
		Z	0.77	68.38	15.37		150.0	
10461-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.32	75.39	17.14	3.29	80.0	± 9.6 %
		Y	100.00	131.59	34.49		80.0	
		Z	100.00	129.59	32.92		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.76	60.00	7.09	3.23	80.0	± 9.6 %
		Y	4.63	77.57	16.00		80.0	
		Z	0.74	60.00	7.79		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.79	60.00	6.50	3.23	80.0	± 9.6 %
		Y	1.49	65.34	10.90		80.0	
		Z	0.76	60.00	7.16		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.48	69.57	14.21	3.23	80.0	± 9.6 %
		Y	100.00	128.72	32.98		80.0	
		Z	100.00	125.35	30.81		80.0	
10465-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.76	60.00	7.02	3.23	80.0	± 9.6 %
		Y	2.92	72.75	14.31		80.0	
		Z	0.74	60.00	7.72		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.79	60.00	6.46	3.23	80.0	± 9.6 %
		Y	1.30	63.97	10.25		80.0	
		Z	0.76	60.00	7.11		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.57	70.35	14.56	3.23	80.0	± 9.6 %
		Y	100.00	129.06	33.13		80.0	
		Z	100.00	125.82	31.02		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.76	60.00	7.04	3.23	80.0	± 9.6 %
		Y	3.25	73.90	14.73		80.0	
		Z	0.74	60.00	7.74		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.79	60.00	6.46	3.23	80.0	± 9.6 %
		Y	1.30	64.00	10.26		80.0	
		Z	0.76	60.00	7.11		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.56	70.33	14.55	3.23	80.0	± 9.6 %
		Y	100.00	129.11	33.14		80.0	
		Z	100.00	125.84	31.01		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.76	60.00	7.03	3.23	80.0	± 9.6 %
		Y	3.21	73.75	14.66		80.0	
		Z	0.74	60.00	7.73		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.79	60.00	6.44	3.23	80.0	± 9.6 %
		Y	1.29	63.92	10.21		80.0	
		Z	0.76	60.00	7.09		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.56	70.28	14.52	3.23	80.0	± 9.6 %
		Y	100.00	129.06	33.12		80.0	
		Z	100.00	125.78	30.99		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.76	60.00	7.02	3.23	80.0	± 9.6 %
		Y	3.17	73.64	14.62		80.0	
		Z	0.74	60.00	7.73		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.78	60.00	6.45	3.23	80.0	± 9.6 %
		Y	1.29	63.89	10.20		80.0	
		Z	0.76	60.00	7.09		80.0	

10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.76	60.00	7.00	3.23	80.0	± 9.6 %
		Y	2.91	72.72	14.27		80.0	
		Z	0.74	60.00	7.70		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.79	60.00	6.43	3.23	80.0	± 9.6 %
		Y	1.28	63.82	10.16		80.0	
		Z	0.76	60.00	7.08		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.36	78.87	19.25	3.23	80.0	± 9.6 %
		Y	6.72	85.93	23.37		80.0	
		Z	31.53	108.71	28.80		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.01	65.44	11.92	3.23	80.0	± 9.6 %
		Y	7.23	81.86	20.03		80.0	
		Z	6.32	79.43	17.87		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.64	62.93	10.36	3.23	80.0	± 9.6 %
		Y	5.72	78.02	18.32		80.0	
		Z	3.41	71.49	14.62		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.29	62.41	10.80	2.23	80.0	± 9.6 %
		Y	3.64	76.21	18.93		80.0	
		Z	1.66	65.83	12.91		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.52	61.14	9.55	2.23	80.0	± 9.6 %
		Y	4.09	73.43	17.03		80.0	
		Z	2.32	66.35	12.70		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.52	60.89	9.42	2.23	80.0	± 9.6 %
		Y	3.80	72.18	16.53		80.0	
		Z	2.19	65.41	12.27		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.96	67.14	14.58	2.23	80.0	± 9.6 %
		Y	3.64	76.20	19.95		80.0	
		Z	2.47	70.93	16.63		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.93	63.65	12.21	2.23	80.0	± 9.6 %
		Y	3.34	71.00	17.20		80.0	
		Z	2.25	65.99	13.71		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.95	63.41	12.07	2.23	80.0	± 9.6 %
		Y	3.31	70.45	16.94		80.0	
		Z	2.25	65.61	13.50		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.57	68.84	16.72	2.23	80.0	± 9.6 %
		Y	3.64	73.87	19.67		80.0	
		Z	2.88	71.05	17.92		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.71	66.42	15.54	2.23	80.0	± 9.6 %
		Y	3.41	69.51	17.78		80.0	
		Z	2.89	67.77	16.40		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.80	66.35	15.53	2.23	80.0	± 9.6 %
		Y	3.50	69.28	17.68		80.0	
		Z	2.97	67.63	16.34		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.93	68.13	16.75	2.23	80.0	± 9.6 %
		Y	3.79	71.78	18.88		80.0	
		Z	3.14	69.61	17.57		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.14	66.26	16.05	2.23	80.0	± 9.6 %
		Y	3.72	68.46	17.58		80.0	
		Z	3.26	67.14	16.60		80.0	

10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.20	66.19	16.02	2.23	80.0	± 9.6 %
		Y	3.78	68.30	17.52		80.0	
		Z	3.32	67.03	16.55		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.09	69.16	17.09	2.23	80.0	± 9.6 %
		Y	4.18	73.66	19.49		80.0	
		Z	3.38	70.96	18.01		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.16	66.52	16.26	2.23	80.0	± 9.6 %
		Y	3.75	68.86	17.79		80.0	
		Z	3.28	67.44	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	3.25	66.39	16.25	2.23	80.0	± 9.6 %
		Y	3.82	68.54	17.67		80.0	
		Z	3.36	67.23	16.76		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	0.98	60.00	8.08	2.23	80.0	± 9.6 %
		Y	2.67	71.65	16.05		80.0	
		Z	0.96	60.00	8.56		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.18	60.00	7.01	2.23	80.0	± 9.6 %
		Y	1.73	63.28	11.10		80.0	
		Z	1.15	60.00	7.42		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.20	60.00	6.87	2.23	80.0	± 9.6 %
		Y	1.65	62.50	10.55		80.0	
		Z	1.17	60.00	7.27		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.22	67.95	15.51	2.23	80.0	± 9.6 %
		Y	3.54	74.72	19.65		80.0	
		Z	2.63	70.95	17.16		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.29	65.10	13.66	2.23	80.0	± 9.6 %
		Y	3.38	70.39	17.41		80.0	
		Z	2.58	67.13	14.94		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.32	64.94	13.52	2.23	80.0	± 9.6 %
		Y	3.43	70.21	17.27		80.0	
		Z	2.61	66.92	14.77		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.54	68.66	16.62	2.23	80.0	± 9.6 %
		Y	3.60	73.66	19.57		80.0	
		Z	2.84	70.82	17.80		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.69	66.32	15.48	2.23	80.0	± 9.6 %
		Y	3.40	69.42	17.73		80.0	
		Z	2.87	67.65	16.32		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.78	66.26	15.46	2.23	80.0	± 9.6 %
		Y	3.48	69.19	17.63		80.0	
		Z	2.96	67.52	16.27		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.07	69.03	17.01	2.23	80.0	± 9.6 %
		Y	4.15	73.51	19.42		80.0	
		Z	3.35	70.80	17.93		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.15	66.46	16.22	2.23	80.0	± 9.6 %
		Y	3.73	68.80	17.76		80.0	
		Z	3.26	67.37	16.77		80.0	

10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.24	66.32	16.20	2.23	80.0	± 9.6 %
		Y	3.81	68.47	17.63		80.0	
		Z	3.35	67.15	16.71		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.51	68.36	16.83	2.23	80.0	± 9.6 %
		Y	4.41	71.84	18.68		80.0	
		Z	3.72	69.67	17.51		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.65	66.40	16.44	2.23	80.0	± 9.6 %
		Y	4.20	68.42	17.64		80.0	
		Z	3.74	67.11	16.83		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.72	66.27	16.42	2.23	80.0	± 9.6 %
		Y	4.25	68.13	17.55		80.0	
		Z	3.81	66.92	16.79		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.53	69.27	17.06	2.23	80.0	± 9.6 %
		Y	4.71	73.81	19.35		80.0	
		Z	3.83	70.97	17.89		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.53	66.49	16.47	2.23	80.0	± 9.6 %
		Y	4.09	68.73	17.78		80.0	
		Z	3.62	67.27	16.91		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.58	66.23	16.41	2.23	80.0	± 9.6 %
		Y	4.11	68.25	17.62		80.0	
		Z	3.67	66.92	16.81		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.86	62.95	14.53	0.00	150.0	± 9.6 %
		Y	0.96	63.14	14.68		150.0	
		Z	0.84	62.85	14.32		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.68	75.09	17.93	0.00	150.0	± 9.6 %
		Y	0.60	70.79	17.39		150.0	
		Z	0.59	73.58	17.02		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.71	65.13	15.13	0.00	150.0	± 9.6 %
		Y	0.81	65.08	15.31		150.0	
		Z	0.69	64.87	14.81		150.0	
10518-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.31	66.61	16.23	0.00	150.0	± 9.6 %
		Y	4.51	66.70	16.19		150.0	
		Z	4.30	66.61	16.12		150.0	
10519-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.46	66.79	16.33	0.00	150.0	± 9.6 %
		Y	4.69	66.93	16.31		150.0	
		Z	4.45	66.80	16.22		150.0	
10520-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.32	66.72	16.24	0.00	150.0	± 9.6 %
		Y	4.55	66.89	16.23		150.0	
		Z	4.31	66.74	16.13		150.0	
10521-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.25	66.68	16.22	0.00	150.0	± 9.6 %
		Y	4.48	66.88	16.21		150.0	
		Z	4.24	66.71	16.11		150.0	
10522-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.30	66.84	16.33	0.00	150.0	± 9.6 %
		Y	4.54	66.98	16.30		150.0	
		Z	4.30	66.85	16.22		150.0	

10523-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.22	66.79	16.22	0.00	150.0	± 9.6 %
		Y	4.42	66.85	16.15		150.0	
		Z	4.21	66.79	16.10		150.0	
10524-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.25	66.78	16.31	0.00	150.0	± 9.6 %
		Y	4.48	66.90	16.27		150.0	
		Z	4.24	66.79	16.19		150.0	
10525-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.28	65.85	15.93	0.00	150.0	± 9.6 %
		Y	4.47	65.95	15.86		150.0	
		Z	4.27	65.86	15.81		150.0	
10526-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.41	66.15	16.05	0.00	150.0	± 9.6 %
		Y	4.64	66.31	16.00		150.0	
		Z	4.40	66.17	15.93		150.0	
10527-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.34	66.11	15.98	0.00	150.0	± 9.6 %
		Y	4.56	66.27	15.95		150.0	
		Z	4.33	66.13	15.87		150.0	
10528-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.35	66.13	16.02	0.00	150.0	± 9.6 %
		Y	4.58	66.29	15.98		150.0	
		Z	4.34	66.15	15.90		150.0	
10529-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.35	66.13	16.02	0.00	150.0	± 9.6 %
		Y	4.58	66.29	15.98		150.0	
		Z	4.34	66.15	15.90		150.0	
10531-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.32	66.16	16.00	0.00	150.0	± 9.6 %
		Y	4.57	66.39	15.99		150.0	
		Z	4.31	66.19	15.89		150.0	
10532-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.20	66.01	15.92	0.00	150.0	± 9.6 %
		Y	4.43	66.24	15.92		150.0	
		Z	4.19	66.04	15.81		150.0	
10533-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.36	66.21	16.02	0.00	150.0	± 9.6 %
		Y	4.59	66.34	15.97		150.0	
		Z	4.35	66.22	15.90		150.0	
10534-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	4.94	66.18	16.13	0.00	150.0	± 9.6 %
		Y	5.11	66.38	16.03		150.0	
		Z	4.91	66.20	15.99		150.0	
10535-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	4.99	66.35	16.21	0.00	150.0	± 9.6 %
		Y	5.18	66.56	16.12		150.0	
		Z	4.97	66.36	16.07		150.0	
10536-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	4.87	66.32	16.17	0.00	150.0	± 9.6 %
		Y	5.05	66.51	16.07		150.0	
		Z	4.85	66.34	16.04		150.0	
10537-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	4.94	66.34	16.18	0.00	150.0	± 9.6 %
		Y	5.10	66.48	16.06		150.0	
		Z	4.91	66.31	16.03		150.0	
10538-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.01	66.30	16.21	0.00	150.0	± 9.6 %
		Y	5.19	66.49	16.11		150.0	
		Z	4.98	66.30	16.06		150.0	
10540-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	4.93	66.22	16.18	0.00	150.0	± 9.6 %
		Y	5.13	66.52	16.13		150.0	
		Z	4.91	66.26	16.06		150.0	

10541-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	4.90	66.09	16.10	0.00	150.0	± 9.6 %
		Y	5.10	66.38	16.06		150.0	
		Z	4.88	66.13	15.98		150.0	
10542-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.07	66.24	16.19	0.00	150.0	± 9.6 %
		Y	5.25	66.45	16.11		150.0	
		Z	5.04	66.26	16.06		150.0	
10543-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.16	66.37	16.29	0.00	150.0	± 9.6 %
		Y	5.33	66.48	16.14		150.0	
		Z	5.12	66.32	16.12		150.0	
10544-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.28	66.21	16.10	0.00	150.0	± 9.6 %
		Y	5.42	66.50	16.03		150.0	
		Z	5.25	66.26	15.98		150.0	
10545-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.51	66.84	16.38	0.00	150.0	± 9.6 %
		Y	5.61	66.90	16.18		150.0	
		Z	5.45	66.77	16.19		150.0	
10546-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.32	66.36	16.14	0.00	150.0	± 9.6 %
		Y	5.48	66.70	16.10		150.0	
		Z	5.29	66.40	16.02		150.0	
10547-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.43	66.58	16.25	0.00	150.0	± 9.6 %
		Y	5.55	66.74	16.11		150.0	
		Z	5.37	66.52	16.07		150.0	
10548-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.67	67.49	16.67	0.00	150.0	± 9.6 %
		Y	5.79	67.62	16.52		150.0	
		Z	5.59	67.37	16.46		150.0	
10550-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.44	66.73	16.35	0.00	150.0	± 9.6 %
		Y	5.51	66.72	16.12		150.0	
		Z	5.36	66.62	16.14		150.0	
10551-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.31	66.31	16.10	0.00	150.0	± 9.6 %
		Y	5.52	66.76	16.10		150.0	
		Z	5.30	66.41	15.99		150.0	
10552-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.28	66.30	16.09	0.00	150.0	± 9.6 %
		Y	5.44	66.57	16.01		150.0	
		Z	5.25	66.34	15.96		150.0	
10553-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.34	66.26	16.10	0.00	150.0	± 9.6 %
		Y	5.52	66.60	16.06		150.0	
		Z	5.31	66.32	15.98		150.0	
10554-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.72	66.58	16.20	0.00	150.0	± 9.6 %
		Y	5.83	66.86	16.12		150.0	
		Z	5.67	66.61	16.06		150.0	
10555-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	5.84	66.90	16.34	0.00	150.0	± 9.6 %
		Y	5.95	67.15	16.24		150.0	
		Z	5.79	66.90	16.19		150.0	
10556-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	5.87	66.98	16.38	0.00	150.0	± 9.6 %
		Y	5.98	67.20	16.26		150.0	
		Z	5.82	66.99	16.23		150.0	
10557-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	5.81	66.79	16.30	0.00	150.0	± 9.6 %
		Y	5.94	67.10	16.23		150.0	
		Z	5.77	66.83	16.17		150.0	

10558-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	5.82	66.86	16.35	0.00	150.0	± 9.6 %
		Y	5.99	67.26	16.33		150.0	
		Z	5.79	66.94	16.24		150.0	
10560-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	5.84	66.78	16.35	0.00	150.0	± 9.6 %
		Y	5.98	67.11	16.29		150.0	
		Z	5.80	66.82	16.22		150.0	
10561-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	5.78	66.81	16.39	0.00	150.0	± 9.6 %
		Y	5.91	67.08	16.31		150.0	
		Z	5.74	66.84	16.26		150.0	
10562-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	5.83	66.94	16.46	0.00	150.0	± 9.6 %
		Y	6.02	67.44	16.49		150.0	
		Z	5.80	67.03	16.35		150.0	
10563-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	5.98	67.08	16.50	0.00	150.0	± 9.6 %
		Y	6.21	67.62	16.54		150.0	
		Z	5.91	67.01	16.31		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.63	66.62	16.36	0.46	150.0	± 9.6 %
		Y	4.84	66.79	16.36		150.0	
		Z	4.61	66.63	16.24		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	4.83	67.05	16.69	0.46	150.0	± 9.6 %
		Y	5.06	67.22	16.67		150.0	
		Z	4.82	67.07	16.58		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	4.66	66.85	16.48	0.46	150.0	± 9.6 %
		Y	4.90	67.07	16.49		150.0	
		Z	4.65	66.88	16.38		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	4.70	67.27	16.87	0.46	150.0	± 9.6 %
		Y	4.93	67.45	16.84		150.0	
		Z	4.69	67.33	16.78		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.56	66.58	16.20	0.46	150.0	± 9.6 %
		Y	4.81	66.86	16.28		150.0	
		Z	4.55	66.62	16.10		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	4.68	67.48	17.00	0.46	150.0	± 9.6 %
		Y	4.88	67.55	16.91		150.0	
		Z	4.67	67.53	16.91		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	4.69	67.30	16.91	0.46	150.0	± 9.6 %
		Y	4.92	67.39	16.83		150.0	
		Z	4.68	67.31	16.79		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.00	63.45	14.91	0.46	130.0	± 9.6 %
		Y	1.13	64.20	15.58		130.0	
		Z	0.98	63.57	14.96		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.01	64.01	15.28	0.46	130.0	± 9.6 %
		Y	1.14	64.75	15.94		130.0	
		Z	0.99	64.16	15.34		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	1.87	85.75	21.98	0.46	130.0	± 9.6 %
		Y	1.92	86.55	24.04		130.0	
		Z	2.25	89.51	23.31		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	1.08	70.06	18.36	0.46	130.0	± 9.6 %
		Y	1.22	70.33	18.86		130.0	
		Z	1.09	70.58	18.62		130.0	

10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.39	66.32	16.32	0.46	130.0	± 9.6 %
		Y	4.62	66.58	16.43		130.0	
		Z	4.39	66.40	16.27		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.42	66.53	16.41	0.46	130.0	± 9.6 %
		Y	4.65	66.74	16.49		130.0	
		Z	4.42	66.60	16.36		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	4.59	66.78	16.57	0.46	130.0	± 9.6 %
		Y	4.85	67.03	16.66		130.0	
		Z	4.59	66.86	16.52		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.49	66.94	16.68	0.46	130.0	± 9.6 %
		Y	4.74	67.18	16.75		130.0	
		Z	4.50	67.02	16.64		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.24	66.07	15.88	0.46	130.0	± 9.6 %
		Y	4.51	66.48	16.08		130.0	
		Z	4.24	66.15	15.83		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.28	66.14	15.91	0.46	130.0	± 9.6 %
		Y	4.56	66.53	16.11		130.0	
		Z	4.29	66.22	15.86		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.40	66.99	16.63	0.46	130.0	± 9.6 %
		Y	4.64	67.22	16.70		130.0	
		Z	4.40	67.08	16.59		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.17	65.84	15.66	0.46	130.0	± 9.6 %
		Y	4.45	66.25	15.88		130.0	
		Z	4.18	65.90	15.60		130.0	
10583-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.39	66.32	16.32	0.46	130.0	± 9.6 %
		Y	4.62	66.58	16.43		130.0	
		Z	4.39	66.40	16.27		130.0	
10584-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.42	66.53	16.41	0.46	130.0	± 9.6 %
		Y	4.65	66.74	16.49		130.0	
		Z	4.42	66.60	16.36		130.0	
10585-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.59	66.78	16.57	0.46	130.0	± 9.6 %
		Y	4.85	67.03	16.66		130.0	
		Z	4.59	66.86	16.52		130.0	
10586-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.49	66.94	16.68	0.46	130.0	± 9.6 %
		Y	4.74	67.18	16.75		130.0	
		Z	4.50	67.02	16.64		130.0	
10587-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.24	66.07	15.88	0.46	130.0	± 9.6 %
		Y	4.51	66.48	16.08		130.0	
		Z	4.24	66.15	15.83		130.0	
10588-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.28	66.14	15.91	0.46	130.0	± 9.6 %
		Y	4.56	66.53	16.11		130.0	
		Z	4.29	66.22	15.86		130.0	
10589-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.40	66.99	16.63	0.46	130.0	± 9.6 %
		Y	4.64	67.22	16.70		130.0	
		Z	4.40	67.08	16.59		130.0	
10590-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.17	65.84	15.66	0.46	130.0	± 9.6 %
		Y	4.45	66.25	15.88		130.0	
		Z	4.18	65.90	15.60		130.0	

10591-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.55	66.42	16.46	0.46	130.0	± 9.6 %
		Y	4.78	66.64	16.53		130.0	
		Z	4.55	66.49	16.40		130.0	
10592-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	4.67	66.72	16.59	0.46	130.0	± 9.6 %
		Y	4.93	66.98	16.66		130.0	
		Z	4.68	66.80	16.53		130.0	
10593-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	4.59	66.59	16.43	0.46	130.0	± 9.6 %
		Y	4.85	66.88	16.54		130.0	
		Z	4.59	66.67	16.38		130.0	
10594-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	4.64	66.77	16.61	0.46	130.0	± 9.6 %
		Y	4.90	67.05	16.69		130.0	
		Z	4.65	66.86	16.56		130.0	
10595-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.61	66.75	16.51	0.46	130.0	± 9.6 %
		Y	4.87	67.00	16.59		130.0	
		Z	4.61	66.82	16.45		130.0	
10596-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.54	66.71	16.50	0.46	130.0	± 9.6 %
		Y	4.80	67.00	16.60		130.0	
		Z	4.54	66.79	16.44		130.0	
10597-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.49	66.57	16.34	0.46	130.0	± 9.6 %
		Y	4.75	66.90	16.48		130.0	
		Z	4.49	66.65	16.29		130.0	
10598-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.48	66.81	16.63	0.46	130.0	± 9.6 %
		Y	4.73	67.12	16.73		130.0	
		Z	4.49	66.91	16.58		130.0	
10599-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.31	67.13	16.85	0.46	130.0	± 9.6 %
		Y	5.45	67.20	16.74		130.0	
		Z	5.25	67.05	16.69		130.0	
10600-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.48	67.76	17.14	0.46	130.0	± 9.6 %
		Y	5.57	67.58	16.91		130.0	
		Z	5.39	67.54	16.90		130.0	
10601-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.31	67.28	16.91	0.46	130.0	± 9.6 %
		Y	5.47	67.34	16.80		130.0	
		Z	5.27	67.22	16.76		130.0	
10602-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.43	67.41	16.89	0.46	130.0	± 9.6 %
		Y	5.56	67.39	16.75		130.0	
		Z	5.40	67.36	16.75		130.0	
10603-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.54	67.82	17.25	0.46	130.0	± 9.6 %
		Y	5.64	67.67	17.02		130.0	
		Z	5.49	67.76	17.09		130.0	
10604-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.42	67.47	17.05	0.46	130.0	± 9.6 %
		Y	5.46	67.19	16.76		130.0	
		Z	5.37	67.38	16.88		130.0	
10605-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.43	67.47	17.04	0.46	130.0	± 9.6 %
		Y	5.56	67.49	16.91		130.0	
		Z	5.37	67.38	16.87		130.0	
10606-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.17	66.77	16.54	0.46	130.0	± 9.6 %
		Y	5.31	66.83	16.45		130.0	
		Z	5.12	66.68	16.37		130.0	

10607-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.40	65.75	16.09	0.46	130.0	± 9.6 %
		Y	4.62	65.97	16.16		130.0	
		Z	4.40	65.83	16.04		130.0	
10608-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.54	66.09	16.24	0.46	130.0	± 9.6 %
		Y	4.80	66.37	16.32		130.0	
		Z	4.55	66.18	16.20		130.0	
10609-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.43	65.91	16.05	0.46	130.0	± 9.6 %
		Y	4.69	66.22	16.16		130.0	
		Z	4.44	66.00	16.00		130.0	
10610-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.49	66.09	16.23	0.46	130.0	± 9.6 %
		Y	4.74	66.38	16.32		130.0	
		Z	4.49	66.18	16.19		130.0	
10611-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.40	65.88	16.06	0.46	130.0	± 9.6 %
		Y	4.66	66.19	16.17		130.0	
		Z	4.40	65.97	16.02		130.0	
10612-AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.39	66.01	16.10	0.46	130.0	± 9.6 %
		Y	4.66	66.35	16.22		130.0	
		Z	4.40	66.10	16.06		130.0	
10613-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.38	65.82	15.94	0.46	130.0	± 9.6 %
		Y	4.67	66.22	16.10		130.0	
		Z	4.39	65.92	15.90		130.0	
10614-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.35	66.06	16.21	0.46	130.0	± 9.6 %
		Y	4.61	66.40	16.32		130.0	
		Z	4.36	66.17	16.17		130.0	
10615-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.39	65.69	15.81	0.46	130.0	± 9.6 %
		Y	4.66	66.03	15.96		130.0	
		Z	4.39	65.77	15.76		130.0	
10616-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.07	66.15	16.34	0.46	130.0	± 9.6 %
		Y	5.27	66.44	16.35		130.0	
		Z	5.05	66.21	16.25		130.0	
10617-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.14	66.37	16.43	0.46	130.0	± 9.6 %
		Y	5.34	66.62	16.41		130.0	
		Z	5.12	66.42	16.33		130.0	
10618-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.03	66.38	16.45	0.46	130.0	± 9.6 %
		Y	5.22	66.62	16.43		130.0	
		Z	5.02	66.45	16.36		130.0	
10619-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.07	66.24	16.31	0.46	130.0	± 9.6 %
		Y	5.24	66.43	16.27		130.0	
		Z	5.03	66.23	16.18		130.0	
10620-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.13	66.23	16.35	0.46	130.0	± 9.6 %
		Y	5.33	66.47	16.34		130.0	
		Z	5.11	66.25	16.24		130.0	
10621-AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.12	66.28	16.51	0.46	130.0	± 9.6 %
		Y	5.33	66.60	16.51		130.0	
		Z	5.11	66.38	16.44		130.0	
10622-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.11	66.38	16.55	0.46	130.0	± 9.6 %
		Y	5.34	66.76	16.59		130.0	
		Z	5.11	66.50	16.49		130.0	

10623-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	4.99	65.86	16.14	0.46	130.0	± 9.6 %
		Y	5.22	66.30	16.24		130.0	
		Z	4.98	65.96	16.08		130.0	
10624-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.20	66.20	16.38	0.46	130.0	± 9.6 %
		Y	5.41	66.49	16.39		130.0	
		Z	5.19	66.26	16.30		130.0	
10625-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.30	66.37	16.54	0.46	130.0	± 9.6 %
		Y	5.75	67.41	16.90		130.0	
		Z	5.33	66.58	16.52		130.0	
10626-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.40	66.14	16.28	0.46	130.0	± 9.6 %
		Y	5.57	66.51	16.31		130.0	
		Z	5.38	66.23	16.21		130.0	
10627-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.71	67.03	16.70	0.46	130.0	± 9.6 %
		Y	5.80	67.06	16.54		130.0	
		Z	5.65	66.96	16.54		130.0	
10628-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.40	66.15	16.18	0.46	130.0	± 9.6 %
		Y	5.60	66.59	16.25		130.0	
		Z	5.38	66.23	16.10		130.0	
10629-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.55	66.49	16.35	0.46	130.0	± 9.6 %
		Y	5.67	66.64	16.26		130.0	
		Z	5.49	66.42	16.19		130.0	
10630-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	5.95	67.89	17.05	0.46	130.0	± 9.6 %
		Y	6.08	68.07	16.98		130.0	
		Z	5.84	67.71	16.83		130.0	
10631-AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	5.77	67.48	17.05	0.46	130.0	± 9.6 %
		Y	5.99	67.89	17.07		130.0	
		Z	5.74	67.53	16.95		130.0	
10632-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.72	67.25	16.96	0.46	130.0	± 9.6 %
		Y	5.77	67.11	16.70		130.0	
		Z	5.64	67.12	16.77		130.0	
10633-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.44	66.28	16.29	0.46	130.0	± 9.6 %
		Y	5.66	66.76	16.36		130.0	
		Z	5.44	66.43	16.24		130.0	
10634-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.44	66.38	16.39	0.46	130.0	± 9.6 %
		Y	5.64	66.78	16.43		130.0	
		Z	5.43	66.48	16.32		130.0	
10635-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.30	65.61	15.72	0.46	130.0	± 9.6 %
		Y	5.53	66.14	15.85		130.0	
		Z	5.29	65.70	15.64		130.0	
10636-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	5.86	66.55	16.40	0.46	130.0	± 9.6 %
		Y	5.98	66.87	16.39		130.0	
		Z	5.82	66.61	16.30		130.0	
10637-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.02	66.98	16.61	0.46	130.0	± 9.6 %
		Y	6.13	67.25	16.56		130.0	
		Z	5.97	67.00	16.48		130.0	
10638-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.03	67.01	16.60	0.46	130.0	± 9.6 %
		Y	6.13	67.22	16.53		130.0	
		Z	5.97	67.00	16.46		130.0	

10639-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	5.96	66.80	16.53	0.46	130.0	± 9.6 %
		Y	6.11	67.17	16.55		130.0	
		Z	5.93	66.87	16.44		130.0	
10640-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	5.92	66.70	16.42	0.46	130.0	± 9.6 %
		Y	6.12	67.19	16.50		130.0	
		Z	5.91	66.82	16.35		130.0	
10641-AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.06	66.91	16.55	0.46	130.0	± 9.6 %
		Y	6.16	67.10	16.47		130.0	
		Z	6.01	66.89	16.41		130.0	
10642-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.04	66.98	16.76	0.46	130.0	± 9.6 %
		Y	6.20	67.33	16.75		130.0	
		Z	6.02	67.07	16.68		130.0	
10643-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	5.90	66.69	16.50	0.46	130.0	± 9.6 %
		Y	6.04	67.03	16.51		130.0	
		Z	5.87	66.78	16.42		130.0	
10644-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	5.95	66.86	16.60	0.46	130.0	± 9.6 %
		Y	6.19	67.50	16.76		130.0	
		Z	5.94	66.99	16.54		130.0	
10645-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.44	67.99	17.14	0.46	130.0	± 9.6 %
		Y	6.47	67.94	16.94		130.0	
		Z	6.16	67.33	16.68		130.0	
10646-AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	7.50	90.48	30.44	9.30	60.0	± 9.6 %
		Y	17.43	112.38	39.34		60.0	
		Z	9.26	96.56	33.29		60.0	
10647-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	6.74	88.72	29.93	9.30	60.0	± 9.6 %
		Y	14.54	108.61	38.31		60.0	
		Z	8.10	94.14	32.60		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.39	60.00	6.32	0.00	150.0	± 9.6 %
		Y	0.67	63.31	10.55		150.0	
		Z	0.38	60.00	6.43		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.10	65.49	15.51	2.23	80.0	± 9.6 %
		Y	3.52	66.85	16.73		80.0	
		Z	3.18	66.07	15.91		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	3.70	65.11	16.04	2.23	80.0	± 9.6 %
		Y	4.03	66.07	16.78		80.0	
		Z	3.73	65.44	16.24		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	3.73	64.77	16.12	2.23	80.0	± 9.6 %
		Y	4.00	65.69	16.76		80.0	
		Z	3.74	65.07	16.28		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	3.81	64.71	16.17	2.23	80.0	± 9.6 %
		Y	4.06	65.68	16.79		80.0	
		Z	3.81	65.01	16.32		80.0	
10658-AAA	Pulse Waveform (200Hz, 10%)	X	3.06	66.59	11.16	10.00	50.0	± 9.6 %
		Y	100.00	111.68	26.09		50.0	
		Z	3.93	69.81	12.66		50.0	
10659-AAA	Pulse Waveform (200Hz, 20%)	X	1.63	63.81	8.65	6.99	60.0	± 9.6 %
		Y	100.00	113.13	25.67		60.0	
		Z	2.52	68.36	10.82		60.0	

10660-AAA	Pulse Waveform (200Hz, 40%)	X	0.57	60.00	5.26	3.98	80.0	± 9.6 %
		Y	100.00	118.24	26.52		80.0	
		Z	0.68	61.70	6.30		80.0	
10661-AAA	Pulse Waveform (200Hz, 60%)	X	0.32	60.00	3.83	2.22	100.0	± 9.6 %
		Y	100.00	125.46	28.15		100.0	
		Z	0.29	60.00	3.83		100.0	
10662-AAA	Pulse Waveform (200Hz, 80%)	X	7.43	367.15	53.93	0.97	120.0	± 9.6 %
		Y	100.00	135.73	30.13		120.0	
		Z	0.00	228.51	107.76		120.0	

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

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D750V3-1161_Jul16

CALIBRATION CERTIFICATE

Object	D750V3 - SN:1161
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	July 13, 2016

√PN
8/9/16
Extended
7/2017
SC

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	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	15-Jun-16 (No. EX3-7349_Jun16)	Jun-17
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 13, 2016

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:

a) 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
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	0.91 mho/m ± 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	2.09 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.17 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.39 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.1 ± 6 %	0.99 mho/m ± 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	2.16 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.43 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.41 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.53 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.6 Ω - 0.9 jΩ
Return Loss	- 25.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.2 Ω - 4.0 jΩ
Return Loss	- 28.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.033 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	November 19, 2015

DASY5 Validation Report for Head TSL

Date: 13.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1161

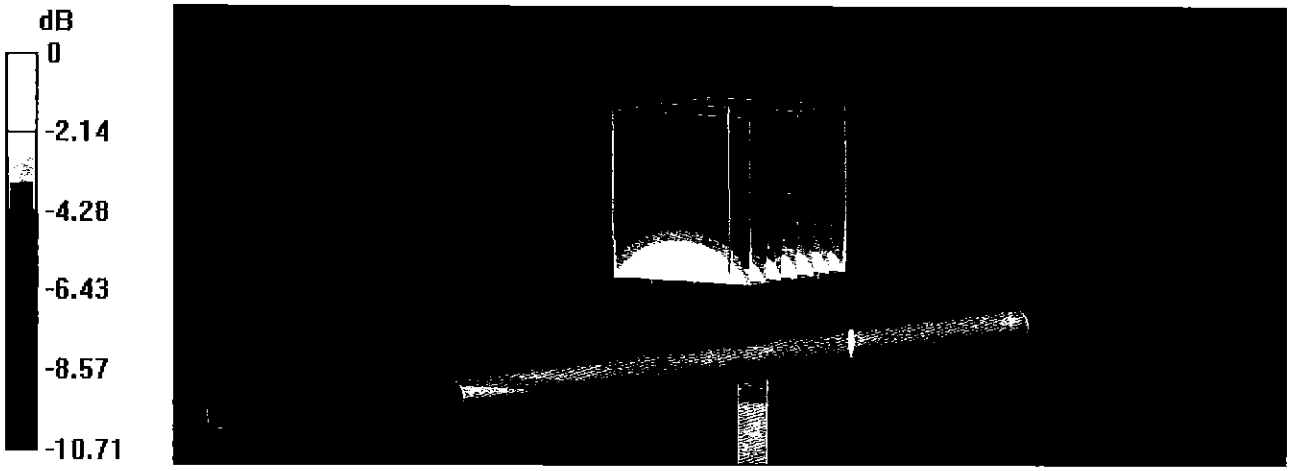
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.91 S/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.07, 10.07, 10.07); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

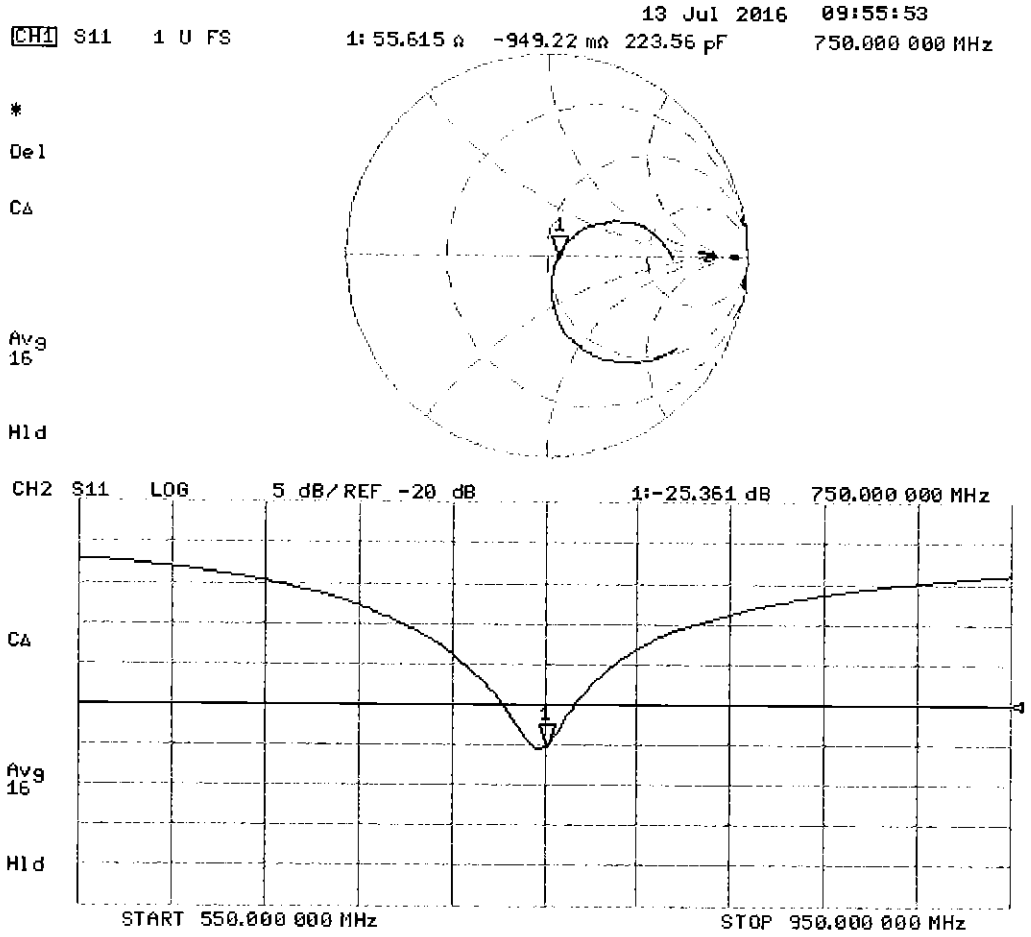
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.07 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.13 W/kg
SAR(1 g) = 2.09 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 13.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1161

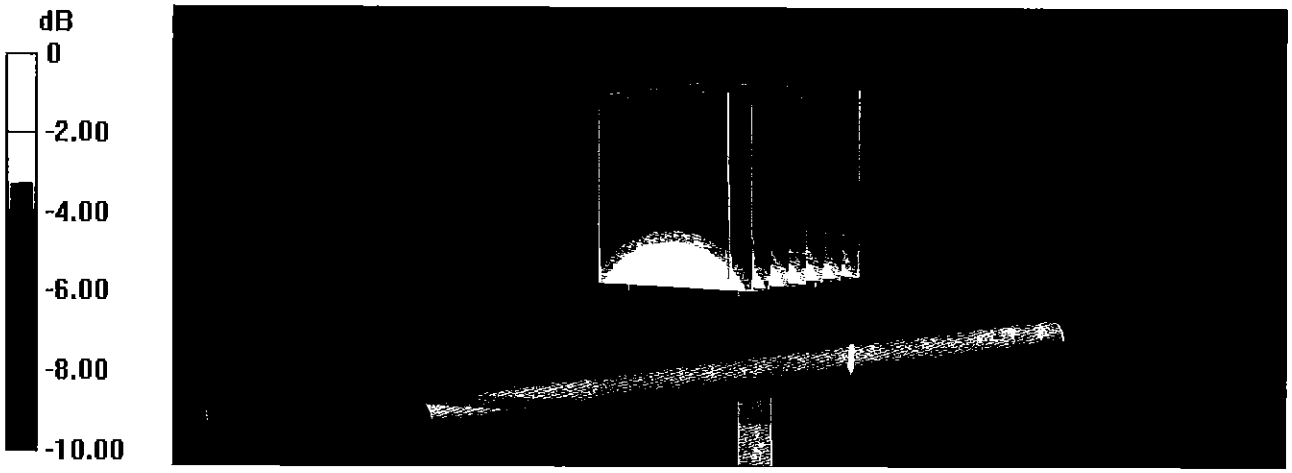
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.99 S/m; ε_r = 55.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.99, 9.99, 9.99); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

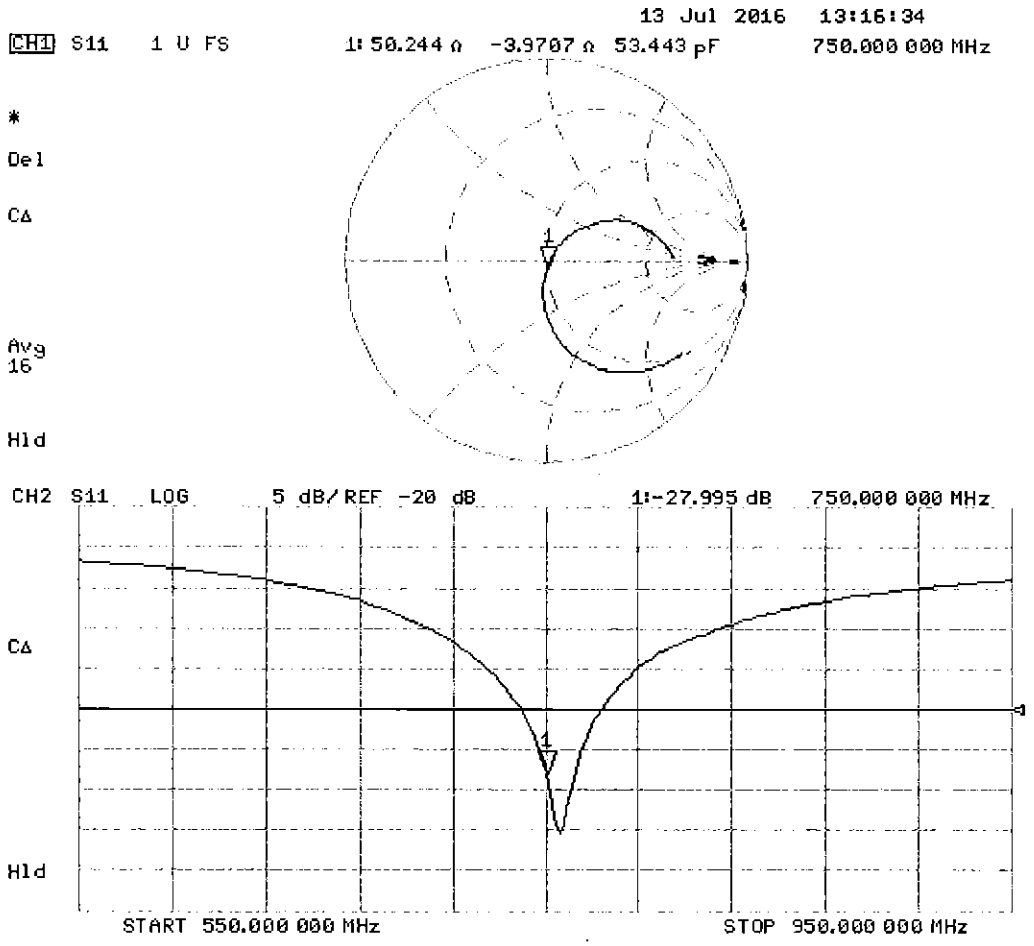
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.33 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.22 W/kg
SAR(1 g) = 2.16 W/kg; SAR(10 g) = 1.41 W/kg
Maximum value of SAR (measured) = 2.87 W/kg



0 dB = 2.87 W/kg = 4.58 dBW/kg

Impedance Measurement Plot for Body TSL



Certification of Calibration

Object	D750V3 – SN: 1161
Calibration procedure(s)	Procedure for Calibration Extension for SAR Dipoles.
Calibration date:	July 12, 2017
Description:	SAR Validation Dipole at 750 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Biennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/1/2017	Annual	6/1/2018	MY53401181
Agilent	8753ES	S-Parameter Network Analyzer	10/26/2016	Annual	10/26/2017	US39170118
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/8/2017	Annual	3/8/2018	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/14/2017	Annual	6/14/2018	1334
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/10/2017	Annual	5/10/2018	1070
SPEAG	ES3DV3	SAR Probe	11/15/2016	Annual	11/15/2017	3334
SPEAG	ES3DV3	SAR Probe	3/14/2017	Annual	3/14/2018	3319
Anritsu	MA2411B	Pulse Power Sensor	2/10/2017	Annual	2/10/2018	1207364
Anritsu	MA2411B	Pulse Power Sensor	2/10/2017	Annual	2/10/2018	1339018
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	941001
Agilent	N5182A	MXG Vector Signal Generator	2/28/2017	Annual	2/28/2018	MY47420800
Seekonk	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A

Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	KOK

DIPOLE CALIBRATION EXTENSION

Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

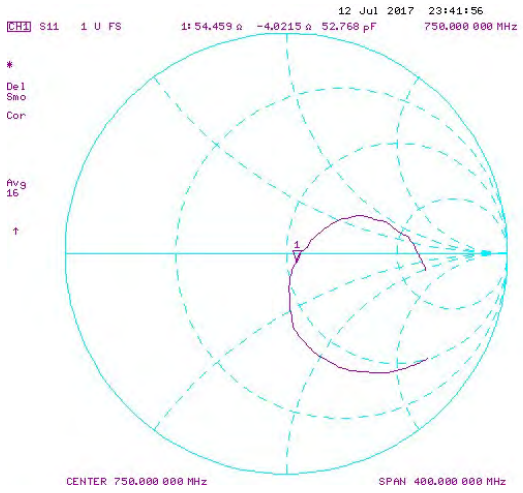
1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
3. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.

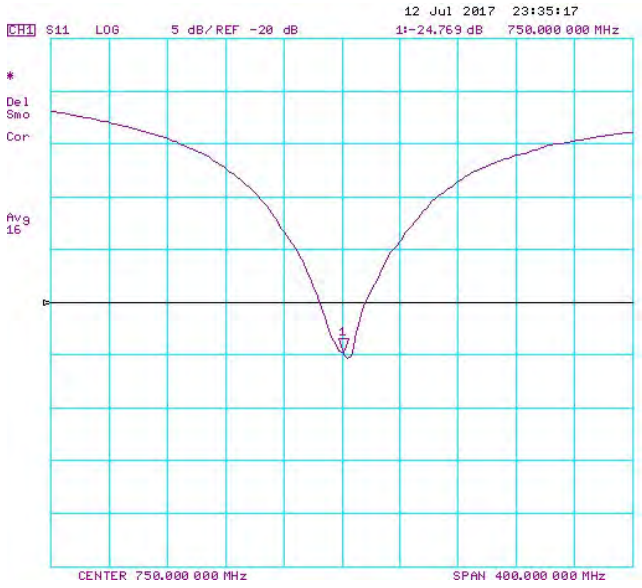
The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 23.0 dBm	Measured Head SAR (1g) W/kg @ 23.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 23.0 dBm	Measured Head SAR (10g) W/kg @ 23.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
7/13/2016	7/12/2017	1.033	1.63	1.65	0.98%	1.08	1.09	1.11%	55.6	54.5	1.1	-0.9	-4.0	3.1	-25.4	-24.8	2.40%	PASS

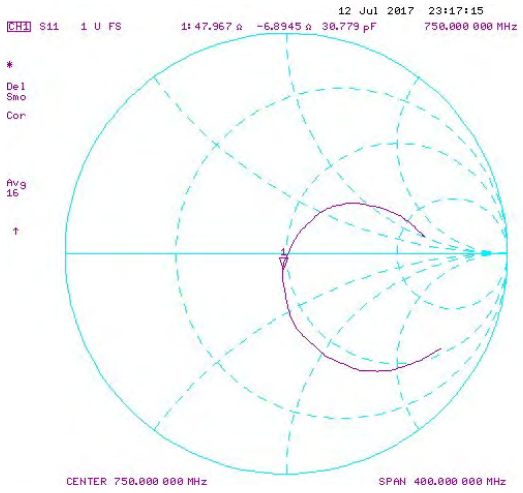
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 23.0 dBm	Measured Body SAR (1g) W/kg @ 23.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 23.0 dBm	Measured Body SAR (10g) W/kg @ 23.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
7/13/2016	7/12/2017	1.033	1.69	1.75	3.80%	1.11	1.17	5.79%	50.2	48.0	2.2	-4.0	-6.9	2.9	-28.0	-23.9	14.60%	PASS

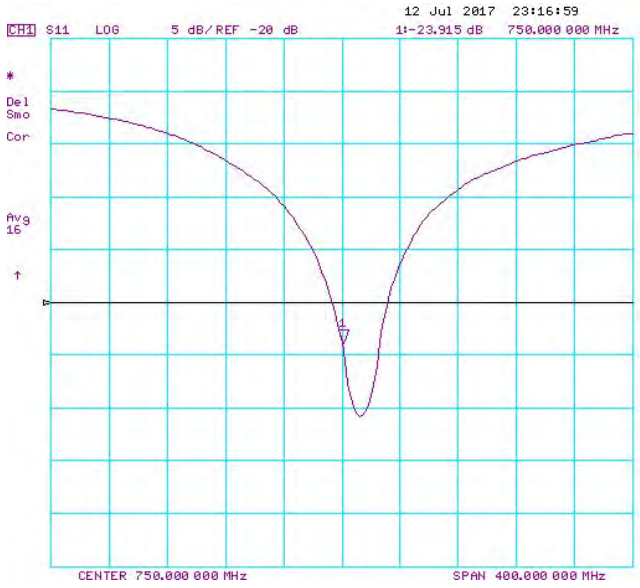
Impedance & Return-Loss Measurement Plot for Head TSL





Impedance & Return-Loss Measurement Plot for Body TSL





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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: D835V2-4d119_Apr18

CALIBRATION CERTIFICATE

Object: D835V2 - SN:4d119

Calibration procedure(s): QA CAL-05.v10
Calibration procedure for dipole validation kits above 700 MHz
BN ✓
05.04.2018

Calibration date: April 10, 2018

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-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 11, 2018

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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	0.92 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.53 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.19 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.8 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.44 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.56 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.59 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.26 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.0 Ω + 0.6 jΩ
Return Loss	- 38.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.1 Ω - 3.3 jΩ
Return Loss	- 26.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.389 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	June 29, 2010

DASY5 Validation Report for Head TSL

Date: 10.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d119

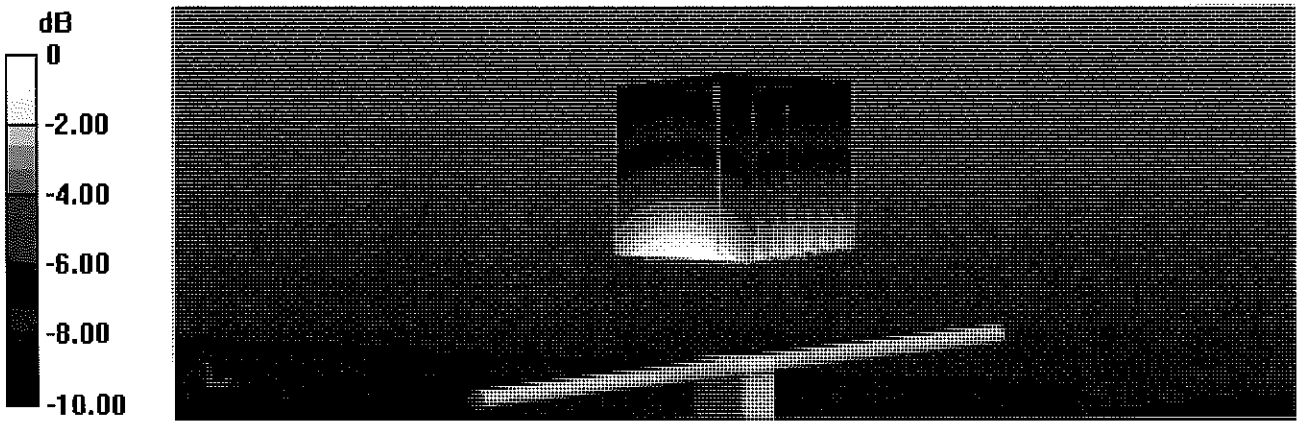
Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.92 S/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.9, 9.9, 9.9); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

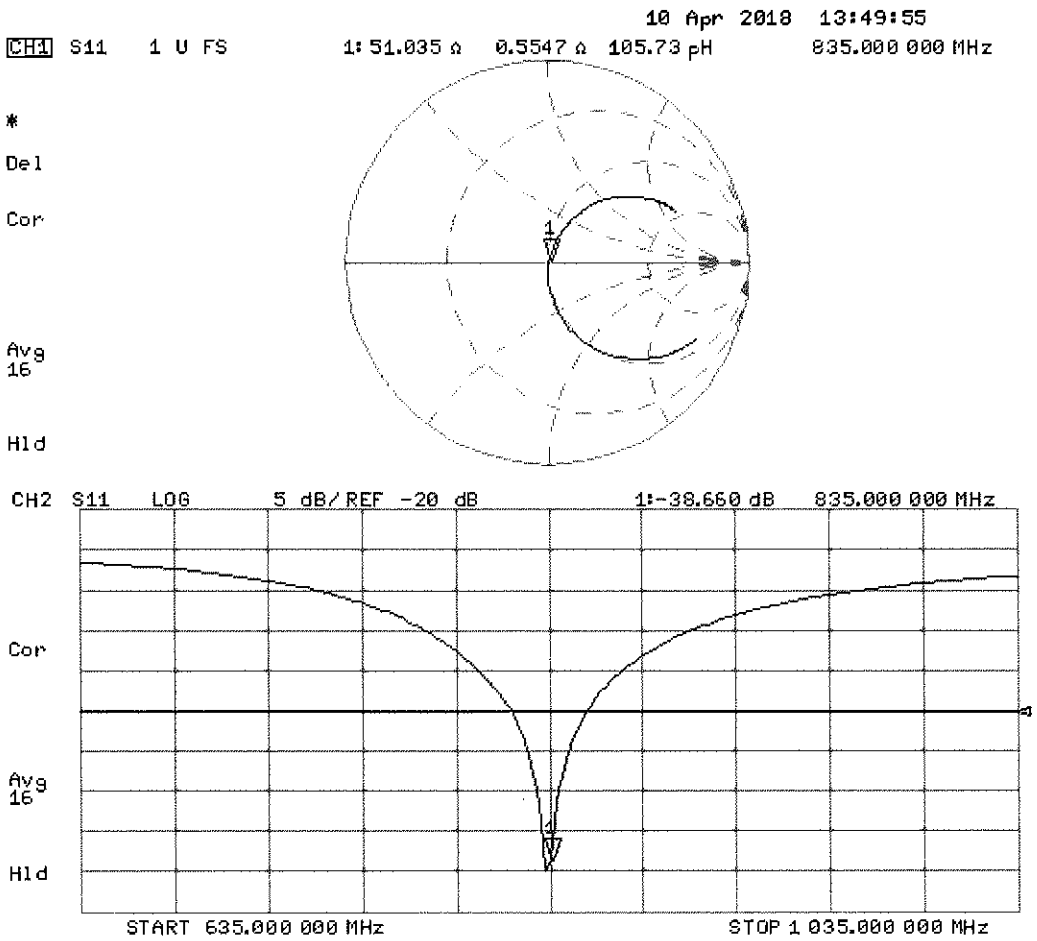
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 62.85 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.74 W/kg
SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.57 W/kg
Maximum value of SAR (measured) = 3.29 W/kg



0 dB = 3.29 W/kg = 5.17 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 10.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d119

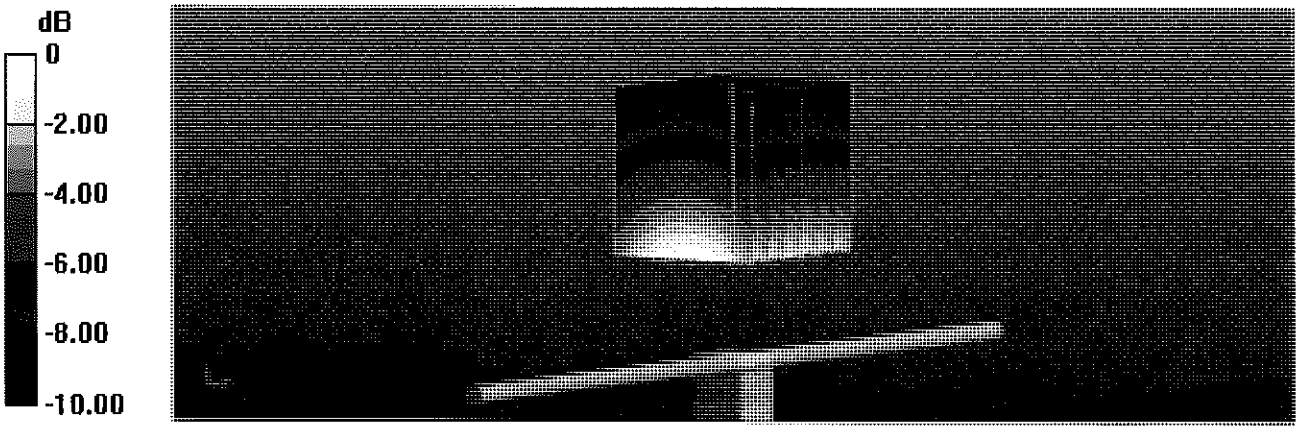
Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.99 S/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.05, 10.05, 10.05); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

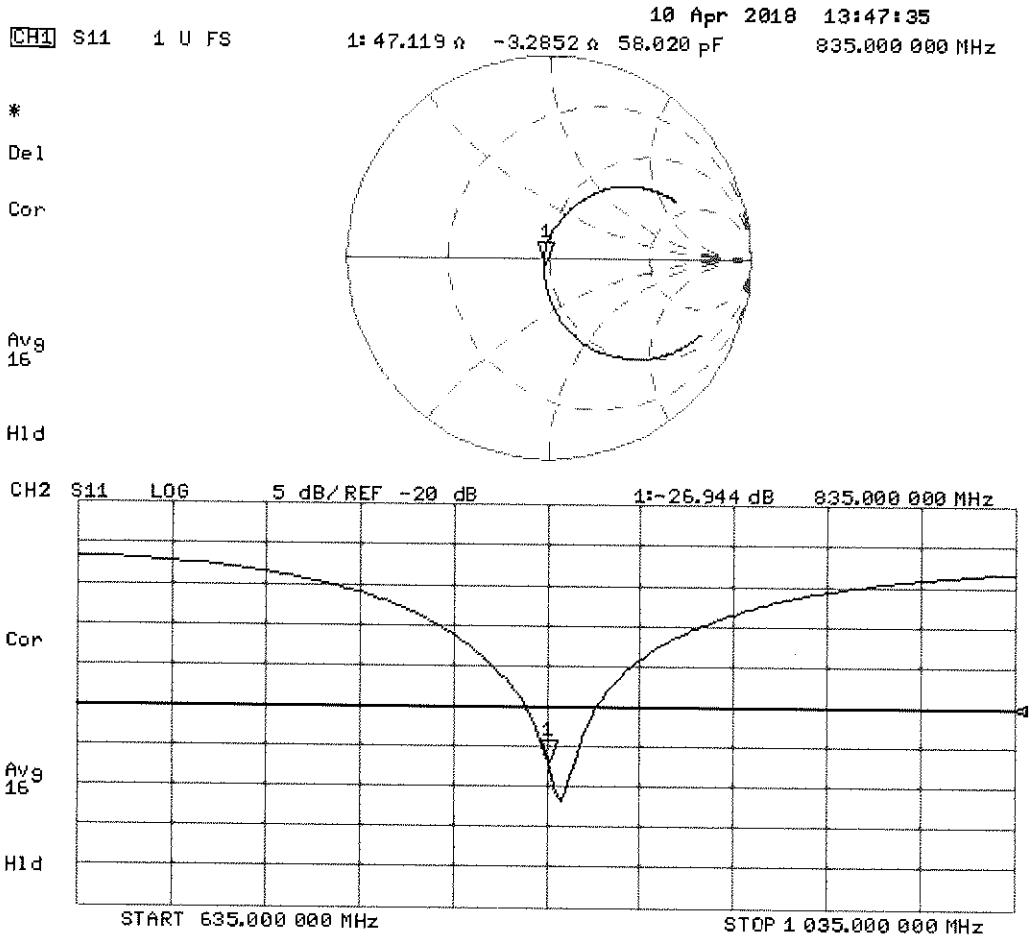
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.52 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.64 W/kg
SAR(1 g) = 2.44 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 3.24 W/kg



0 dB = 3.24 W/kg = 5.11 dBW/kg

Impedance Measurement Plot for Body TSL



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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: D1750V2-1051_Apr18

CALIBRATION CERTIFICATE

Object: D1750V2 - SN: 1051

Calibration procedure(s): QA CAL-05.v10
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: April 19, 2018

BN ✓
05-01-2018

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-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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:	Michael Weber	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 19, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.2 ± 6 %	1.35 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.3 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.4 ± 6 %	1.46 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**37.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.94 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**19.9 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.7 Ω + 2.5 jΩ
Return Loss	- 30.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.6 Ω + 1.3 jΩ
Return Loss	- 31.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.222 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 19, 2010

DASY5 Validation Report for Head TSL

Date: 19.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1051

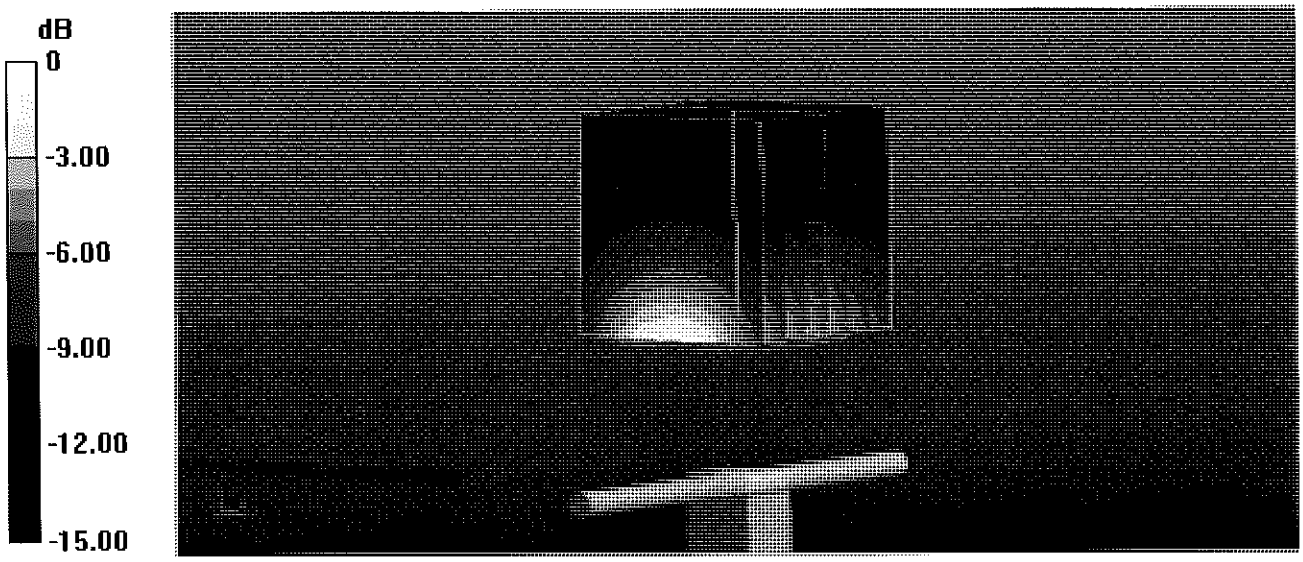
Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.35 S/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.5, 8.5, 8.5); Calibrated: 30.12.2017;
- 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)

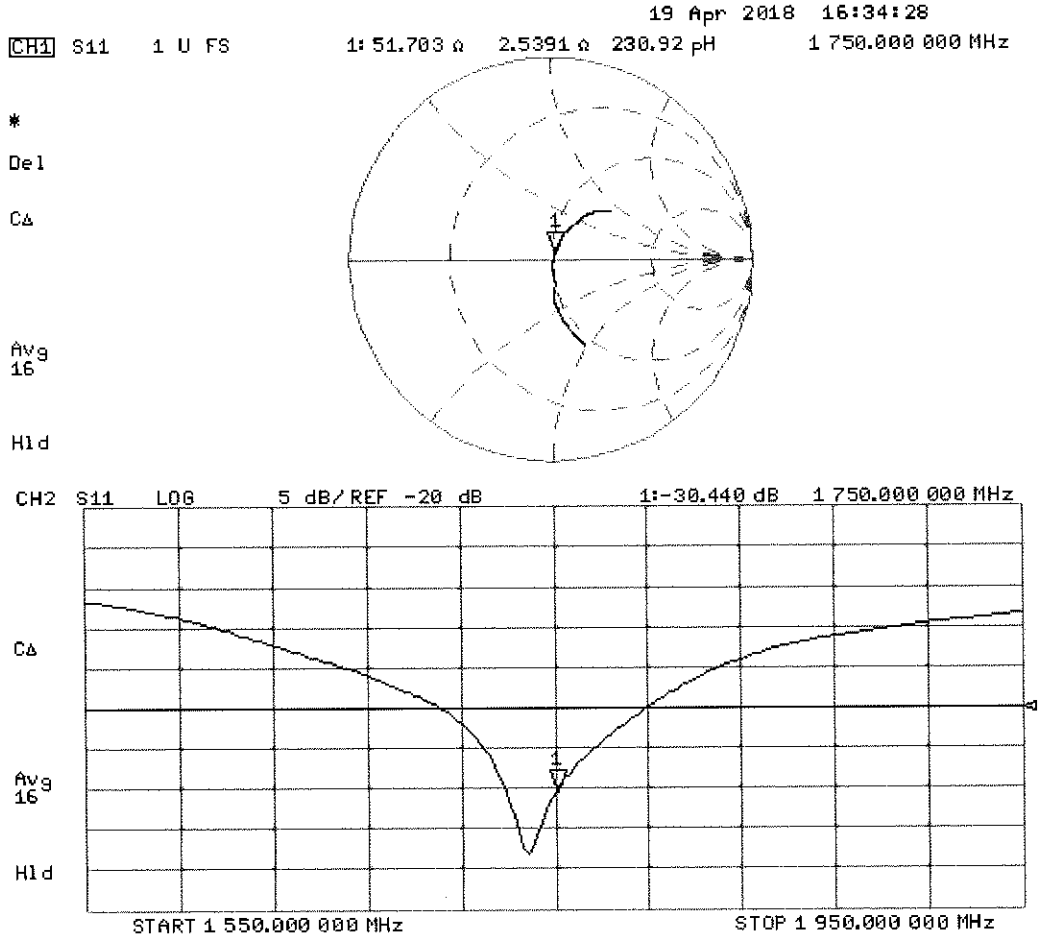
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 107.3 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 16.7 W/kg
SAR(1 g) = 9.1 W/kg; SAR(10 g) = 4.82 W/kg
Maximum value of SAR (measured) = 14.0 W/kg



0 dB = 14.0 W/kg = 11.46 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 19.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1051

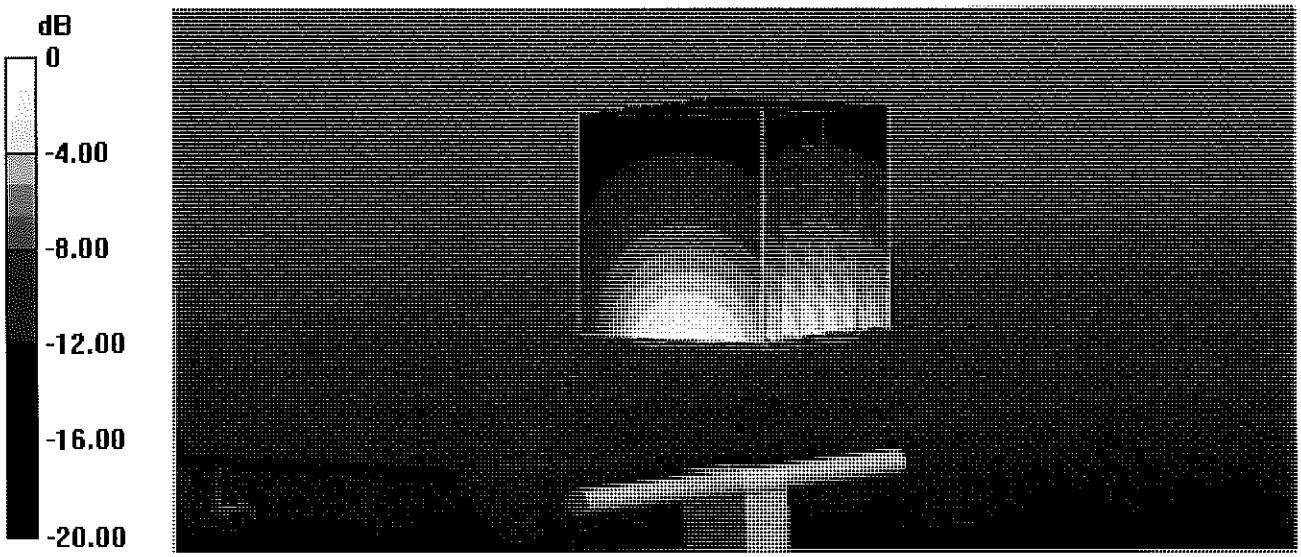
Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.46 S/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.35, 8.35, 8.35); Calibrated: 30.12.2017;
- 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)

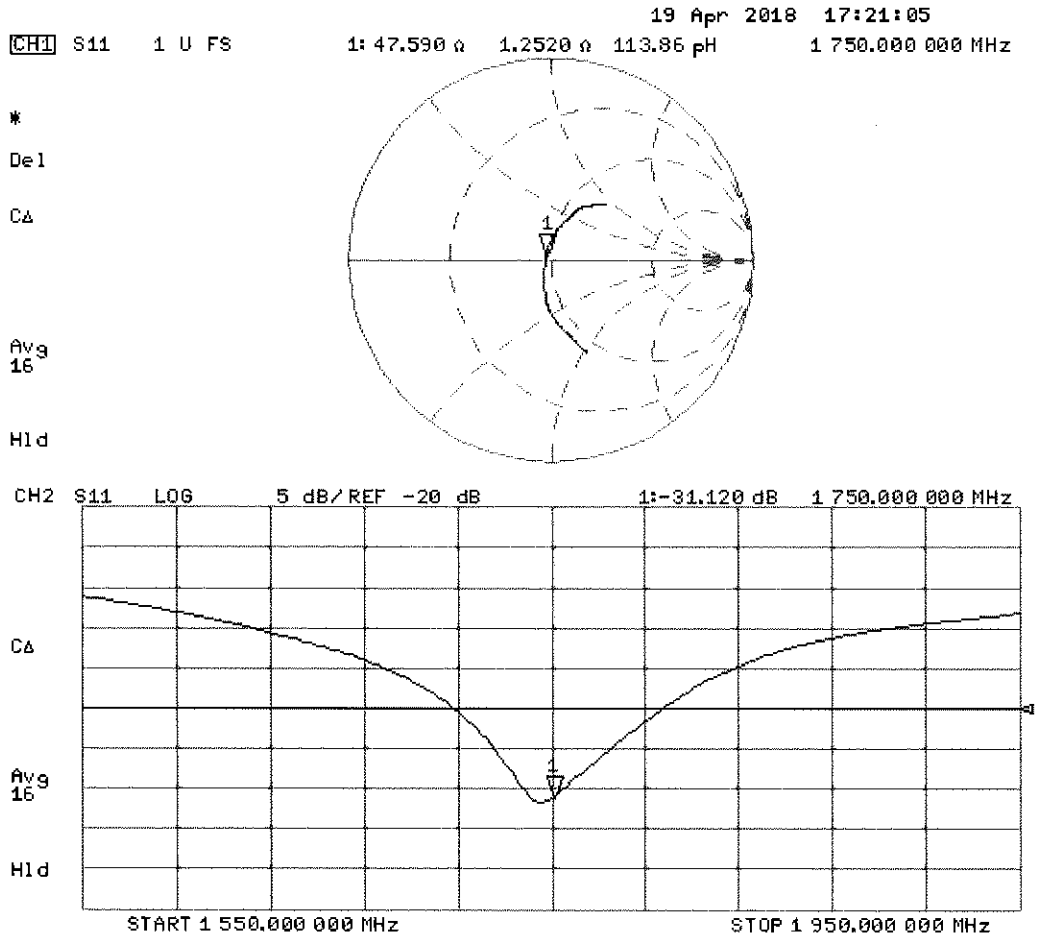
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.30 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 16.2 W/kg
SAR(1 g) = 9.21 W/kg; SAR(10 g) = 4.94 W/kg
Maximum value of SAR (measured) = 13.3 W/kg



0 dB = 13.3 W/kg = 11.24 dBW/kg

Impedance Measurement Plot for Body TSL



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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: D1900V2-5d141_Apr18

CALIBRATION CERTIFICATE

Object: D1900V2 - SN:5d141

Calibration procedure(s): QA CAL-05.v10
Calibration procedure for dipole validation kits above 700 MHz

BNV
05-01-2018

Calibration date: April 12, 2018

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-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 13, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.1 ± 6 %	1.35 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.6 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.3 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.73 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**40.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.20 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.2 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.4 Ω + 5.9 jΩ
Return Loss	- 23.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.8 Ω + 7.2 jΩ
Return Loss	- 22.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.198 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	March 11, 2011

DASY5 Validation Report for Head TSL

Date: 12.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d141

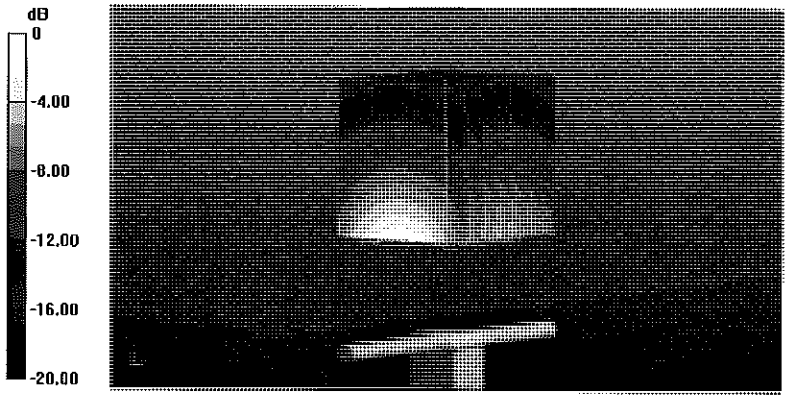
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.35 S/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.18, 8.18, 8.18); Calibrated: 30.12.2017;
- 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)

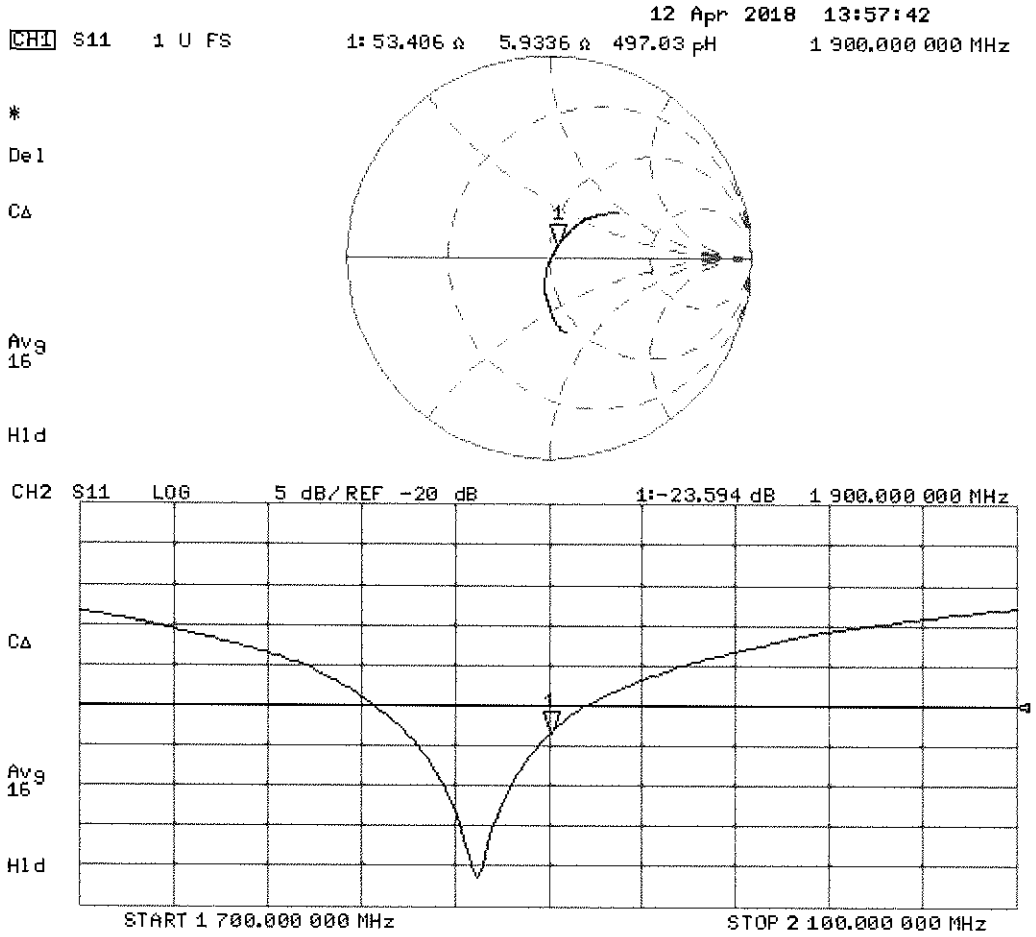
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.9 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 9.55 W/kg; SAR(10 g) = 5.05 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



0 dB = 14.7 W/kg = 11.67 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 12.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d141

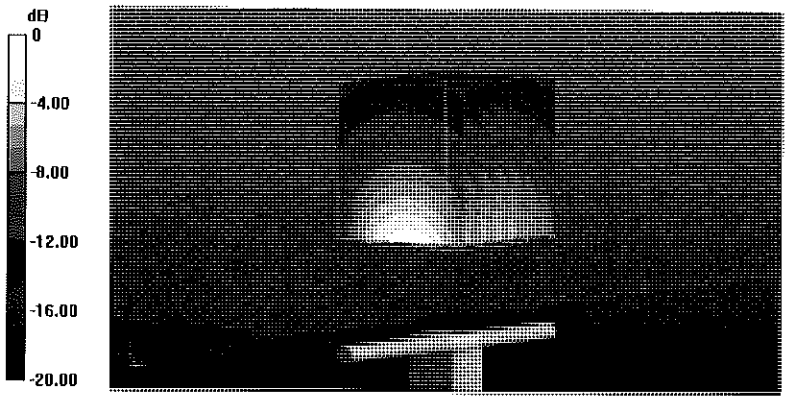
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.47 S/m; ε_r = 55.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.15, 8.15, 8.15); Calibrated: 30.12.2017;
- 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)

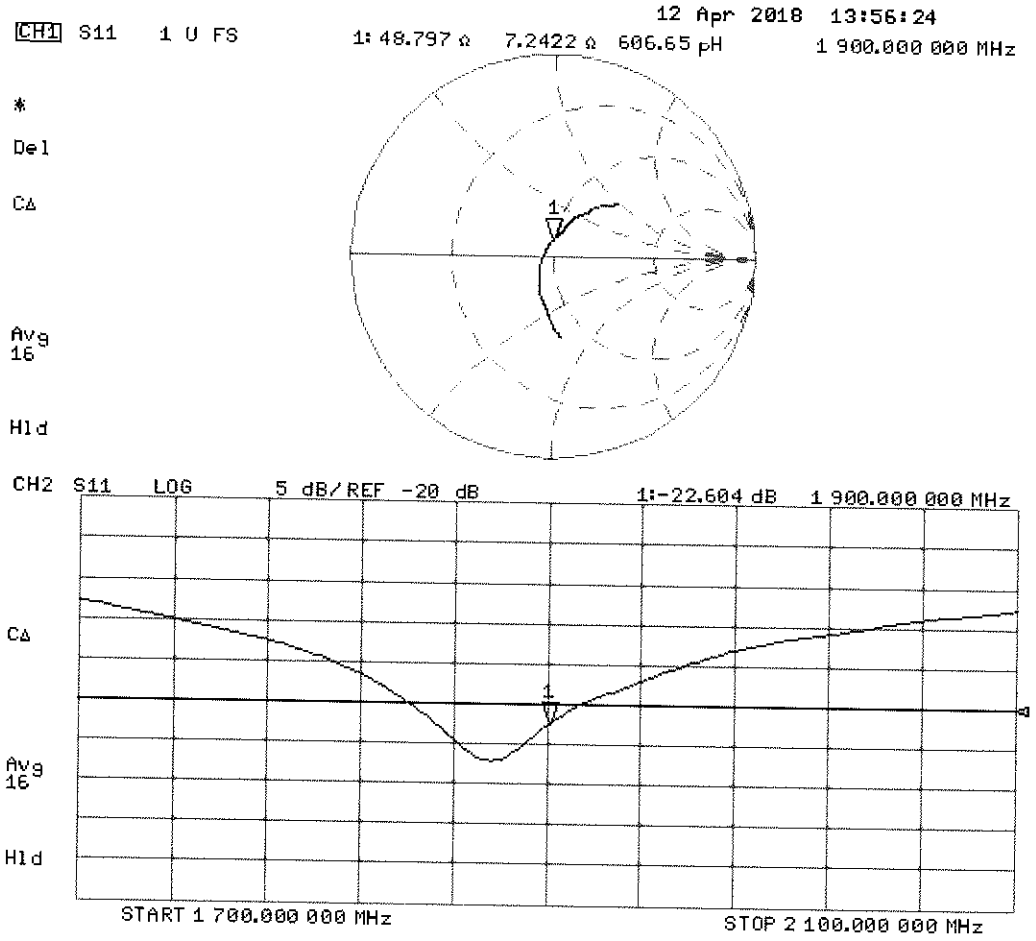
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 103.8 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 9.73 W/kg; SAR(10 g) = 5.2 W/kg
Maximum value of SAR (measured) = 14.5 W/kg



0 dB = 14.5 W/kg = 11.61 dBW/kg

Impedance Measurement Plot for Body TSL



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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: D2450V2-882_Feb18

CALIBRATION CERTIFICATE

Object D2450V2 - SN:882

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

BN ✓
03-02-2018

Calibration date: February 07, 2018

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: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 7, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.9 ± 6 %	1.87 mho/m ± 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	13.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**52.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.5 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.4 ± 6 %	2.04 mho/m ± 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	12.9 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**50.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.98 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**23.6 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.0 Ω + 1.3 jΩ
Return Loss	- 32.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.8 Ω + 3.7 jΩ
Return Loss	- 28.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.156 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	October 06, 2011

DASY5 Validation Report for Head TSL

Date: 07.02.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:882

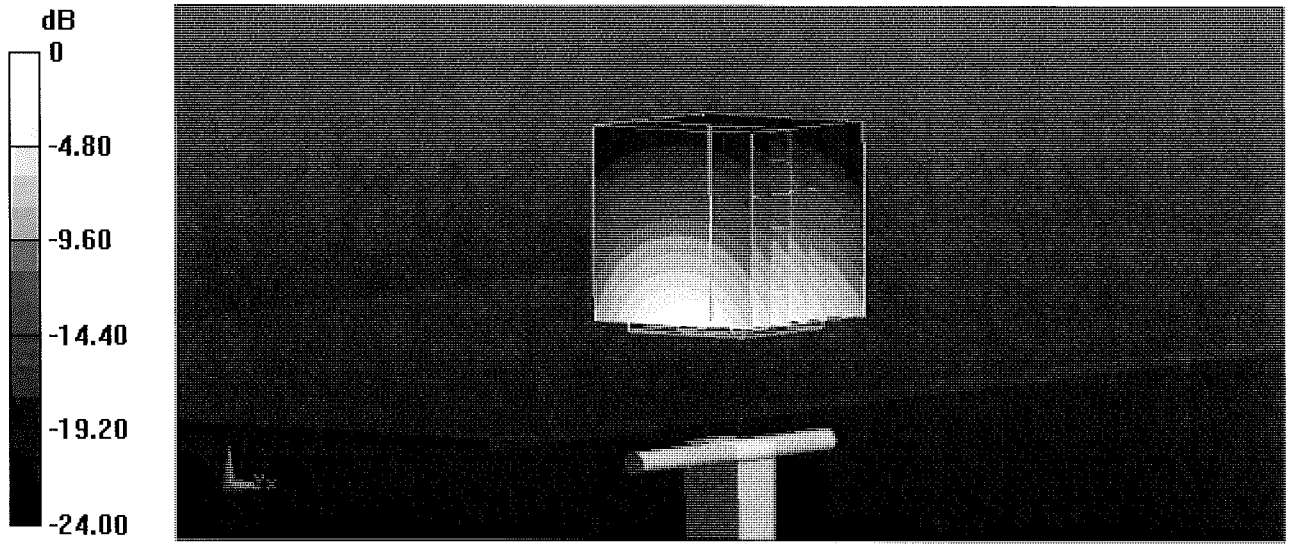
Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.87 S/m; ε_r = 37.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.88, 7.88, 7.88); Calibrated: 30.12.2017;
- 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)

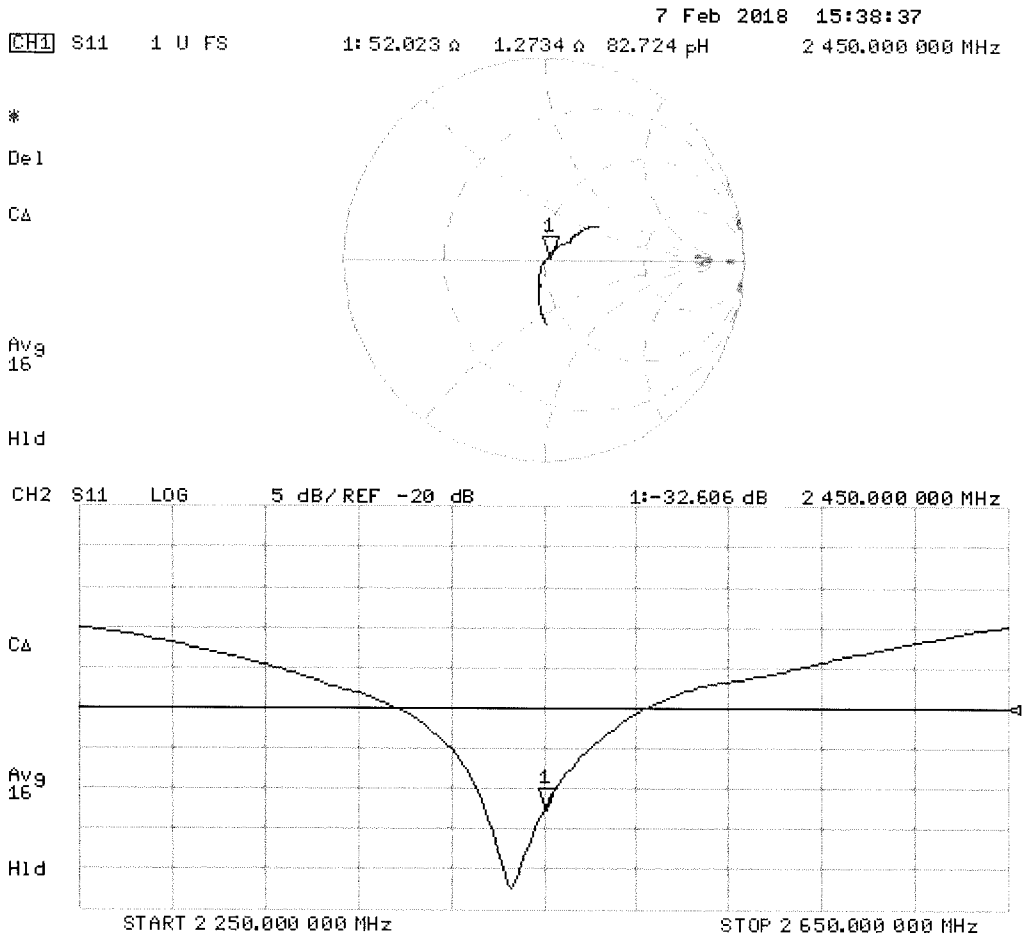
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 112.2 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.1 W/kg
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.22 W/kg
Maximum value of SAR (measured) = 21.6 W/kg



0 dB = 21.6 W/kg = 13.34 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 07.02.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:882

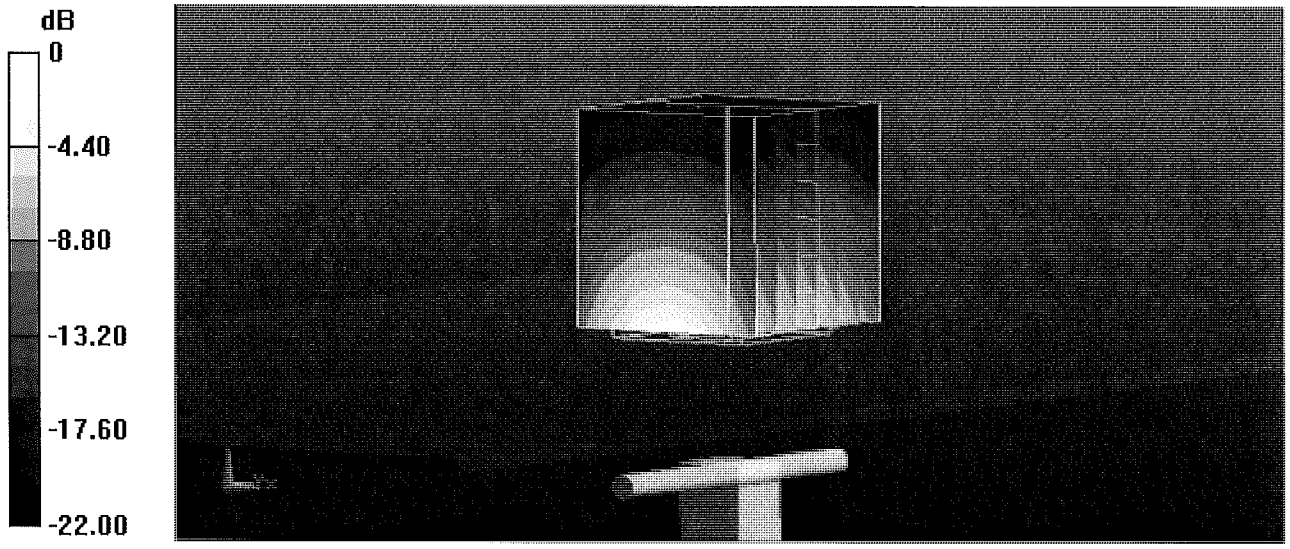
Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.04 S/m; ε_r = 51.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.01, 8.01, 8.01); Calibrated: 30.12.2017;
- 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)

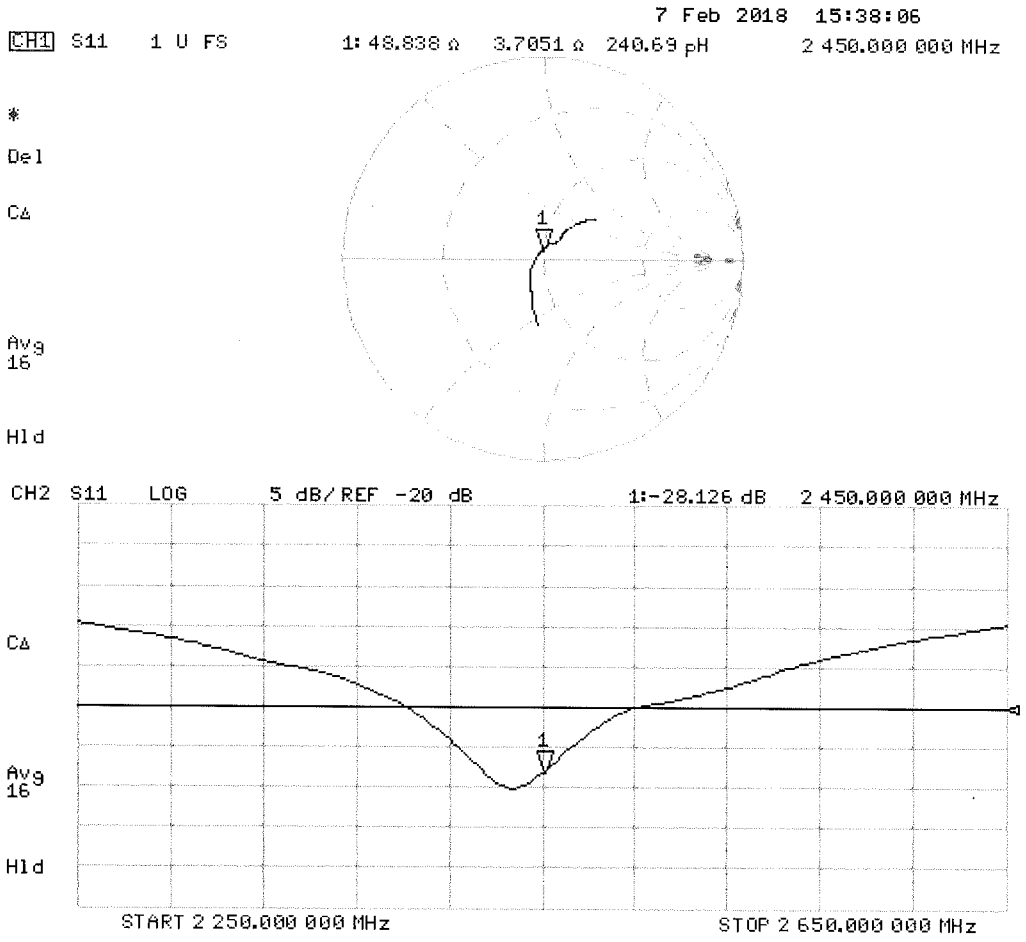
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 107.8 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 25.9 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.98 W/kg
Maximum value of SAR (measured) = 21.2 W/kg



0 dB = 21.2 W/kg = 13.26 dBW/kg

Impedance Measurement Plot for Body TSL



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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client PC Test

Certificate No: D2600V2-1004_Apr18

CALIBRATION CERTIFICATE

Object: D2600V2 - SN:1004

Calibration procedure(s): QA CAL-05.v10
Calibration procedure for dipole validation kits above 700 MHz

BN ✓
05-01-2018

Calibration date: April 11, 2018

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-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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:	Michael Weber	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 12, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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 ± 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 ± 0.2) °C	37.8 ± 6 %	2.03 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.3 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**55.9 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (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	**25.1 W/kg ± 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 ± 0.2) °C	52.1 ± 6 %	2.19 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.8 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**54.8 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.20 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**24.7 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.7 Ω - 5.7 jΩ
Return Loss	- 24.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.0 Ω - 3.8 jΩ
Return Loss	- 24.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 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	December 23, 2006

DASY5 Validation Report for Head TSL

Date: 11.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1004

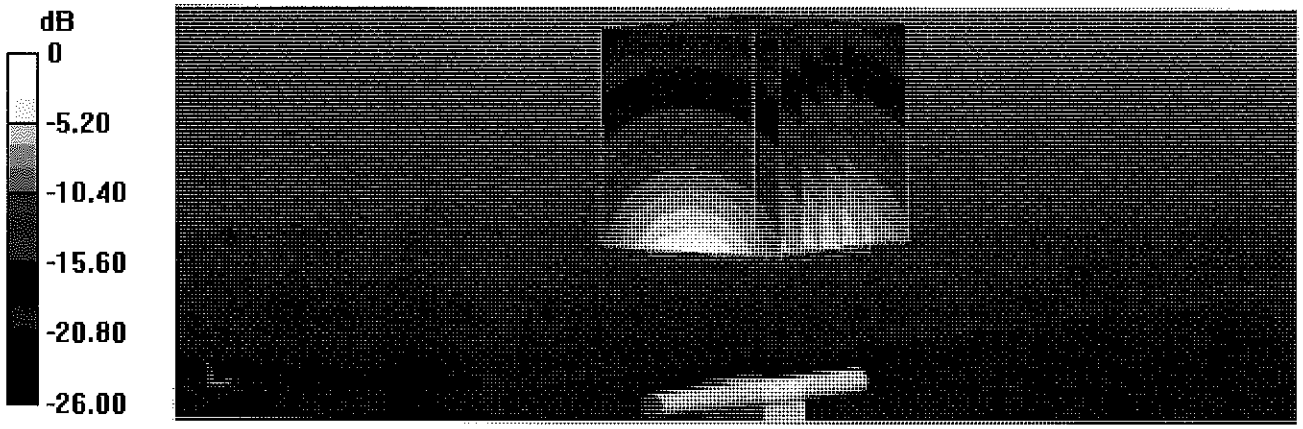
Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.03 S/m; ε_r = 37.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.7, 7.7, 7.7); Calibrated: 30.12.2017;
- 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)

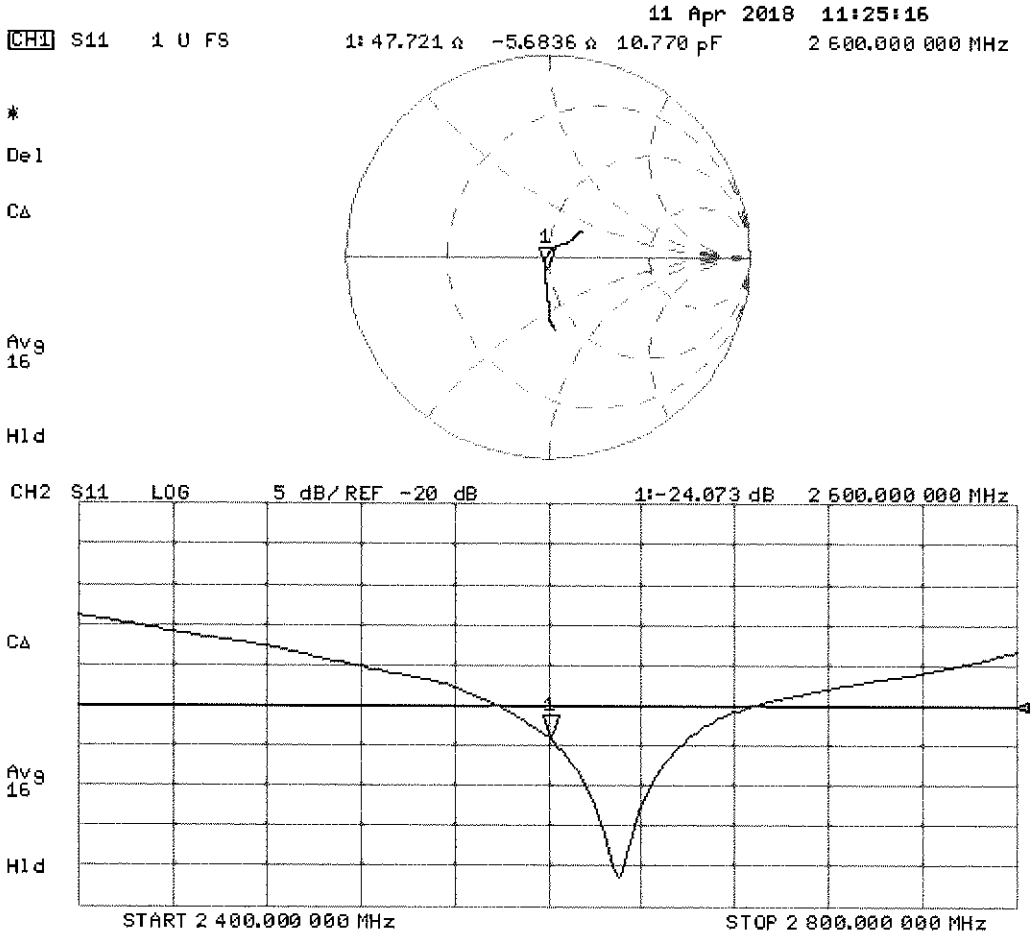
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 118.5 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 28.6 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.35 W/kg
Maximum value of SAR (measured) = 23.9 W/kg



0 dB = 23.9 W/kg = 13.78 dBW/kg

Impedance Measurement Plot for Head TSL



Date: 11.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1004

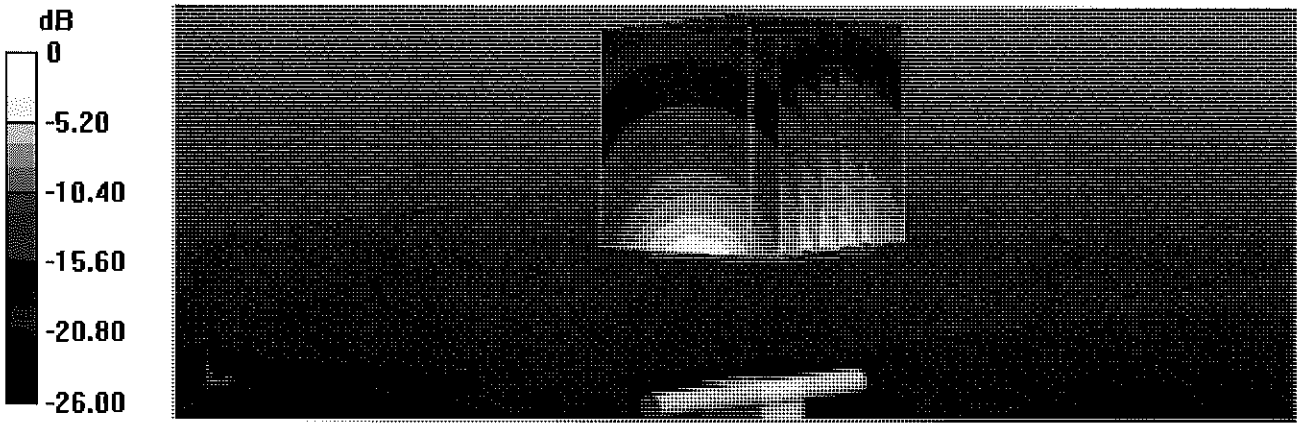
Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.19 S/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.81, 7.81, 7.81); Calibrated: 30.12.2017;
- 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)

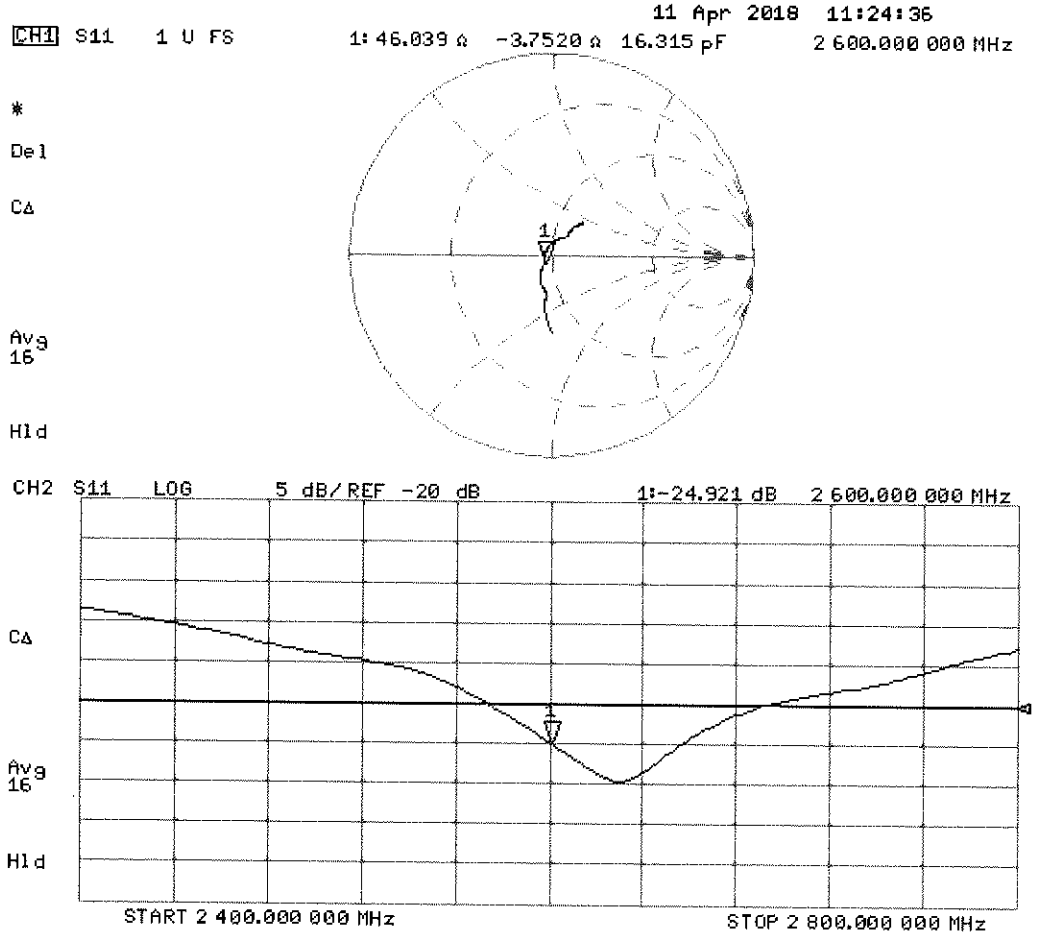
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.5 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 28.3 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.2 W/kg
Maximum value of SAR (measured) = 22.9 W/kg



0 dB = 22.9 W/kg = 13.60 dBW/kg

Impedance Measurement Plot for Body TSL



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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D5GHzV2-1057_Jan18

CALIBRATION CERTIFICATE

Object D5GHzV2 - SN:1057

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

BN ✓
01-25-2018

Calibration date: January 16, 2018

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	30-Dec-17 (No. EX3-3503_Dec17)	Dec-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: January 18, 2018

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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	5200 MHz ± 1 MHz 5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz 5800 MHz ± 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 ± 0.2) °C	36.2 ± 6 %	4.55 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**79.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.8 W/kg ± 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	35.8 ± 6 %	4.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**84.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 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	35.5 ± 6 %	5.06 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.5 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (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	**23.0 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.3 ± 6 %	5.41 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.36 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**73.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.06 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.4 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	47.2 ± 6 %	5.48 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.64 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (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)**

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	46.6 ± 6 %	5.94 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**79.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.3 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	46.3 ± 6 %	6.15 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.72 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.2 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.2 ± 6 %	6.22 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (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	50.0 Ω - 5.5 jΩ
Return Loss	- 25.2 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.7 Ω - 2.1 jΩ
Return Loss	- 26.2 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	52.7 Ω + 0.0 jΩ
Return Loss	- 31.5 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	49.3 Ω - 6.7 jΩ
Return Loss	- 23.4 dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	48.4 Ω - 3.9 jΩ
Return Loss	- 27.4 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.3 Ω - 1.6 jΩ
Return Loss	- 25.6 dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	52.6 Ω + 1.1 jΩ
Return Loss	- 31.2 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	51.8 Ω - 0.4 jΩ
Return Loss	- 34.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.203 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	November 27, 2006

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions (f=5200 MHz)

DASY system configuration, as far as not given on page 1 and 3.

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.24 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.6 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.6 W/kg ± 19.9 % (k=2)**

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.54 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**85.6 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.9 % (k=2)**

SAR result with SAM Head (Neck)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.14 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.6 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.9 % (k=2)**

SAR result with SAM Head (Ear)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	5.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**51.7 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	1.76 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**17.7 W/kg ± 19.9 % (k=2)**

Measurement Conditions (f=5800 MHz)

DASY system configuration, as far as not given on page 1 and 3.

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.62 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**86.3 W/kg ± 20.3 % (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	**24.1 W/kg ± 19.9 % (k=2)**

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.88 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**88.9 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.44 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.4 W/kg ± 19.9 % (k=2)**

SAR result with SAM Head (Neck)

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**83.4 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.5 W/kg ± 19.9 % (k=2)**

SAR result with SAM Head (Ear)

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	5.68 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**56.8 W/kg ± 20.3 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	1.89 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**18.9 W/kg ± 19.9 % (k=2)**

DASY5 Validation Report for Head TSL

Date: 11.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1057

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.55 S/m; ε_r = 36.2; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.9 S/m; ε_r = 35.8; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 5.06 S/m; ε_r = 35.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.51, 5.51, 5.51); Calibrated: 30.12.2017, ConvF(5.05, 5.05, 5.05); Calibrated: 30.12.2017, ConvF(4.98, 4.98, 4.98); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601 - modified; 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

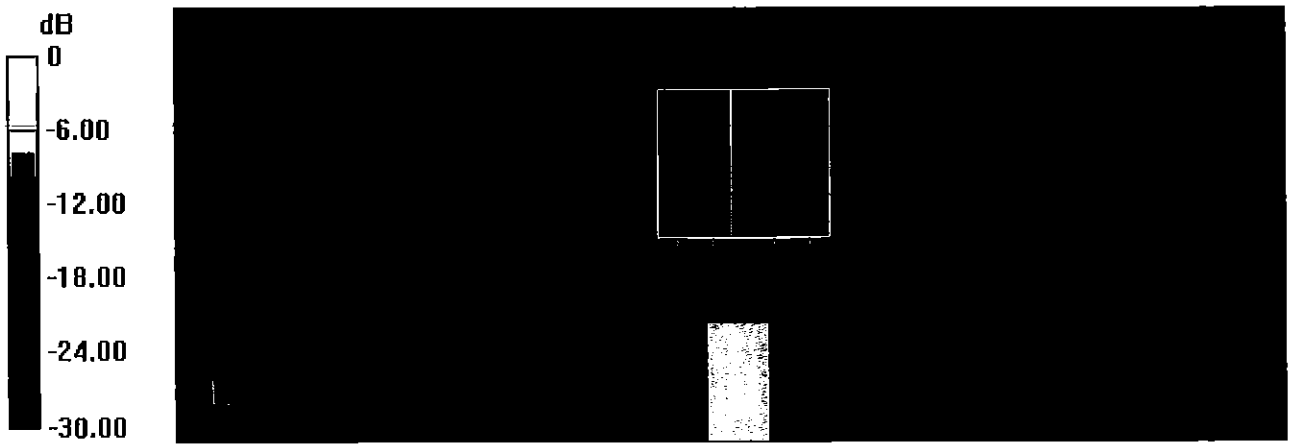
Reference Value = 72.54 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 27.5 W/kg
SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 17.7 W/kg

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 = 72.77 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 32.2 W/kg
SAR(1 g) = 8.41 W/kg; SAR(10 g) = 2.4 W/kg
Maximum value of SAR (measured) = 19.7 W/kg

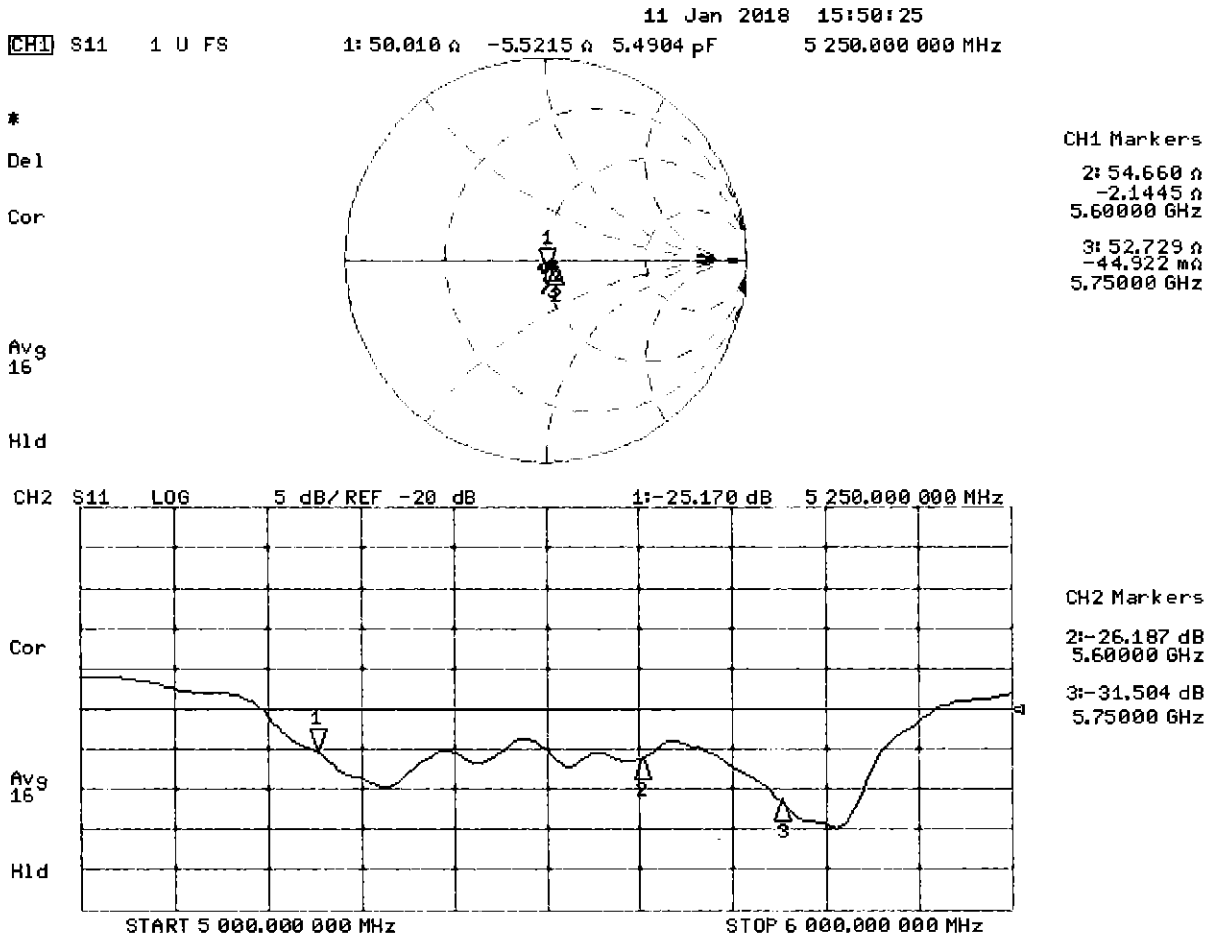
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 70.93 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 31.4 W/kg
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.3 W/kg
Maximum value of SAR (measured) = 18.9 W/kg



0 dB = 18.9 W/kg = 12.76 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 10.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1057

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz, Frequency: 5800 MHz
Medium parameters used:f = 5200 MHz; σ = 5.41 S/m; ε_r = 47.3; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5250 MHz; σ = 5.48 S/m; ε_r = 47.2; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 5.94 S/m; ε_r = 46.6; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 6.15 S/m; ε_r = 46.3; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5800 MHz; σ = 6.22 S/m; ε_r = 46.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.35, 5.35, 5.35); Calibrated: 30.12.2017, ConvF(5.26, 5.26, 5.26); Calibrated: 30.12.2017, ConvF(4.65, 4.65, 4.65); Calibrated: 30.12.2017, ConvF(4.57, 4.57, 4.57); Calibrated: 30.12.2017, ConvF(4.53, 4.53, 4.53); Calibrated: 30.12.2017;
- 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)

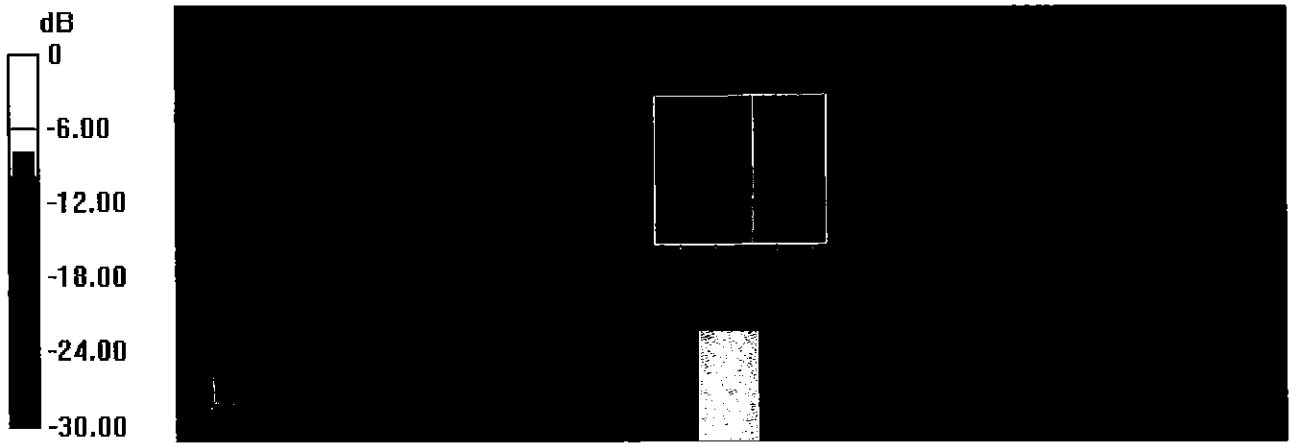
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.05 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.6 W/kg
SAR(1 g) = 7.36 W/kg; SAR(10 g) = 2.06 W/kg
Maximum value of SAR (measured) = 17.1 W/kg

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 = 64.53 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 29.4 W/kg
SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 17.9 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 = 65.09 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 34.0 W/kg
SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.25 W/kg
Maximum value of SAR (measured) = 19.5 W/kg

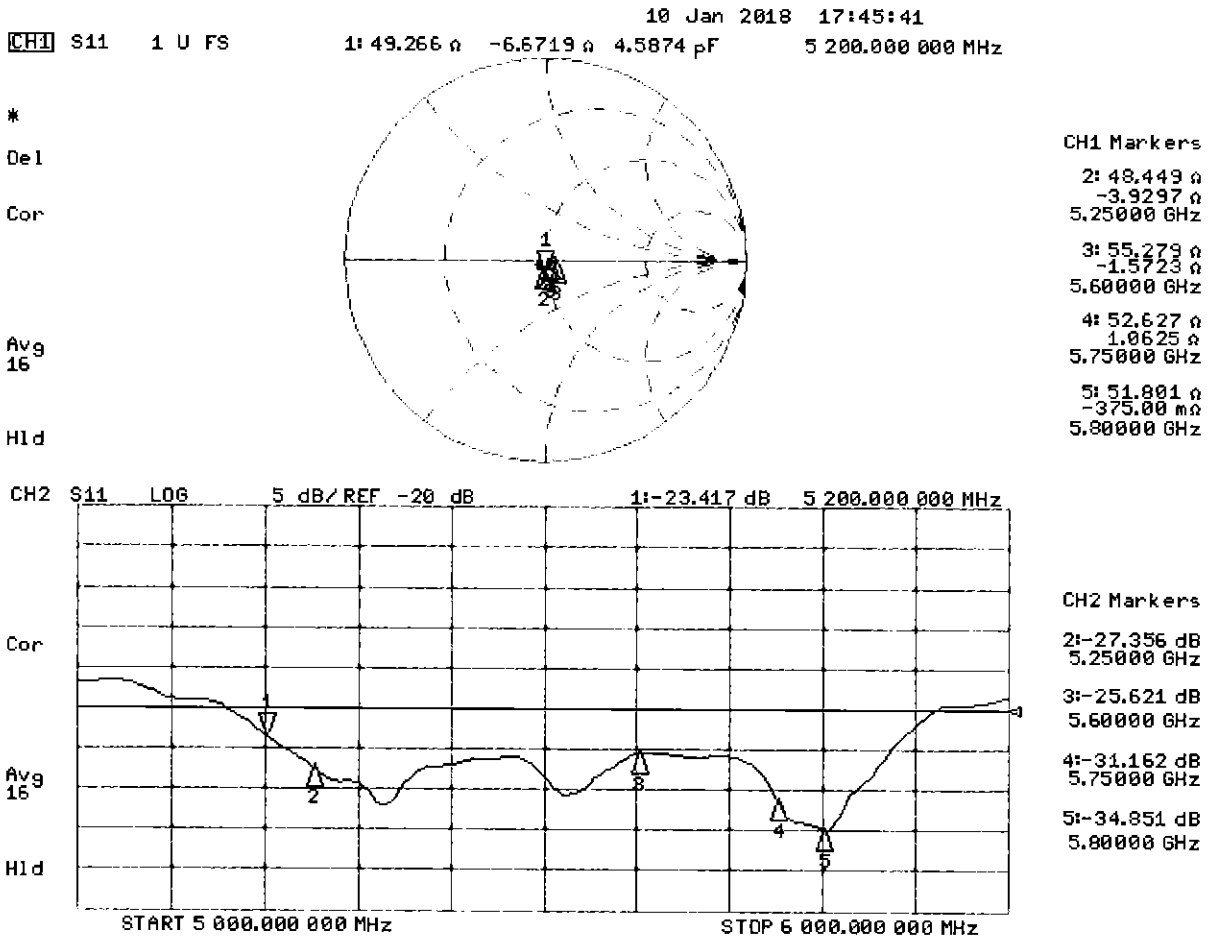
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.45 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 32.9 W/kg
SAR(1 g) = 7.72 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 18.9 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.14 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 33.3 W/kg
SAR(1 g) = 7.68 W/kg; SAR(10 g) = 2.13 W/kg



0 dB = 18.9 W/kg = 12.76 dBW/kg

Impedance Measurement Plot for Body TSL



DASY5 Validation Report for SAM Head

Date: 16.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1057

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.59 S/m; εr = 36.5; ρ = 1000 kg/m3 ,
Medium parameters used: f = 5800 MHz; σ = 5.28 S/m; εr = 35.4; ρ = 1000 kg/m3
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.75, 5.75, 5.75); Calibrated: 30.12.2017, ConvF(4.96, 4.96, 4.96); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

SAM Head/Top - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.99 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 30.6 W/kg
SAR(1 g) = 8.24 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 19.7 W/kg

SAM Head/Top - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.00 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 36.5 W/kg
SAR(1 g) = 8.62 W/kg; SAR(10 g) = 2.41 W/kg
Maximum value of SAR (measured) = 21.9 W/kg

SAM Head/Mouth - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.79 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 29.5 W/kg
SAR(1 g) = 8.54 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 20.7 W/kg

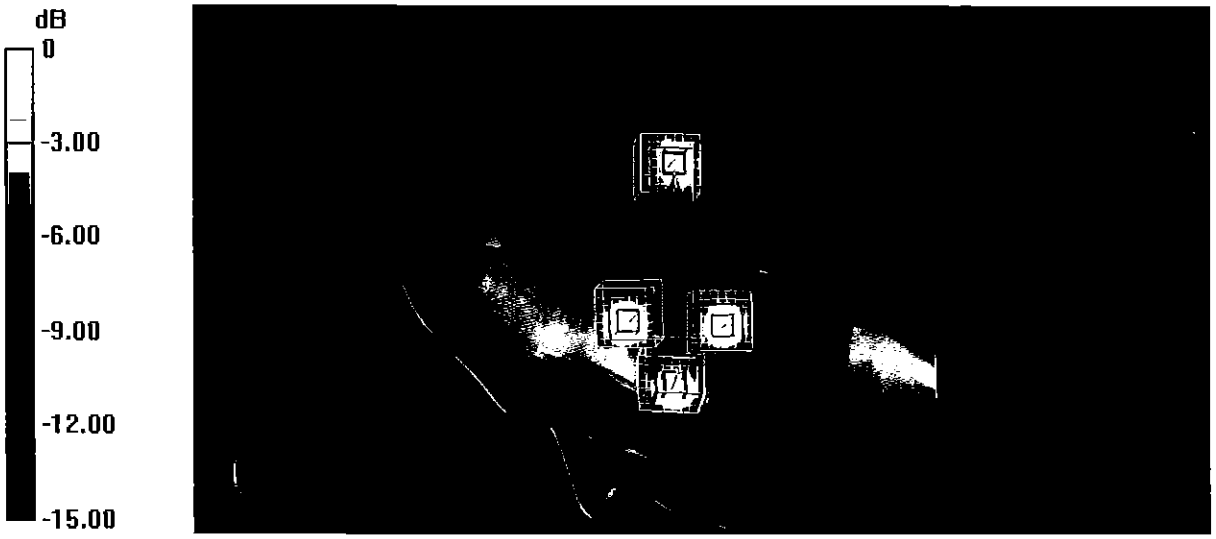
SAM Head/Mouth - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 71.69 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 34.9 W/kg
SAR(1 g) = 8.88 W/kg; SAR(10 g) = 2.44 W/kg
Maximum value of SAR (measured) = 23.0 W/kg

SAM Head/Neck - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.48 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 19.3 W/kg

SAM Head/Neck - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.90 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 33.4 W/kg
SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 21.8 W/kg

SAM Head/Ear - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 54.68 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 5.16 W/kg; SAR(10 g) = 1.76 W/kg
Maximum value of SAR (measured) = 11.1 W/kg

SAM Head/Ear - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 56.96 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 21.2 W/kg
SAR(1 g) = 5.68 W/kg; SAR(10 g) = 1.89 W/kg
Maximum value of SAR (measured) = 13.8 W/kg



0 dB = 13.8 W/kg = 11.40 dBW/kg

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D750V3-1003_Jan18

CALIBRATION CERTIFICATE

Object D750V3 - SN:1003

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

Calibration date: January 15, 2018

BN
01-25-2018

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: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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: January 15, 2018

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:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5.0 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.28 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.42 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.0 ± 6 %	0.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.58 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.43 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.71 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.8 Ω - 2.1 jΩ
Return Loss	- 27.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.2 Ω - 6.2 jΩ
Return Loss	- 24.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.043 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	January 21, 2009

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions

DASY system configuration, as far as not given on page 1 and 3.

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.98 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**7.94 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.32 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.22 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.52 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Neck)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.01 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.06 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.52 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Ear)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.67 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.70 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**4.60 W/kg ± 16.9 % (k=2)**

Date: 12.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1003

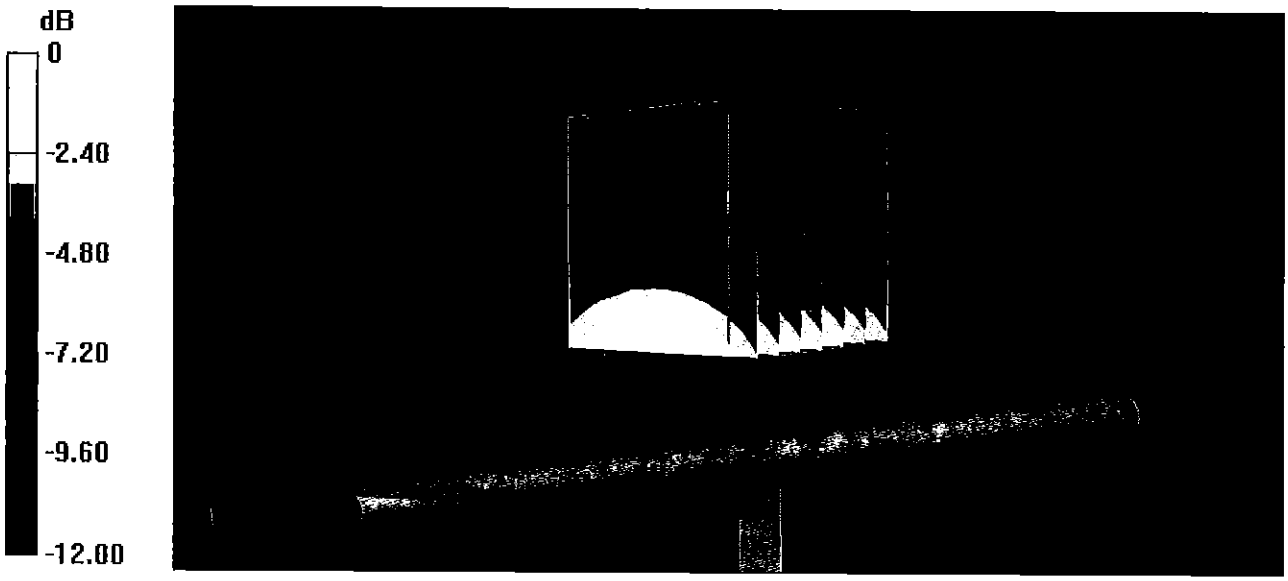
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.9 S/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.22, 10.22, 10.22); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

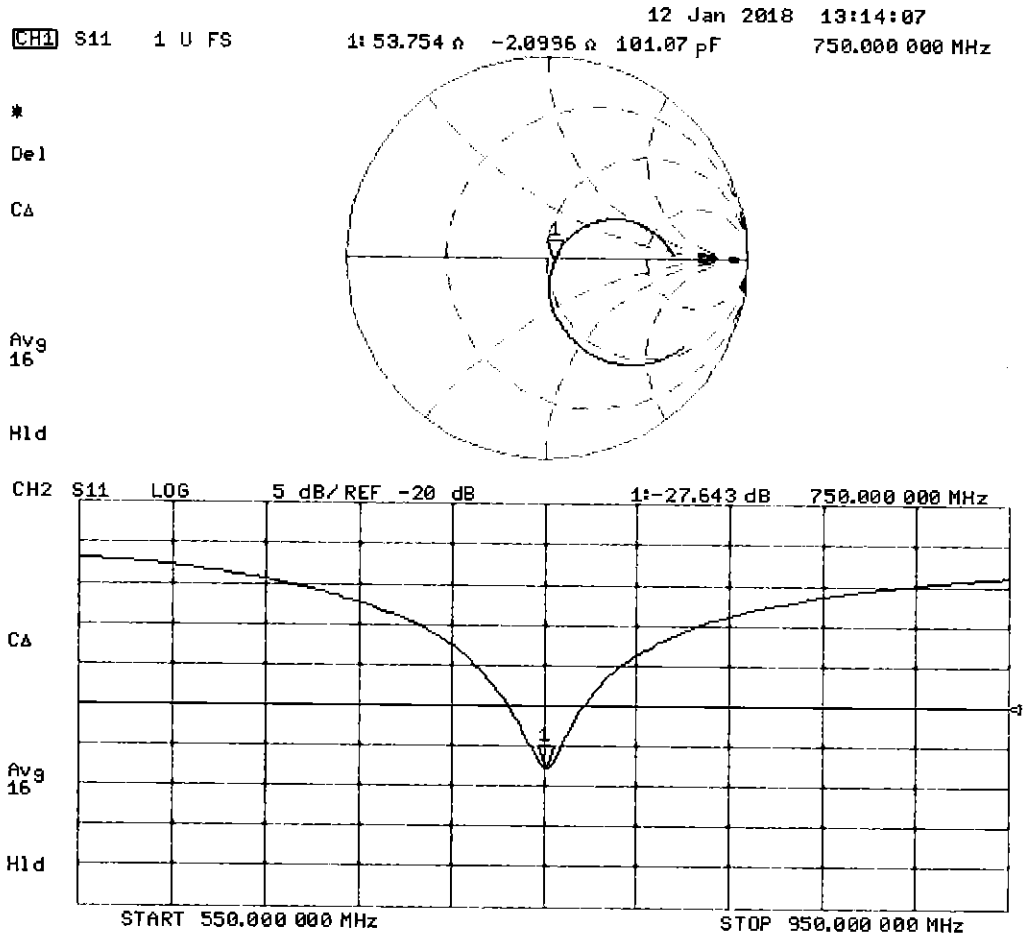
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.11 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.15 W/kg
SAR(1 g) = 2.1 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Impedance Measurement Plot for Head TSL



Date: 12.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1003

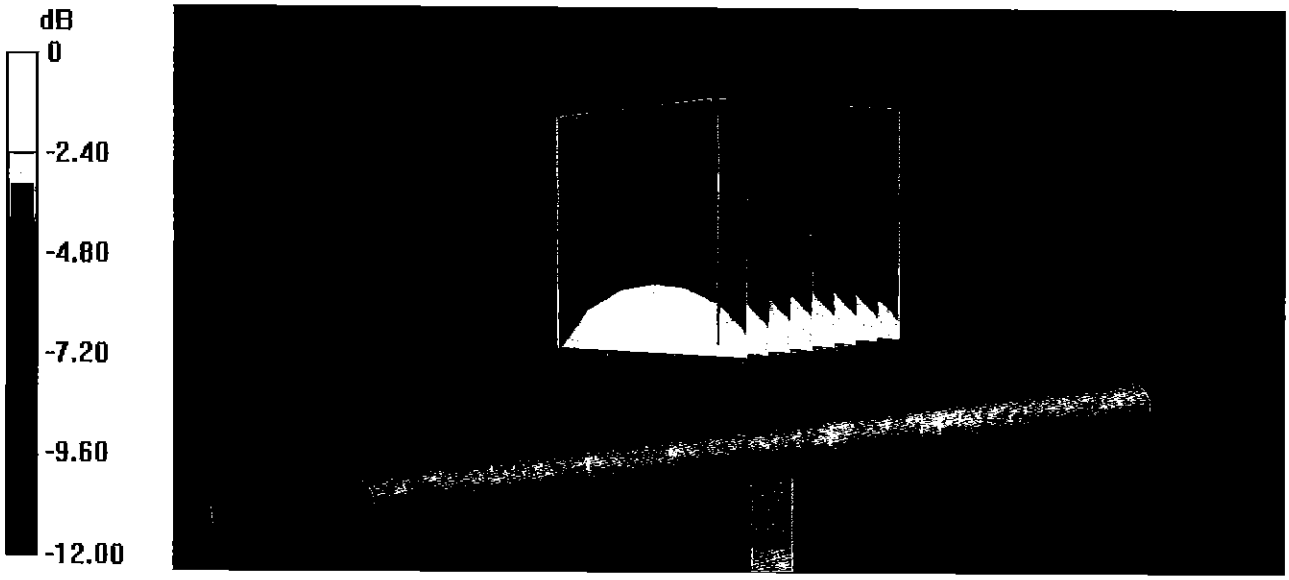
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.96 S/m; ε_r = 55; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.19, 10.19, 10.19); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

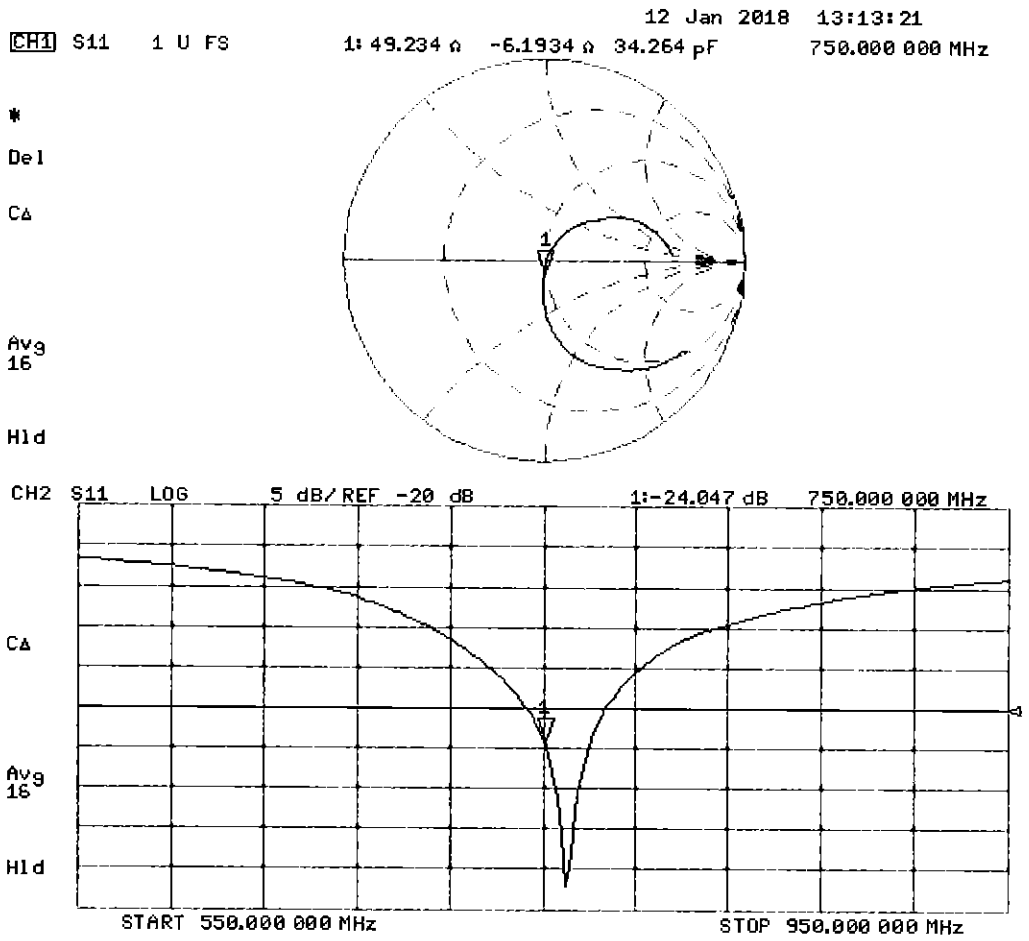
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x8x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.31 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.17 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.43 W/kg
Maximum value of SAR (measured) = 2.83 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg

Impedance Measurement Plot for Body TSL



Date: 15.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1003

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.9 S/m; ε_r = 44.2; ρ = 1000 kg/m^3
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

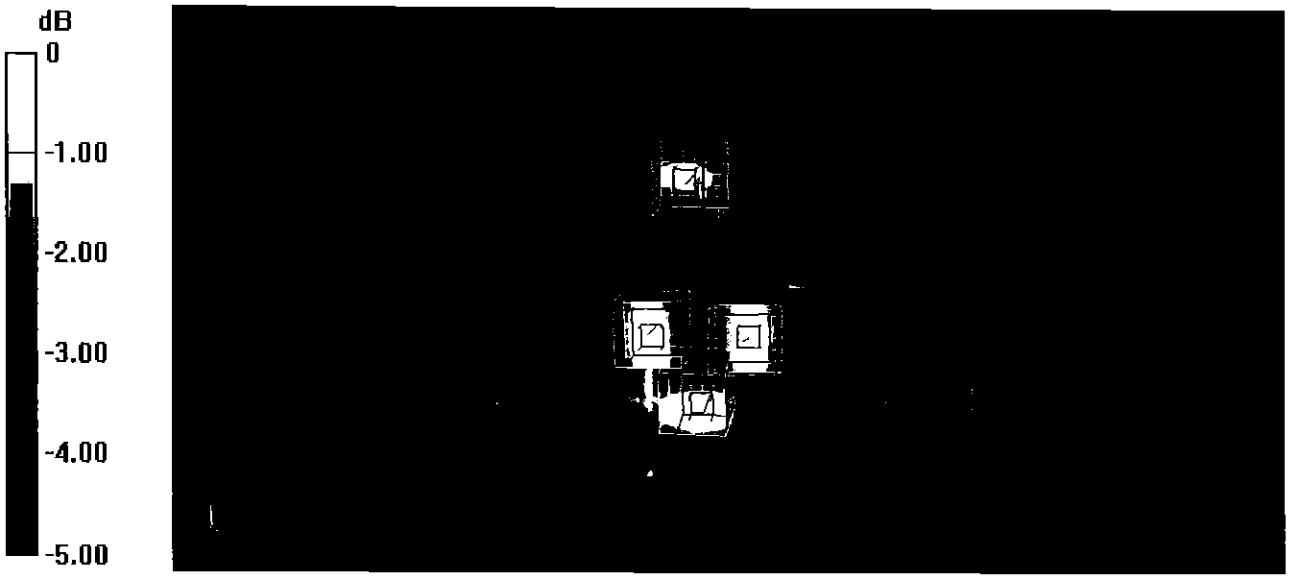
- Probe: EX3DV4 - SN7349; ConvF(10.22, 10.22, 10.22); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

SAM Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.79 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.89 W/kg
SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.33 W/kg
Maximum value of SAR (measured) = 2.58 W/kg

SAM Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.85 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 2.94 W/kg
SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.38 W/kg
Maximum value of SAR (measured) = 2.62 W/kg

SAM Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.29 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 2.01 W/kg; SAR(10 g) = 1.38 W/kg
Maximum value of SAR (measured) = 2.56 W/kg

SAM Head/Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.01 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.31 W/kg
SAR(1 g) = 1.67 W/kg; SAR(10 g) = 1.15 W/kg
Maximum value of SAR (measured) = 2.11 W/kg



0 dB = 2.58 W/kg = 4.12 dBW/kg

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D835V2-4d132_Jan18

CALIBRATION CERTIFICATE

Object	D835V2 - SN:4d132
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	January 15, 2018

BN ✓
01-25-2018

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: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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: January 15, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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 = 5.0 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.7 ± 6 %	0.92 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.36 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.10 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.8 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.47 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.71 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.62 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.39 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω - 2.9 jΩ
Return Loss	- 29.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.4 Ω - 5.7 jΩ
Return Loss	- 23.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.386 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	July 22, 2011

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions

DASY system configuration, as far as not given on page 1 and 3.

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.41 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.21 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.47 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.69 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.64 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.45 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Neck)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.22 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.59 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.25 W/kg ± 16.9 % (k=2)**

SAR result with SAM Head (Ear)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.03 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**7.96 W/kg ± 17.5 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.39 W/kg ± 16.9 % (k=2)**

DASY5 Validation Report for Head TSL

Date: 08.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d132

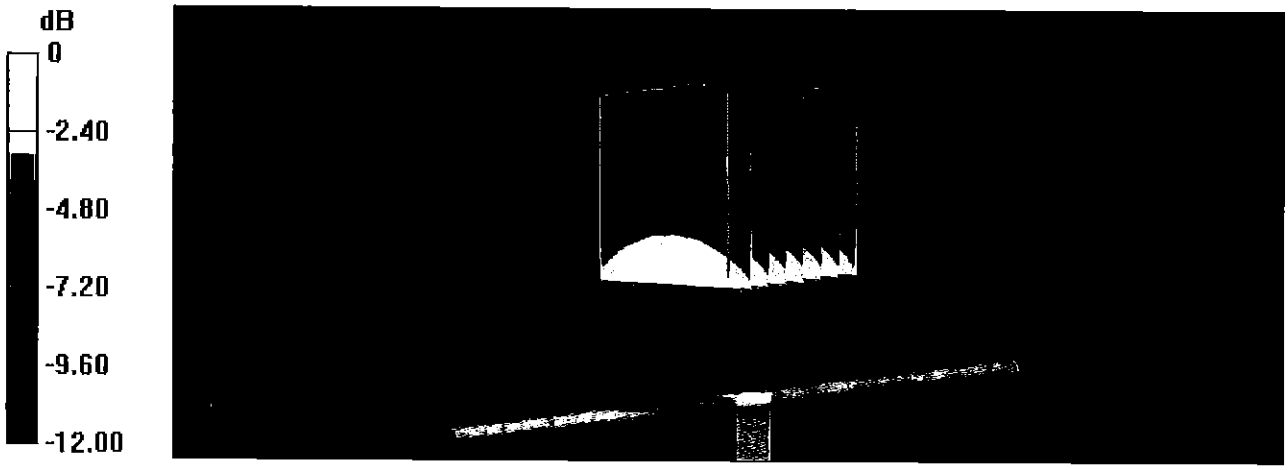
Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.92 S/m; ε_r = 40.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.9, 9.9, 9.9); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

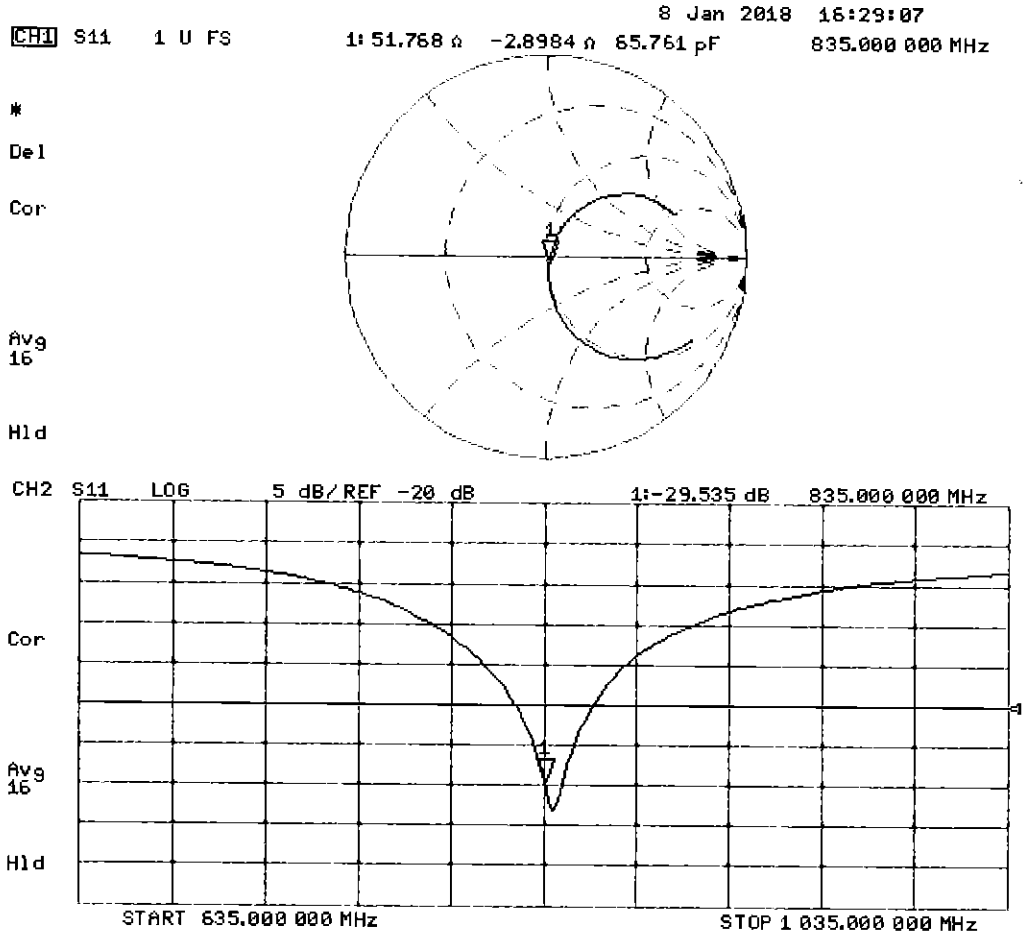
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 63.23 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.64 W/kg
SAR(1 g) = 2.39 W/kg; SAR(10 g) = 1.55 W/kg
Maximum value of SAR (measured) = 3.22 W/kg



0 dB = 3.22 W/kg = 5.08 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 08.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d132

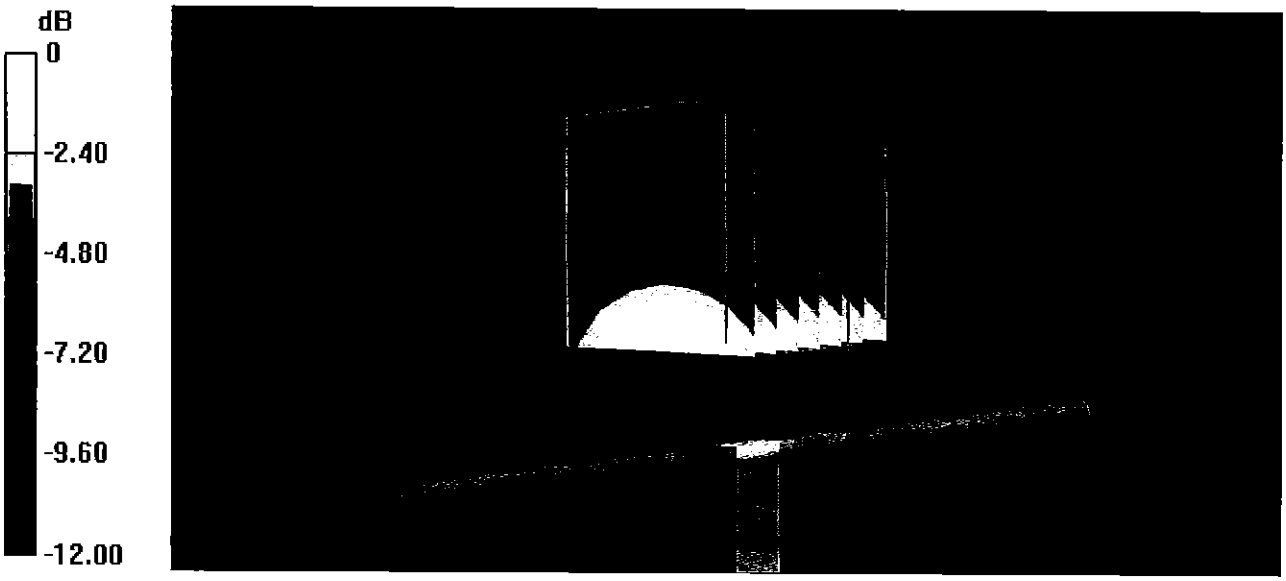
Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.99 S/m; ε_r = 54.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.05, 10.05, 10.05); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

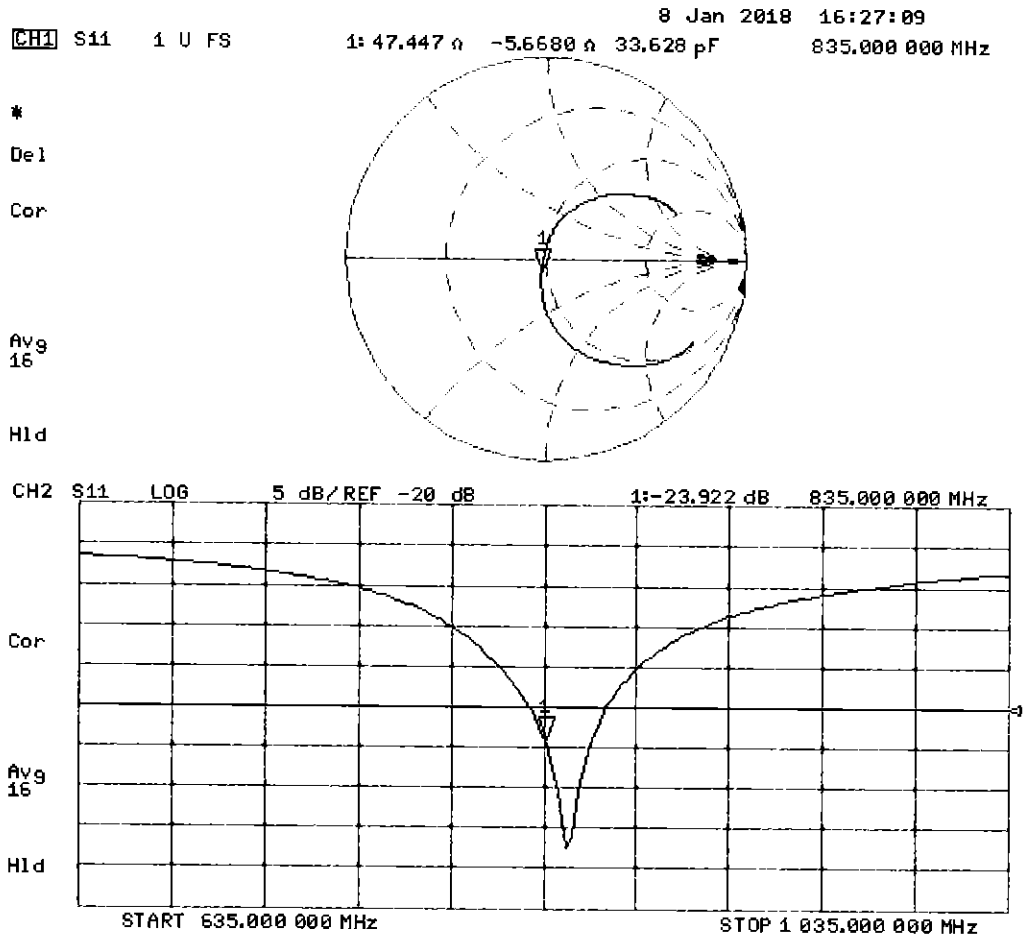
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.55 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.66 W/kg
SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.62 W/kg
Maximum value of SAR (measured) = 3.24 W/kg



0 dB = 3.24 W/kg = 5.11 dBW/kg

Impedance Measurement Plot for Body TSL



DASY5 Validation Report for SAM Head

Date: 15.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d132

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.94 S/m; ε_r = 44.1; ρ = 1000 kg/m^3
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

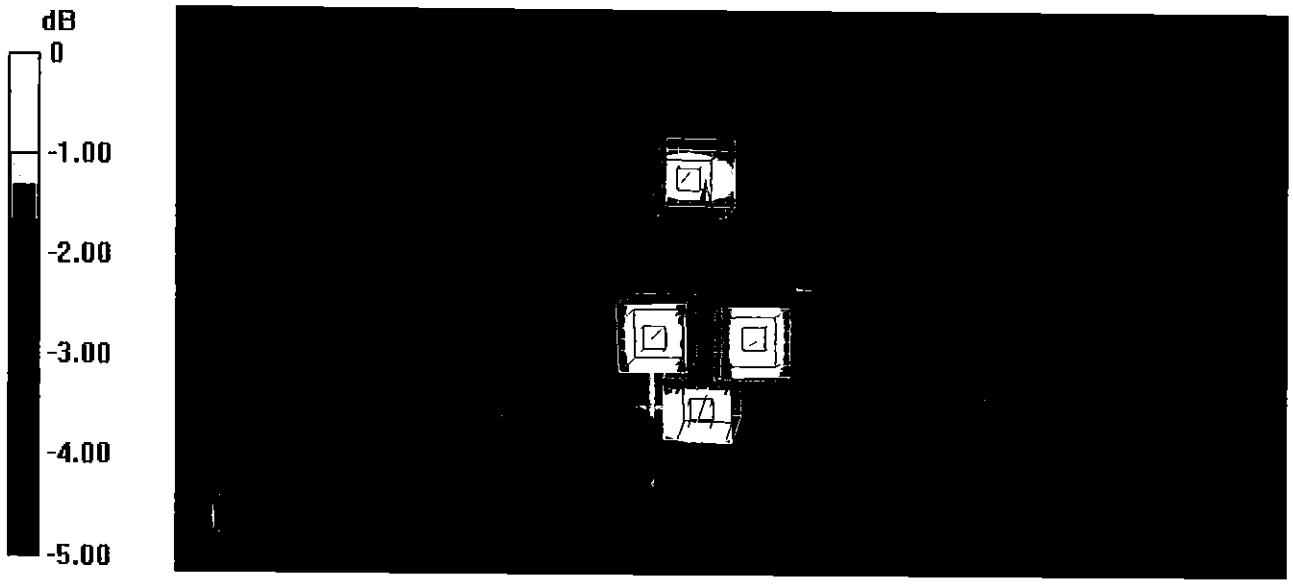
- Probe: EX3DV4 - SN7349; ConvF(9.9, 9.9, 9.9); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

SAM Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 61.00 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.56 W/kg
SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.58 W/kg
Maximum value of SAR (measured) = 3.16 W/kg

SAM Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.99 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.65 W/kg
SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.64 W/kg
Maximum value of SAR (measured) = 3.19 W/kg

SAM Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.20 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 3.33 W/kg
SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 3.04 W/kg

SAM Head/Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.03 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.90 W/kg
SAR(1 g) = 2.03 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (measured) = 2.61 W/kg



0 dB = 2.61 W/kg = 4.17 dBW/kg

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D1900V2-5d148_Feb18

CALIBRATION CERTIFICATE

Object D1900V2 - SN:5d148

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

BN ✓ 03-02-2018

Calibration date: February 07, 2018

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: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-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:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 7, 2018

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.7 ± 6 %	1.39 mho/m ± 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	9.95 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**40.1 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.0 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.2 ± 6 %	1.48 mho/m ± 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	9.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.9 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.1 Ω + 5.8 jΩ
Return Loss	- 24.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.8 Ω + 6.5 jΩ
Return Loss	- 23.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 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	March 11, 2011

DASY5 Validation Report for Head TSL

Date: 07.02.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d148

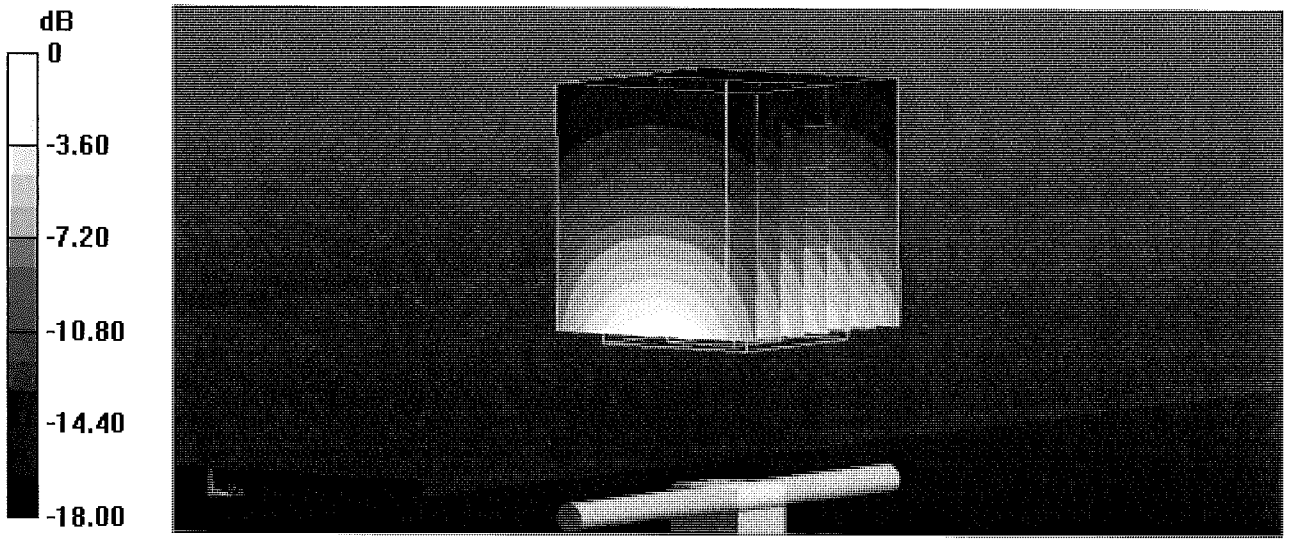
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.39 S/m; ε_r = 40.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.18, 8.18, 8.18); Calibrated: 30.12.2017;
- 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)

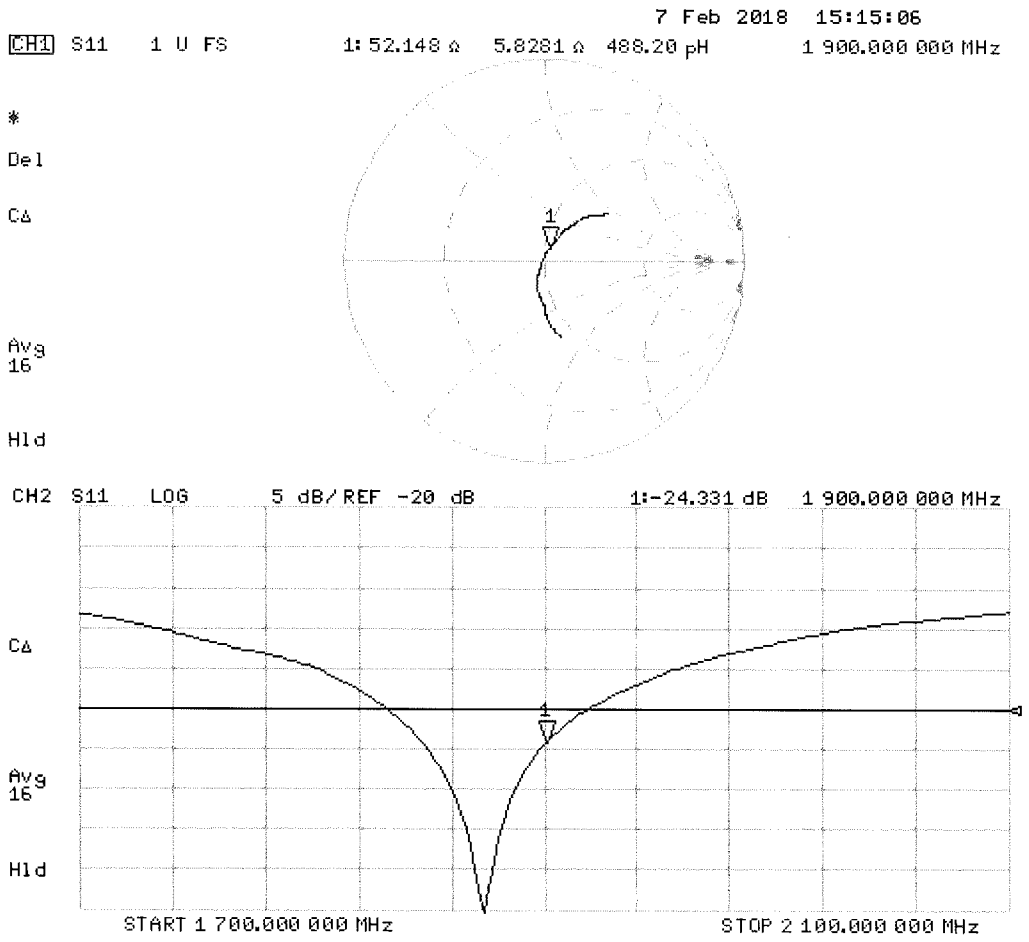
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.6 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 9.95 W/kg; SAR(10 g) = 5.22 W/kg
Maximum value of SAR (measured) = 15.3 W/kg



0 dB = 15.3 W/kg = 11.85 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 07.02.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d148

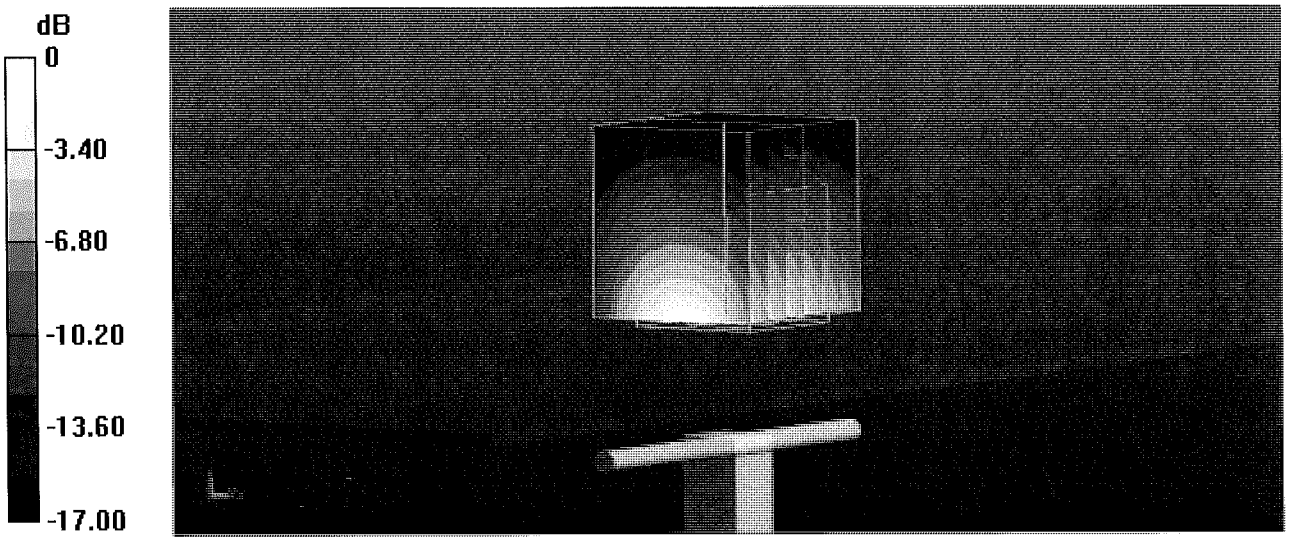
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.48 S/m; ε_r = 55.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.15, 8.15, 8.15); Calibrated: 30.12.2017;
- 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)

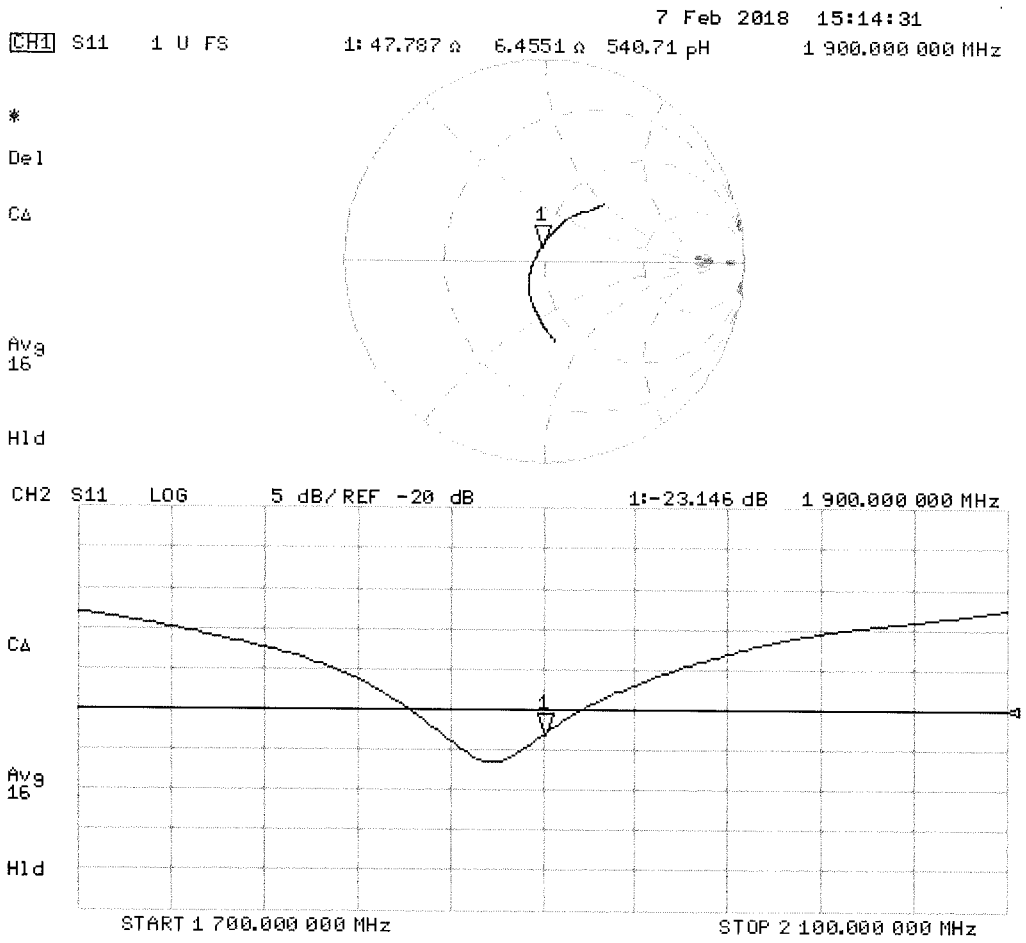
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 103.0 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.68 W/kg; SAR(10 g) = 5.14 W/kg
Maximum value of SAR (measured) = 14.4 W/kg



0 dB = 14.4 W/kg = 11.58 dBW/kg

Impedance Measurement Plot for Body TSL



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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**

Certificate No: D5GHzV2-1237_Aug17

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN:1237
Calibration procedure(s)	QA CAL-22.v2 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	August 15, 2017

PMV 8/27/17

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	28-Mar-17 (No. DAE4-601_Mar17)	Mar-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-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Johannes Kurikka	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 16, 2017

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) 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
b) 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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) 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 ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 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 ± 0.2) °C	34.7 ± 6 %	4.49 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.14 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.0 W/kg ± 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	34.2 ± 6 %	4.84 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.5 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.5 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	34.0 ± 6 %	4.99 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.8 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	47.0 ± 6 %	5.46 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.75 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (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	46.4 ± 6 %	5.93 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.91 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**78.5 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.1 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 ± 6 %	6.13 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.77 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**77.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.16 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.4 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	49.9 Ω - 5.3 jΩ
Return Loss	- 25.5 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	51.9 Ω + 2.3 jΩ
Return Loss	- 30.7 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	55.6 Ω - 0.5 jΩ
Return Loss	- 25.5 dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	46.9 Ω - 4.2 jΩ
Return Loss	- 25.4 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	50.2 Ω + 3.0 jΩ
Return Loss	- 30.4 dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	53.4 Ω + 0.2 jΩ
Return Loss	- 29.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.194 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	May 04, 2015

DASY5 Validation Report for Head TSL

Date: 15.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1237

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.49 S/m; ε_r = 34.7; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.84 S/m; ε_r = 34.2; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 4.99 S/m; ε_r = 34; ρ = 1000 kg/m^3
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: 28.03.2017
- 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

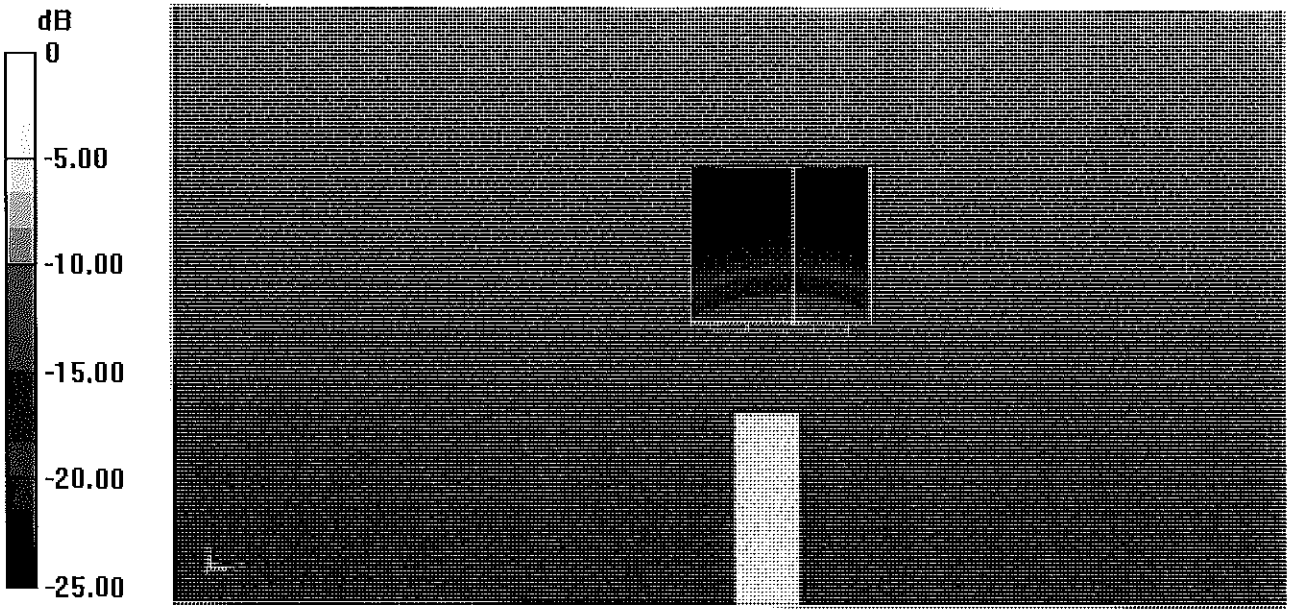
Reference Value = 70.08 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 30.6 W/kg
SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 19.2 W/kg

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 = 70.04 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 32.7 W/kg
SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.38 W/kg
Maximum value of SAR (measured) = 19.8 W/kg

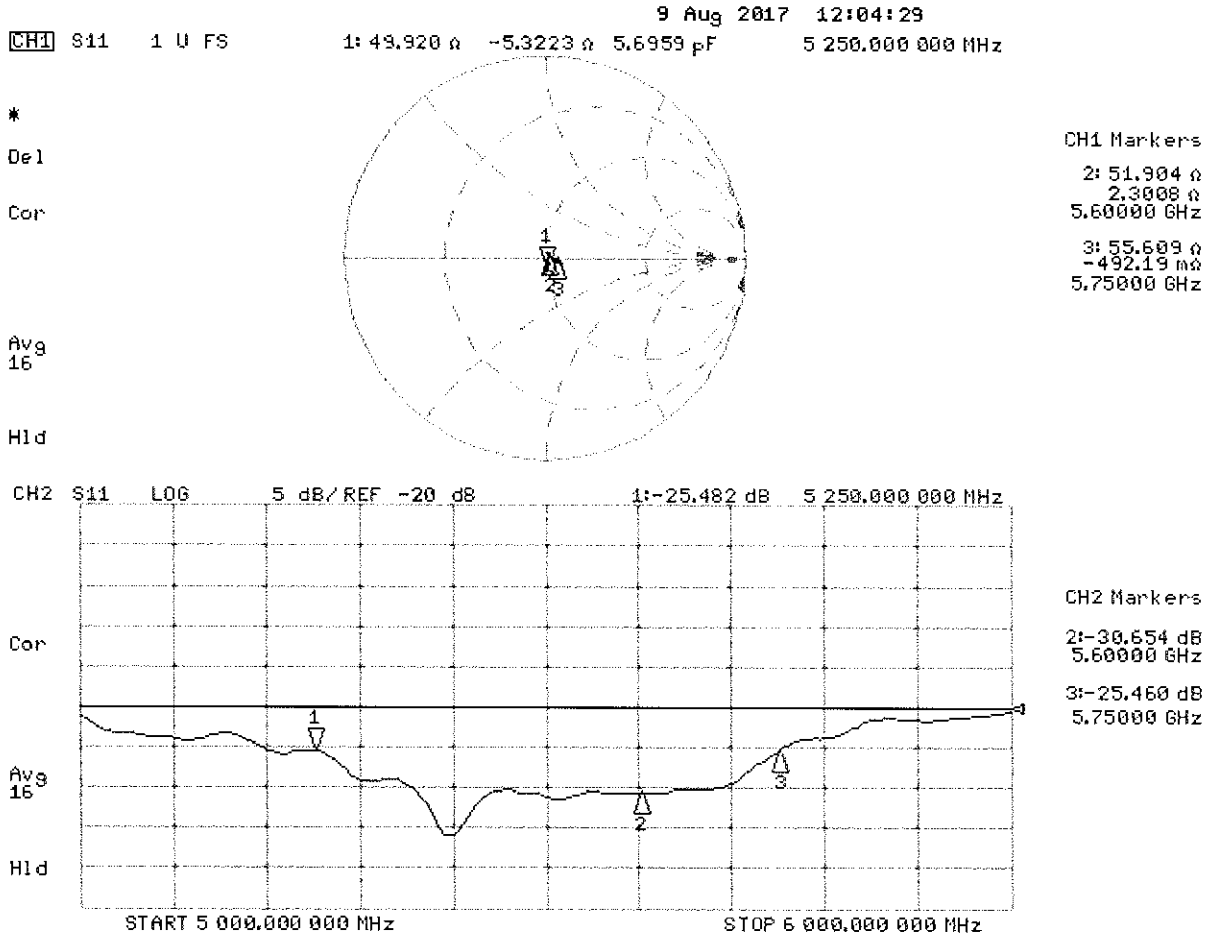
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 69.11 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 32.4 W/kg
SAR(1 g) = 8.1 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 19.6 W/kg



0 dB = 19.2 W/kg = 12.83 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 08.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1237

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 5.46 S/m; ε_r = 47; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 5.93 S/m; ε_r = 46.4; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 6.13 S/m; ε_r = 46.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

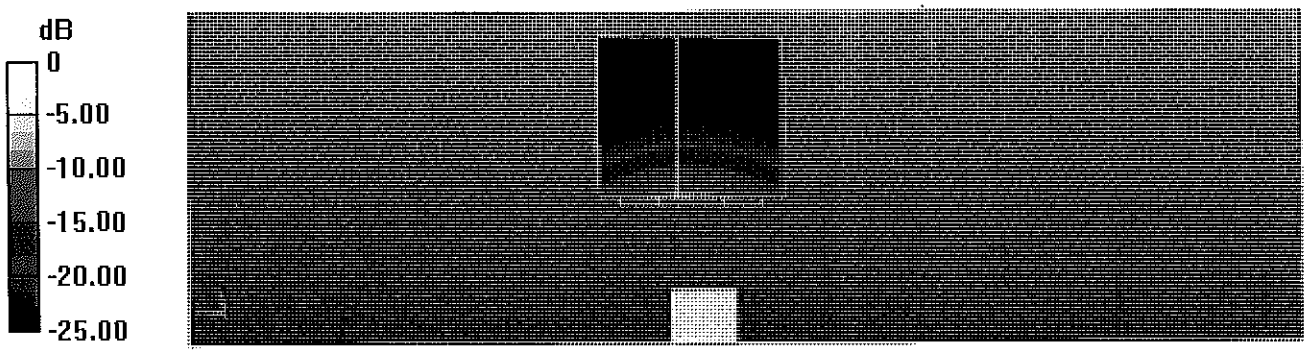
DASY52 Configuration:

- 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: 28.03.2017
- 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=5250MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.87 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 29.9 W/kg
SAR(1 g) = 7.75 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 18.4 W/kg

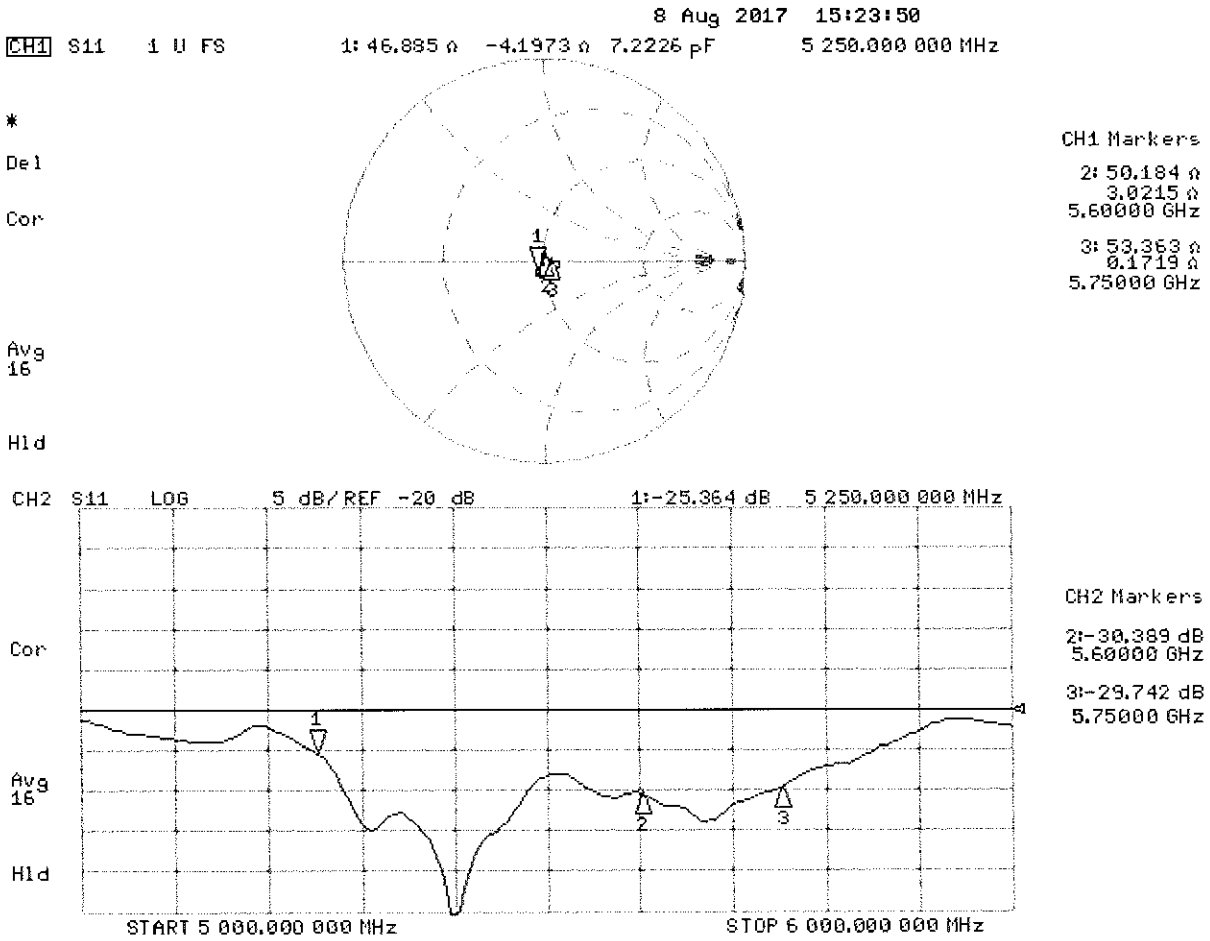
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.11 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 19.3 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 = 63.64 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 33.8 W/kg
SAR(1 g) = 7.77 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 18.4 W/kg = 12.65 dBW/kg

Impedance Measurement Plot for Body TSL



APPENDIX D: SAR TISSUE SPECIFICATIONS

Measurement Procedure for Tissue verification:

1) The network analyzer and probe system was configured and calibrated.
2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
3) The complex admittance with respect to the probe aperture was measured
4) The complex relative permittivity ε_r' can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\varepsilon_r\varepsilon_0}{\left[\ln(b/a)\right]^2}\int_a^b\int_a^b\int_0^\pi \cos\phi' \frac{\exp\left[-j\omega r(\mu_0\varepsilon_r'\varepsilon_0)^{1/2}\right]}{r} d\phi' d\rho' d\rho$$

where *Y* is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

Table D-I
Composition of the Tissue Equivalent Matter

Frequency (MHz)	750	750	835	835	1750	1750	1900	1900	2450	2450	5200-5800	5200-5800
Tissue	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Ingredients (% by weight)												
Bactericide	See page 2-3	See page 2	0.1	0.1					See page 4		See page 5	
DGBE					47	31	44.92	29.44		26.7		
HEC			1	1								
NaCl			1.45	0.94	0.4	0.2	0.18	0.39		0.1		
Sucrose			57	44.9								
Polysorbate (Tween) 80												20
Water			40.45	53.06	52.6	68.8	54.9	70.17		73.2		80

2 Composition / Information on ingredients

The Item is composed of the following ingredients:

H_2O	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1 – 0.7%
	Relevant for safety; Refer to the respective Safety Data Sheet*.

Figure D-1
Composition of 750 MHz Head and Body Tissue Equivalent Matter

Note: 750MHz liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

Schmid & Partner Engineering AG

s p e a g

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

Measurement Certificate / Material Test

Item Name	**Body Tissue Simulating Liquid (MSL750V2)**
Product No.	SL AAM 075 AA (Batch: 170608-1)
Manufacturer	SPEAG

Measurement Method
TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation
Validation results were within ± 2.5% towards the target values of Methanol.

Target Parameters
Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

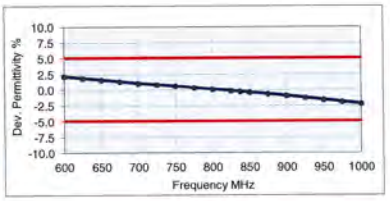
Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	20-Jun-17
Operator	CL

Additional Information

TSL Density	1.212 g/cm^3
TSL Heat-capacity	3.006 kJ/(kg*K)

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	57.3	25.02	0.84	56.1	0.95	2.2	-12.2
625	57.1	24.67	0.86	56.0	0.95	1.9	-10.1
650	56.8	24.32	0.88	55.9	0.96	1.6	-8.0
675	56.6	24.02	0.90	55.8	0.96	1.3	-5.8
700	56.3	23.71	0.92	55.7	0.96	1.1	-3.8
725	56.1	23.48	0.95	55.6	0.96	0.8	-1.5
750	55.9	23.25	0.97	55.5	0.96	0.6	0.7
775	55.6	23.04	0.99	55.4	0.97	0.3	2.9
800	55.4	22.82	1.02	55.3	0.97	0.1	5.0
825	55.2	22.65	1.04	55.2	0.98	-0.1	6.3
838	55.1	22.56	1.05	55.2	0.98	-0.3	6.9
850	54.9	22.47	1.06	55.2	0.99	-0.4	7.5
875	54.7	22.34	1.09	55.1	1.02	-0.7	6.7
900	54.5	22.21	1.11	55.0	1.05	-0.9	5.9
925	54.3	22.08	1.14	55.0	1.06	-1.3	6.9
950	54.1	21.95	1.16	54.9	1.08	-1.6	7.9
975	53.8	21.86	1.19	54.9	1.09	-1.9	9.1
1000	53.6	21.76	1.21	54.8	1.10	-2.2	10.2



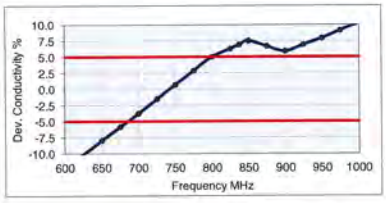


Figure D-2
750MHz Body Tissue Equivalent Matter

Schmid & Partner Engineering AG

s p e a g

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

Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HSL750V2)**
Product No.	SL AAH 075 AA (Batch: 170612-4)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation

Validation results were within ± 2.5% towards the target values of Methanol.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

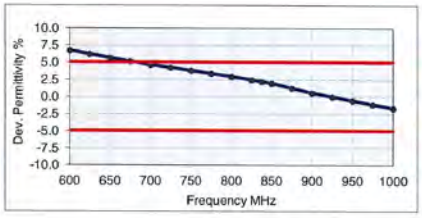
Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	20-Jun-17
Operator	CL

Additional Information

TSL Density	1.284 g/cm^3
TSL Heat-capacity	2.701 kJ/(kg*K)

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	45.6	22.97	0.77	42.7	0.88	6.7	-13.1
625	45.2	22.73	0.79	42.6	0.88	6.2	-10.6
650	44.9	22.49	0.81	42.5	0.89	5.6	-8.2
675	44.5	22.27	0.84	42.3	0.89	5.1	-5.8
700	44.2	22.05	0.86	42.2	0.89	4.6	-3.5
725	43.8	21.88	0.88	42.1	0.89	4.2	-1.0
750	43.5	21.72	0.91	41.9	0.89	3.8	1.4
775	43.2	21.55	0.93	41.8	0.90	3.4	3.7
800	42.9	21.38	0.95	41.7	0.90	2.9	6.0
825	42.6	21.24	0.97	41.6	0.91	2.4	7.5
838	42.5	21.17	0.99	41.5	0.91	2.2	8.2
850	42.3	21.09	1.00	41.5	0.92	2.0	8.9
875	42.0	20.98	1.02	41.5	0.94	1.2	8.3
900	41.7	20.87	1.05	41.5	0.97	0.5	7.7
925	41.5	20.76	1.07	41.5	0.98	0.0	8.7
950	41.2	20.64	1.09	41.4	0.99	-0.6	9.7
975	40.9	20.55	1.11	41.4	1.00	-1.1	10.9
1000	40.6	20.46	1.14	41.3	1.01	-1.7	12.1



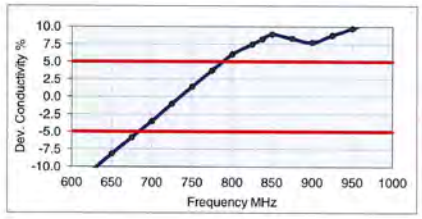


Figure D-3
750MHz Head Tissue Equivalent Matter

3 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	50 – 73 %	
Non-ionic detergents	25 – 50 %	polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %	
Preservative	0.05 – 0.1%	Preventol-D7

Safety relevant ingredients:

CAS-No. 55965-84-9	< 0.1 %	aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 %	polyoxyethylenesorbitan monolaurate

According to international guidelines, the product is not a dangerous mixture and therefore not required to be marked by symbols.

Figure D-4
Composition of 2.4 GHz Head Tissue Equivalent Matter

Note: 2.4 GHz head liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

Schmid & Partner Engineering AG

s p e a g

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

Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HBBL1900-3800V3)**
Product No.	SL AAH 196 AB (Batch: 170619-1)
Manufacturer	SPEAG

Measurement Method
TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation
Validation results were within ± 2.5% towards the target values of Methanol.

Target Parameters
Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

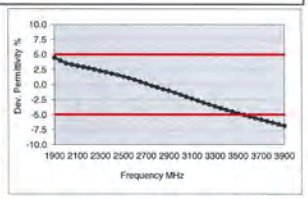
Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	20-Jun-17
Operator	CL

Additional Information

TSL Density 1.054 g/cm^3
TSL Heat-capacity 3.389 kJ/(kg*K)

	Measured			Target		Diff to Target [%]	
f [MHz]	ε'	ε''	sigma	eps	sigma	Δ-eps	Δ-sigma
1900	41.8	12.2	1.3	40.0	1.4	4.5	-8.2
1950	41.6	12.3	1.3	40.0	1.4	4.0	-4.6
2000	41.4	12.4	1.4	40.0	1.4	3.6	-1.3
2050	41.2	12.6	1.4	39.9	1.4	3.3	-0.9
2100	41.1	12.7	1.5	39.8	1.5	3.1	-0.6
2150	40.9	12.8	1.5	39.7	1.5	2.9	-0.2
2200	40.7	12.9	1.6	39.6	1.6	2.7	0.2
2250	40.6	13.0	1.6	39.6	1.6	2.5	0.5
2300	40.4	13.2	1.7	39.5	1.7	2.3	1.1
2350	40.2	13.3	1.7	39.4	1.7	2.1	1.5
2400	40.0	13.4	1.8	39.3	1.8	1.8	2.1
2450	39.8	13.5	1.8	39.2	1.8	1.6	2.6
2500	39.7	13.7	1.9	39.1	1.9	1.3	2.6
2550	39.5	13.7	2.0	39.1	1.9	1.1	2.2
2600	39.3	13.9	2.0	39.0	2.0	0.8	2.5
2650	39.1	14.0	2.1	38.9	2.0	0.5	2.6
2700	39.0	14.2	2.1	38.9	2.1	0.2	2.7
2750	38.7	14.3	2.2	38.8	2.1	-0.2	2.6
2800	38.6	14.4	2.2	38.8	2.2	-0.4	2.5
2850	38.4	14.5	2.3	38.7	2.2	-0.8	2.6
2900	38.2	14.6	2.3	38.6	2.3	-1.0	2.6
2950	38.1	14.7	2.4	38.6	2.3	-1.3	2.6
3000	37.9	14.8	2.5	38.5	2.4	-1.7	2.6
3050	37.7	14.8	2.5	38.4	2.5	-2.0	2.8
3100	37.5	14.9	2.6	38.4	2.5	-2.3	2.8
3150	37.3	15.0	2.6	38.3	2.6	-2.6	2.9
3200	37.1	15.1	2.7	38.3	2.6	-3.0	2.9
3250	37.0	15.1	2.7	38.2	2.7	-3.3	3.0
3300	36.8	15.2	2.8	38.2	2.7	-3.6	3.1
3350	36.6	15.3	2.8	38.1	2.8	-3.9	3.2
3400	36.4	15.3	2.9	38.0	2.8	-4.2	3.3
3450	36.3	15.4	3.0	38.0	2.9	-4.5	3.4
3500	36.1	15.5	3.0	37.9	2.9	-4.8	3.5
3550	36.0	15.5	3.1	37.9	3.0	-5.0	3.6
3600	35.8	15.6	3.1	37.8	3.0	-5.3	3.8
3650	35.7	15.7	3.2	37.8	3.1	-5.6	3.7
3700	35.5	15.7	3.2	37.7	3.1	-5.8	3.9
3750	35.4	15.8	3.3	37.6	3.2	-6.1	3.9
3800	35.2	15.9	3.4	37.6	3.2	-6.3	4.1
3850	35.1	15.9	3.4	37.5	3.3	-6.6	4.1



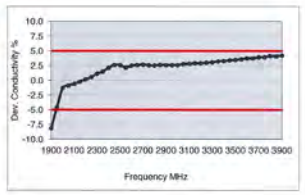


Figure D-5
2.4 GHz Head Tissue Equivalent Matter

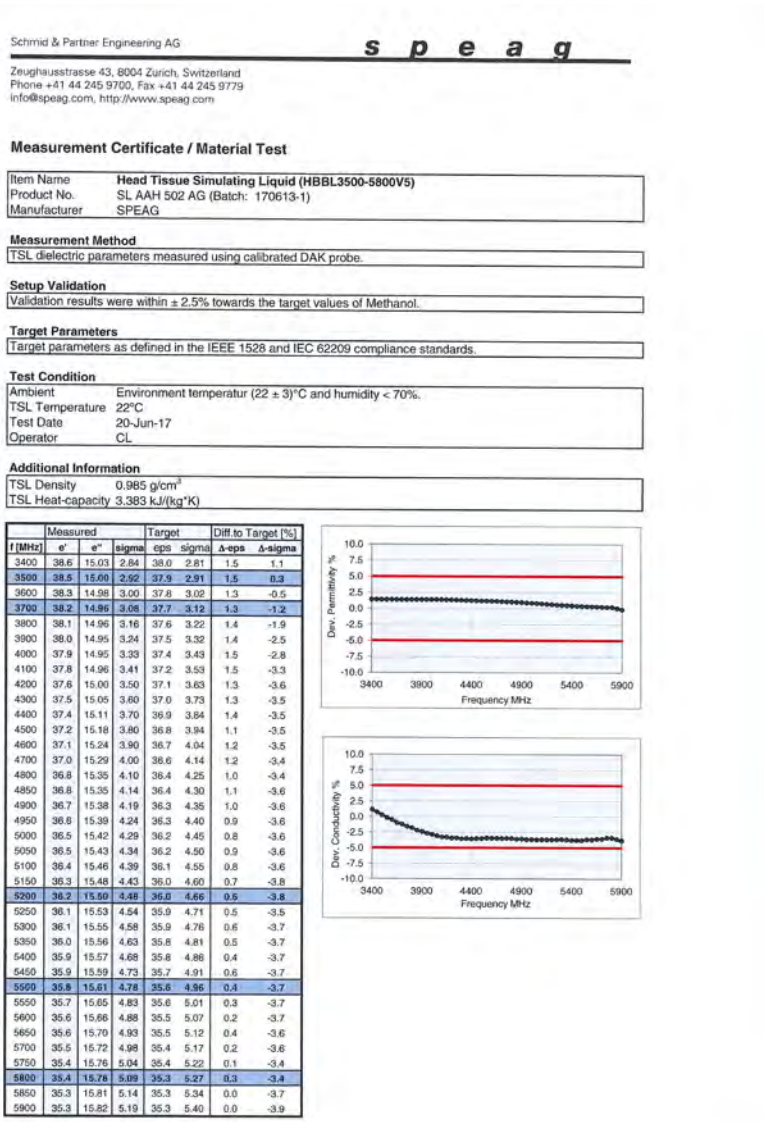
2 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	50 – 65%
Mineral oil	10 – 30%
Emulsifiers	8 – 25%
Sodium salt	0 – 1.5%

Figure D-6
Composition of 5 GHz Head Tissue Equivalent Matter

Note: 5GHz head liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.



Schmid & Partner Engineering AG

s p e a g

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

Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HBBL3500-5800V5)**
Product No.	SL AAH 502 AG (Batch: 170613-1)
Manufacturer	SPEAG

Measurement Method
TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation
Validation results were within ± 2.5% towards the target values of Methanol.

Target Parameters
Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	20-Jun-17
Operator	CL

Additional Information

TSL Density	0.985 g/cm³
TSL Heat-capacity	3.383 kJ/(kg*K)

	Measured			Target		Diff to Target [%]	
f [MHz]	e'	e"	sigma	eps	sigma	Δ-eps	Δ-sigma
3400	38.6	15.03	2.84	38.0	2.81	1.5	1.1
3500	38.5	15.00	2.92	37.9	2.91	1.5	0.3
3600	38.3	14.98	3.00	37.8	3.02	1.3	-0.5
3700	38.2	14.96	3.08	37.7	3.12	1.3	-1.2
3800	38.1	14.96	3.16	37.6	3.22	1.4	-1.9
3900	38.0	14.95	3.24	37.5	3.32	1.4	-2.5
4000	37.9	14.95	3.33	37.4	3.43	1.5	-2.8
4100	37.8	14.96	3.41	37.2	3.53	1.5	-3.3
4200	37.6	15.00	3.50	37.1	3.63	1.3	-3.6
4300	37.5	15.05	3.60	37.0	3.73	1.3	-3.5
4400	37.4	15.11	3.70	36.9	3.84	1.4	-3.5
4500	37.2	15.18	3.80	36.8	3.94	1.1	-3.5
4600	37.1	15.24	3.90	36.7	4.04	1.2	-3.5
4700	37.0	15.29	4.00	36.6	4.14	1.2	-3.4
4800	36.8	15.35	4.10	36.4	4.25	1.0	-3.4
4850	36.8	15.35	4.14	36.4	4.30	1.1	-3.6
4900	36.7	15.38	4.19	36.3	4.35	1.0	-3.6
4950	36.6	15.39	4.24	36.3	4.40	0.9	-3.6
5000	36.5	15.42	4.29	36.2	4.45	0.8	-3.6
5050	36.5	15.43	4.34	36.2	4.50	0.9	-3.6
5100	36.4	15.46	4.39	36.1	4.55	0.8	-3.6
5150	36.3	15.48	4.43	36.0	4.60	0.7	-3.8
5200	36.2	15.50	4.48	36.0	4.66	0.5	-3.8
5250	36.1	15.53	4.54	35.9	4.71	0.5	-3.5
5300	36.1	15.55	4.58	35.9	4.76	0.6	-3.7
5350	36.0	15.56	4.63	35.8	4.81	0.5	-3.7
5400	35.9	15.57	4.68	35.8	4.86	0.4	-3.7
5450	35.9	15.59	4.73	35.7	4.91	0.6	-3.7
5500	35.8	15.61	4.78	35.6	4.96	0.4	-3.7
5550	35.7	15.65	4.83	35.6	5.01	0.3	-3.7
5600	35.6	15.66	4.88	35.5	5.07	0.2	-3.7
5650	35.6	15.70	4.93	35.5	5.12	0.4	-3.6
5700	35.5	15.72	4.98	35.4	5.17	0.2	-3.6
5750	35.4	15.76	5.04	35.4	5.22	0.1	-3.4
5800	35.4	15.78	5.09	35.3	5.27	0.3	-3.4
5850	35.3	15.81	5.14	35.3	5.34	0.0	-3.7
5900	35.3	15.82	5.19	35.3	5.40	0.0	-3.9

Figure D-7
5GHz Head Tissue Equivalent Matter

APPENDIX E: SAR SYSTEM VALIDATION

Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table E-1
SAR System Validation Summary – 1g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE TYPE	PROBE CAL. POINT		COND.	PERM.	CW VALIDATION			MOD. VALIDATION		
							(σ)	(εr)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
E	750	3/11/2018	3213	ES3DV3	750	Head	0.890	40.788	PASS	PASS	PASS	N/A	N/A	N/A
E	835	3/5/2018	3213	ES3DV3	835	Head	0.925	43.335	PASS	PASS	PASS	GMSK	PASS	N/A
E	1750	3/2/2018	3213	ES3DV3	1750	Head	1.397	38.415	PASS	PASS	PASS	N/A	N/A	N/A
E	1900	5/22/2018	3213	ES3DV3	1900	Head	1.447	38.909	PASS	PASS	PASS	GMSK	PASS	N/A
G	2450	10/16/2017	3332	ES3DV3	2450	Head	1.880	38.615	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
G	2600	10/16/2017	3332	ES3DV3	2600	Head	2.051	38.039	PASS	PASS	PASS	TDD	PASS	N/A
H	5250	1/31/2018	3589	EX3DV4	5250	Head	4.516	36.066	PASS	PASS	PASS	OFDM	N/A	PASS
H	5600	1/31/2018	3589	EX3DV4	5600	Head	4.869	35.597	PASS	PASS	PASS	OFDM	N/A	PASS
H	5750	1/31/2018	3589	EX3DV4	5750	Head	5.112	35.351	PASS	PASS	PASS	OFDM	N/A	PASS
J	750	5/24/2018	3347	ES3DV3	750	Body	0.951	55.133	PASS	PASS	PASS	N/A	N/A	N/A
J	835	5/26/2018	3347	ES3DV3	835	Body	0.973	54.458	PASS	PASS	PASS	GMSK	PASS	N/A
I	1750	3/12/2018	3287	ES3DV3	1750	Body	1.462	52.350	PASS	PASS	PASS	N/A	N/A	N/A
I	1900	5/21/2018	3287	ES3DV3	1900	Body	1.575	51.758	PASS	PASS	PASS	GMSK	PASS	N/A
G	2450	10/10/2017	3332	ES3DV3	2450	Body	2.040	51.023	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2450	4/3/2018	3319	ES3DV3	2450	Body	2.043	51.130	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2600	4/3/2018	3319	ES3DV3	2600	Body	2.225	50.665	PASS	PASS	PASS	TDD	PASS	N/A
D	5250	6/11/2018	7357	EX3DV4	5250	Body	5.529	48.096	PASS	PASS	PASS	OFDM	N/A	PASS
D	5600	6/11/2018	7357	EX3DV4	5600	Body	6.007	47.521	PASS	PASS	PASS	OFDM	N/A	PASS
D	5750	6/11/2018	7357	EX3DV4	5750	Body	6.214	47.275	PASS	PASS	PASS	OFDM	N/A	PASS

Table E-2
SAR System Validation Summary – 10g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE TYPE	PROBE CAL. POINT		COND.	PERM.	CW VALIDATION			MOD. VALIDATION		
							(σ)	(εr)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
I	1750	3/12/2018	3287	ES3DV3	1750	Body	1.462	52.350	PASS	PASS	PASS	N/A	N/A	N/A
I	1900	5/21/2018	3287	ES3DV3	1900	Body	1.575	51.758	PASS	PASS	PASS	GMSK	PASS	N/A
K	2450	4/3/2018	3319	ES3DV3	2450	Body	2.043	51.130	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2600	4/3/2018	3319	ES3DV3	2600	Body	2.225	50.665	PASS	PASS	PASS	TDD	PASS	N/A
D	5250	6/11/2018	7357	EX3DV4	5250	Body	5.529	48.096	PASS	PASS	PASS	OFDM	N/A	PASS
D	5600	6/11/2018	7357	EX3DV4	5600	Body	6.007	47.521	PASS	PASS	PASS	OFDM	N/A	PASS
D	5750	6/11/2018	7357	EX3DV4	5750	Body	6.214	47.275	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.

APPENDIX G: POWER REDUCTION VERIFICATION

Per the May 2017 TCBC Workshop Notes, demonstration of proper functioning of the power reduction mechanisms is required to support the corresponding SAR configurations. The verification process was divided into two parts: (1) evaluation of output power levels for individual or multiple triggering mechanisms and (2) evaluation of the triggering distances for proximity-based sensors.

1.1 Power Verification Procedure

The power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.

2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.

3. Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a 'triggered' state at a time; powers were confirmed to be within tolerances after each additional mechanism was activated.

1.2 Distance Verification Procedure

The distance verification procedure was performed according to the following procedure:

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.

2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 and FCC Guidance. Each applicable test position was evaluated. The distances were confirmed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.

3. Steps 1 and 2 were repeated for low, mid, and high bands, as appropriate (see note below Table G-2 for more details).

4. Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

1.3 Main Antenna Verification Summary

Table G-1
Power Measurement Verification for Main Antenna

Mechanism(s)	Mode/Band	Power Measurements (dBm)		
		Un-triggered (Max)	Mechanism #1 (Reduced)	Mechanism #2 (Reduced)
Hotspot On	UMTS B4	23.86	20.85	
Hotspot On	UMTS B2	23.72	20.74	
Hotspot On	LTE B66	23.71	20.74	
Hotspot On	LTE B4	23.64	20.73	
Hotspot On	LTE B2	23.65	20.45	
Hotspot On	LTE B25	23.55	20.41	
Hotspot On	LTE B7	23.83	19.87	
Hotspot On	LTE B38	23.15	20.12	
Hotspot On	LTE B41	23.61	20.64	
Grip	UMTS B4	23.87	20.84	
Grip	UMTS B2	23.7	20.57	
Grip	LTE B66	23.69	20.69	
Grip	LTE B4	23.45	20.42	
Grip	LTE B2	23.62	20.49	
Grip	LTE B25	23.57	20.22	
Grip	LTE B7	23.82	19.68	
Grip	LTE B38	23.14	20.05	
Grip	LTE B41	23.59	20.71	
Hotspot On, the Grip	UMTS B4	23.85	20.83	20.83
Hotspot On, the Grip	UMTS B2	23.73	20.61	20.55
Hotspot On, the Grip	LTE B66	23.72	20.78	20.72
Hotspot On, the Grip	LTE B4	23.66	20.61	20.56
Hotspot On, the Grip	LTE B2	23.59	20.53	20.53
Hotspot On, the Grip	LTE B25	23.54	20.5	20.48
Hotspot On, the Grip	LTE B7	23.74	19.69	19.58
Hotspot On, the Grip	LTE B38	23.12	20.05	19.97
Hotspot On, the Grip	LTE B41	23.6	20.69	20.68
Grip, the Hotspot On	UMTS B4	23.86	20.87	20.85
Grip, the Hotspot On	UMTS B2	23.74	20.6	20.6
Grip, the Hotspot On	LTE B66	23.71	20.68	20.68
Grip, the Hotspot On	LTE B4	23.63	20.59	20.63
Grip, the Hotspot On	LTE B2	23.62	20.44	20.38
Grip, the Hotspot On	LTE B25	23.55	20.45	20.4
Grip, the Hotspot On	LTE B7	23.71	19.63	19.62
Grip, the Hotspot On	LTE B38	23.2	20.05	20.03
Grip, the Hotspot On	LTE B41	23.64	20.72	20.76

Table G-2
Distance Measurement Verification for Main Antenna

Mechanism(s)	Exposure Condition	Mode/Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip	Phablet - Back Side	Mid	12	15	11
Grip	Phablet - Back Side	High	11	14	11
Grip	Phablet - Front Side	Mid	9	12	6
Grip	Phablet - Front Side	High	9	12	6
Grip	Phablet - Bottom Edge	Mid	13	16	13
Grip	Phablet - Bottom Edge	High	13	15	13

*Note: Mid band refers to: UMTS B2/4, LTE B2/4/25/66; High band refers to: LTE B7/B38/41

1.4 WIFI Verification Summary

Table G-3
Power Measurement Verification WIFI

Mechanism(s)	Mode/Band	Conducted Power (dBm)			
		Un-triggered (Max)	Max Allowed Target	Mechanism #1 (Reduced)	Max Allowed Target
Held-to-Ear	802.11b	18.94	19	15.99	16
Held-to-Ear	802.11a	16.69	17	12.36	13
Held-to-Ear	802.11n (5GHz, 20MHz BW)	16.73	17	12.53	13
Held-to-Ear	802.11ac (20MHz BW)	15.97	17	11.51	13
Held-to-Ear	802.11n (5GHz, 40MHz BW)	14.45	15	12.58	13
Held-to-Ear	802.11ac (40MHz BW)	14.42	15	12.56	13
Held-to-Ear	802.11ac (80MHz BW)	12.73	14	12.37	13

Table G-4
Distance Measurement Verification for WIFI

Mechanism(s)	Exposure Condition	Mode/Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Held-to-Ear	Head - Right Cheek	802.11b	64	>85	50
Held-to-Ear	Head - Right Cheek	802.11a	65	>85	50
Held-to-Ear	Head - Left Cheek	802.11b	71	>85	50
Held-to-Ear	Head - Left Cheek	802.11a	70	>85	50

APPENDIX H: DOWNLINK LTE CA RF CONDUCTED POWERS

1.1 LTE Downlink Only Carrier Aggregation Test Reduction Methodology

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number of component carriers (CCs) supported by the product implementation. Per FCC Guidance, the following test reduction methodology was applied to determine the combinations required for conducted power measurements.

LTE DLCA Test Reduction Methodology:

- The supported combinations were arranged by the number of component carriers in columns.
- Any limitations on the PCC or SCC for each combination were identified alongside the combination (e.g. CA_2A-2A-4A-12A, but B12 can only be configured as a SCC).
- Power measurements were performed for "supersets" (LTE CA combinations with multiple components carriers) and any "subsets" (LTE CA combinations with fewer component carriers) that were not completely covered by the supersets.
- Only subsets that have the exact same components as a superset were excluded for measurement.
- When there were certain restrictions on component carriers that existed in the superset that were not applied for the subset, the subset configuration was additionally evaluated.
- Both inter-band and intra-band downlink carrier aggregation scenarios were considered.
- Downlink CA combinations for SISO and 4x4 Downlink MIMO operations were measured independently, per May 2017 TCBC Workshop notes.

Table 1 – Example of Exclusion Table for SISO Configurations

Index	2CC	Supported Channel Bandwidth [MHz]		Restriction	Completely Covered by Measurement Superset
		CC1	CC2		
2CC #1	CA_2C	5, 10, 15, 20	5, 10, 15, 20		3CC #4
2CC #2	CA_2A-5A	5, 10, 15, 20	5, 10		4CC #1
2CC #3	CA_2A-12A	5, 10, 15, 20	5, 10		3CC #3
2CC #4	CA_2A-13A	5, 10, 15, 20	10		3CC #9
2CC #5	CA_2A-17A	5, 10	5, 10		No
2CC #6	CA_2A-30A	5, 10, 15, 20	5, 10		3CC #14
2CC #8	CA_2A-66A (2)	5, 10, 15, 20	5, 10, 15, 20		5CC #1
2CC #9	CA_2A-71A	5, 10, 15, 20	5, 10, 15, 20		3CC #10
2CC #10	CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20		3CC #6
2CC #11	CA_4A-5A (1)	5, 10, 15, 20	5, 10		4CC #1
2CC #12	CA_4A-12A (4)	5, 10, 15, 20	5, 10		3CC #8
2CC #13	CA_4A-13A	5, 10, 15, 20	10		3CC #9
2CC #14	CA_4A-17A	5, 10	5, 10	B17 SCC Only	No
2CC #15	CA_5B	5, 10	5, 10		5CC #1
2CC #16	CA_5A-25A	5, 10	5, 10, 15, 20		No
2CC #17	CA_7C	15, 20	15, 20		No
2CC #18	CA_7A-7A (1)	5, 10, 15, 20	5, 10, 15, 20		No
2CC #19	CA_7A-12A	5, 10, 15, 20	5, 10		3CC #12
2CC #20	CA_12B	5	5, 10		3CC #13
2CC #21	CA_12A-25A	5, 10	5, 10, 15, 20		No
2CC #22	CA_12A-30A	5, 10	5, 10		3CC #14
2CC #23	CA_41A-41A (1)	5, 10, 15, 20	5, 10, 15, 20		No

Index	3CC	Supported Channel Bandwidth [MHz]			Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3		
3CC #1	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		4CC #1
3CC #2	CA_2A-2A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		4CC #1
3CC #3	CA_2A-2A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #4	CA_2C-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #5	CA_2A-2A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #6	CA_2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #7	CA_2A-4A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		4CC #1
3CC #8	CA_2A-4A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #9	CA_2A-4A-13A	5, 10, 15, 20	5, 10, 15, 20	10		No
3CC #10	CA_2A-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #11	CA_2A-5B	5, 10, 15, 20	5, 10	5, 10		4CC #5
3CC #12	CA_2A-7A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #13	CA_2A-12B	5, 10, 15, 20	5	5, 10		No
3CC #14	CA_2A-12A-30A	5, 10, 15, 20	5, 10	5, 10		No
3CC #15	CA_4A-4A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #16	CA_5B-30A	5, 10	5, 10	5, 10		5CC #1
3CC #17	CA_5B-66A	5, 10	5, 10	5, 10, 15, 20		5CC #1
3CC #18	CA_5A-30A-66A	5, 10	5, 10	5, 10, 15, 20		4CC #9
3CC #19	CA_12A-66C	5, 10	5, 10, 15, 20	5, 10, 15, 20		No
3CC #20	CA_30A-66A-66A	5, 10	5, 10, 15, 20	5, 10, 15, 20		4CC #9
3CC #21	CA_41D	10, 15, 20	10, 15, 20	10, 15, 20		No
3CC #22	CA_41A-41C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #23	CA_66D	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #24	CA_66A-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No

Index	4CC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
4CC #1	CA_2A-2A-4A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
4CC #2	CA_2A-2A-4A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10	B12 SCC Only	No
4CC #3	CA_2A-2A-5A-30A	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10		No
4CC #4	CA_2A-2A-5A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
4CC #5	CA_2A-5B-30A	5, 10, 15, 20	5, 10	5, 10	5, 10		5CC #1
4CC #6	CA_2A-5B-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		5CC #1
4CC #7	CA_5B-30A-66A	5, 10	5, 10	5, 10	5, 10		5CC #1
4CC #8	CA_5B-66A-66A	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20		5CC #2
4CC #9	CA_5A-30A-66A-66A	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20		No
4CC #10	CA_41E	15, 20	15, 20	15, 20	20		No

Index	5CC	Supported Channel Bandwidth [MHz]					Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4	CC5		
5CC #1	CA_2A-5B-30A-66A	5, 10, 15, 20	5, 10	5, 10	5, 10	5, 10, 15, 20		No
5CC #2	CA_2A-5B-66A-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20		No

Table 2 – Example of Exclusion Table for 4x4 Downlink MIMO Configurations

Index	2CC	Supported Channel Bandwidth [MHz]		Restriction	Completely Covered by Measurement Superset
		CC1	CC2		
2CC #M1	CA_[2C]	5, 10, 15, 20	5, 10, 15, 20		3CC #M6
2CC #M2	CA_[2A]-2A	5, 10, 15, 20	5, 10, 15, 20		3CC #M1
2CC #M3	CA_[2A]-[2A]	5, 10, 15, 20	5, 10, 15, 20		No
2CC #M4	CA_[2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20		3CC #M1
2CC #M5	CA_[2A]-[4A] (2)	5, 10, 15, 20	5, 10, 15, 20		No
2CC #M6	CA_[2A]-5A	5, 10, 15, 20	5, 10		4CC #M3
2CC #M7	CA_[2A]-12A (1)	5, 10, 15, 20	3, 5, 10		No
2CC #M8	CA_[2A]-13A	5, 10, 15, 20	10		3CC #M4
2CC #M9	CA_[2A]-17A	5, 10	5, 10		No
2CC #M10	CA_[2A]-29A (2)	5, 10, 15, 20	5, 10	B29 SCC Only	3CC #M12
2CC #M11	CA_[2A]-30A	5, 10, 15, 20	5, 10		3CC #M5
2CC #M12	CA_[2A]-66A (2)	5, 10, 15, 20	5, 10, 15, 20		4CC #M1
2CC #M13	CA_2A-[66A] (2)	5, 10, 15, 20	5, 10, 15, 20		4CC #M2
2CC #M14	CA_[2A]-[66A] (2)	5, 10, 15, 20	5, 10, 15, 20		No
2CC #M15	CA_[2A]-71A	5, 10, 15, 20	5, 10, 15, 20		3CC #M11
2CC #M16	CA_5A-[66A]	5, 10	5, 10, 15, 20		3CC #M16
2CC #M17	CA_12A-[66A] (4)	5, 10	5, 10, 15, 20		3CC #M17
2CC #M18	CA_13A-[66A]	5, 10	5, 10, 15, 20		3CC #M19
2CC #M19	CA_30A-[66A]	5, 10	5, 10, 15, 20		3CC #M20
2CC #M20	CA_[66B]	5, 10, 15	5, 10, 15		4CC #M4
2CC #M21	CA_[66C]	5, 10, 15, 20	5, 10, 15, 20		4CC #M6
2CC #M22	CA_[66A]-66A	5, 10, 15, 20	5, 10, 15, 20		3CC #M28
2CC #M23	CA_[66A]-[66A]	5, 10, 15, 20	5, 10, 15, 20		No

Index	3CC	Supported Channel Bandwidth [MHz]			Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3		
3CC #M1	CA_[2A]-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M2	CA_[2A]-2A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #M3	CA_[2A]-2A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #M4	CA_[2A]-2A-13A	5, 10, 15, 20	5, 10, 15, 20	10		No
3CC #M5	CA_[2A]-2A-30A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #M6	CA_[2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M7	CA_2C-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M8	CA_[2C]-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M9	CA_[2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M10	CA_2A-2A-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M11	CA_[2A]-2A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M12	CA_[2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SCC Only	No
3CC #M13	CA_[2A]-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M14	CA_[2A]-5B	5, 10, 15, 20	5, 10	5, 10		4CC #M1
3CC #M15	CA_[2A]-5A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M16	CA_2A-5A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M17	CA_2A-12A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M18	CA_[2A]-13A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M19	CA_2A-13A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M20	CA_2A-30A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M21	CA_[2A]-66B	5, 10, 15, 20	5, 10, 15	5, 10, 15		4CC #M3
3CC #M22	CA_2A-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15		4CC #M4
3CC #M23	CA_[2A]-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15		No
3CC #M24	CA_[2A]-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		4CC #M5
3CC #M25	CA_2A-[66C]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		4CC #M6
3CC #M26	CA_[2A]-[66C]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M27	CA_[2A]-66A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M28	CA_2A-[66A]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M29	CA_[2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No

Index	4CC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
4CC #M1	CA_[2A]-5B-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No
4CC #M2	CA_2A-5B-[66A]	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No
4CC #M3	CA_[2A]-5A-66B	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15		No
4CC #M4	CA_2A-5A-[66B]	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15		No
4CC #M5	CA_[2A]-5A-66C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20		No
4CC #M6	CA_2A-5A-[66C]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20		No

Note: [CC] indicates component carrier with 4x4 DL MIMO antenna configuration

1.2 LTE Downlink Only Carrier Aggregation Test Selection and Setup

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by FCC Guidance, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

LTE Downlink Carrier Aggregaton was fully addressed in the original filing. Per FCC Guidance, only combiantions that were impacted with respect to this permissive change were additionally evaluated. Refer RF Exposure Technical Report S/N 1M1804040063-01.A3L for the excluded combinations which have been addressed per KDB 941225 D05A and April 2018 TCBC Workshop guidance.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KBD 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.
- When a device supports LTE capabilities with overlapping transmission frequency ranges, the standalone powers from the band with a larger transmission frequency range can be used to select measurement configurations for the band with the fully covered transmission frequency range.

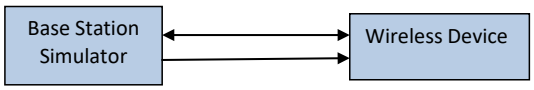


Figure 1
SISO CA Power Measurement Setup

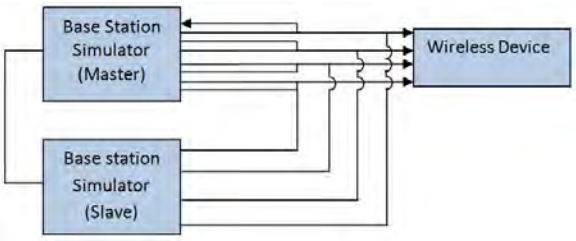


Figure 2
4x4 DL MIMO CA Power Measurement Setup

1.3 SISO Downlink Carrier Aggregation RF Conducted Powers

1.3.1 Two Component Carrier

Table 1
Maximum Output Powers

	PCC									SCC				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_7C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B7	20	3204	2665.4	24.18	24.19
CA_7A-7A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B7	20	2850	2630	24.25	24.19

Table 2
Reduced Output Powers

	PCC									SCC				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_7C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B7	20	2944	2639.4	20.24	20.45
CA_7A-7A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B7	20	3350	2680	20.24	20.45

1.4 4x4 Downlink MIMO RF Conduction Powers

This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section 1.2 were applied.

Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

1.4.1 LTE 4x4 DL MIMO Standalone Powers

Table 3
Maximum Output Powers

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]
7	15	21375	2562.5	QPSK	1	74	24.18	24.19

Table 4
Reduced Output Powers

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]
7	10	20800	2505	16QAM	1	25	20.48	20.45

1.4.2 Two Component Carrier

Table 5
Maximum Output Powers

	PCC										SCC					Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	DL Ant. Config.	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_[7C] (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4X4 MIMO	LTE B7	20	3204	2665.4	4x4 MIMO	24.22	24.19
CA_[7A]-[7A] (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4X4 MIMO	LTE B7	20	2850	2630	4x4 MIMO	24.35	24.19

Table 6
Reduced Output Powers

	PCC										SCC					Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	DL Ant. Config.	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_[7C] (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4X4 MIMO	LTE B7	20	2944	2639.4	4x4 MIMO	20.35	20.45
CA_[7A]-[7A] (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4X4 MIMO	LTE B7	20	3350	2680	4x4 MIMO	20.41	20.45

1.5 LAA Downlink Carrier Aggregation

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive. Due to the wide downlink bandwidth, each Band 46 sub-band, represented by subscripts A, B, C, and D, was evaluated independently. The general test selection and setup procedures described in Section 1.2 were applied.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

1.5.1 SISO LAA Downlink Carrier Aggregation RF Conducted Powers

Table 7
Maximum Output Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_7A-46$_A$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_A$	20	47290	5200	-	-	-	-	-	-	-	-	24.23	24.19
CA_7A-46$_B$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_B$	20	48290	5300	-	-	-	-	-	-	-	-	24.25	24.19
CA_7A-46$_C$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_C$	20	51290	5600	-	-	-	-	-	-	-	-	24.24	24.19
CA_7A-46$_D$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_D$	20	53140	5785	-	-	-	-	-	-	-	-	24.24	24.19
CA_7A-46$_A$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_A$	20	47290	5200	LTE B46$_A$	20	47488	5219.8	-	-	-	-	24.22	24.19
CA_7A-46$_B$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_B$	20	48290	5300	LTE B46$_B$	20	48488	5319.8	-	-	-	-	24.17	24.19
CA_7A-46$_C$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_C$	20	51290	5600	LTE B46$_C$	20	51488	5619.8	-	-	-	-	24.16	24.19
CA_7A-46$_D$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_D$	20	53140	5785	LTE B46$_D$	20	53338	5804.8	-	-	-	-	24.20	24.19
CA_7A-46$_A$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_A$	20	47290	5200	LTE B46$_A$	20	47488	5219.8	LTE B46$_A$	20	47092	5180.2	24.34	24.19
CA_7A-46$_B$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_B$	20	48290	5300	LTE B46$_B$	20	48488	5319.8	LTE B46$_B$	20	48092	5280.2	24.32	24.19
CA_7A-46$_C$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_C$	20	51290	5600	LTE B46$_C$	20	51488	5619.8	LTE B46$_C$	20	51092	5580.2	24.33	24.19
CA_7A-46$_D$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	LTE B46$_D$	20	53140	5785	LTE B46$_D$	20	53338	5804.8	LTE B46$_D$	20	52942	5765.2	24.28	24.19

Table 8
Reduced Output Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_7A-46$_A$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_A$	20	47290	5200	-	-	-	-	-	-	-	-	20.44	20.45
CA_7A-46$_B$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_B$	20	48290	5300	-	-	-	-	-	-	-	-	20.47	20.45
CA_7A-46$_C$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_C$	20	51290	5600	-	-	-	-	-	-	-	-	20.40	20.45
CA_7A-46$_D$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_D$	20	53140	5785	-	-	-	-	-	-	-	-	20.49	20.45
CA_7A-46$_A$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_A$	20	47290	5200	LTE B46$_A$	20	47488	5219.8	-	-	-	-	20.31	20.45
CA_7A-46$_B$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_B$	20	48290	5300	LTE B46$_B$	20	48488	5319.8	-	-	-	-	20.32	20.45
CA_7A-46$_C$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_C$	20	51290	5600	LTE B46$_C$	20	51488	5619.8	-	-	-	-	20.28	20.45
CA_7A-46$_D$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_D$	20	53140	5785	LTE B46$_D$	20	53338	5804.8	-	-	-	-	20.25	20.45
CA_7A-46$_A$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_A$	20	47290	5200	LTE B46$_A$	20	47488	5219.8	LTE B46$_A$	20	47092	5180.2	20.39	20.45
CA_7A-46$_B$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_B$	20	48290	5300	LTE B46$_B$	20	48488	5319.8	LTE B46$_B$	20	48092	5280.2	20.44	20.45
CA_7A-46$_C$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_C$	20	51290	5600	LTE B46$_C$	20	51488	5619.8	LTE B46$_C$	20	51092	5580.2	20.38	20.45
CA_7A-46$_D$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	LTE B46$_D$	20	53140	5785	LTE B46$_D$	20	53338	5804.8	LTE B46$_D$	20	52942	5765.2	20.37	20.45

1.5.2 4x4 DL MIMO LAA Downlink Carrier Aggregation RF Conducted Powers

Table 9
Maximum Output Powers

Combination	PCC									SCC 1					SCC 2					SCC 3					Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_[7A]-46$_A$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_A$	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	24.25	24.19
CA_[7A]-46$_B$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_B$	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	24.34	24.19
CA_[7A]-46$_C$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_C$	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	24.28	24.19
CA_[7A]-46$_D$A (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_D$	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	24.24	24.19
CA_[7A]-46$_A$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_A$	20	47290	5200	2x2 MIMO	LTE B46$_A$	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	24.30	24.19
CA_[7A]-46$_B$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_B$	20	48290	5300	2x2 MIMO	LTE B46$_B$	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	24.33	24.19
CA_[7A]-46$_C$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_C$	20	51290	5600	2x2 MIMO	LTE B46$_C$	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	24.31	24.19
CA_[7A]-46$_D$C (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_D$	20	53140	5785	2x2 MIMO	LTE B46$_D$	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	24.35	24.19
CA_[7A]-46$_A$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_A$	20	47290	5200	2x2 MIMO	LTE B46$_A$	20	47488	5219.8	2x2 MIMO	LTE B46$_A$	20	47092	5180.2	2x2 MIMO	24.33	24.19
CA_[7A]-46$_B$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_B$	20	48290	5300	2x2 MIMO	LTE B46$_B$	20	48488	5319.8	2x2 MIMO	LTE B46$_B$	20	48092	5280.2	2x2 MIMO	24.32	24.19
CA_[7A]-46$_C$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_C$	20	51290	5600	2x2 MIMO	LTE B46$_C$	20	51488	5619.8	2x2 MIMO	LTE B46$_C$	20	51092	5580.2	2x2 MIMO	24.36	24.19
CA_[7A]-46$_D$D (1)	LTE B7	15	21375	2562.5	QPSK	1	74	3375	2682.5	4x4 MIMO	LTE B46$_D$	20	53140	5785	2x2 MIMO	LTE B46$_D$	20	53338	5804.8	2x2 MIMO	LTE B46$_D$	20	52942	5765.2	2x2 MIMO	24.34	24.19

Table 10
Reduced Output Powers

Combination	PCC									SCC 1					SCC 2					SCC 3					Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_[7A]-46$_A$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_A$	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	20.31	20.45
CA_[7A]-46$_B$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_B$	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	20.28	20.45
CA_[7A]-46$_C$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_C$	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	20.26	20.45
CA_[7A]-46$_D$A (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_D$	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	20.31	20.45
CA_[7A]-46$_A$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_A$	20	47290	5200	2x2 MIMO	LTE B46$_A$	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	20.27	20.45
CA_[7A]-46$_B$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_B$	20	48290	5300	2x2 MIMO	LTE B46$_B$	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	20.33	20.45
CA_[7A]-46$_C$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_C$	20	51290	5600	2x2 MIMO	LTE B46$_C$	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	20.37	20.45
CA_[7A]-46$_D$C (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_D$	20	53140	5785	2x2 MIMO	LTE B46$_D$	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	20.22	20.45
CA_[7A]-46$_A$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_A$	20	47290	5200	2x2 MIMO	LTE B46$_A$	20	47488	5219.8	2x2 MIMO	LTE B46$_A$	20	47092	5180.2	2x2 MIMO	20.21	20.45
CA_[7A]-46$_B$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_B$	20	48290	5300	2x2 MIMO	LTE B46$_B$	20	48488	5319.8	2x2 MIMO	LTE B46$_B$	20	48092	5280.2	2x2 MIMO	20.24	20.45
CA_[7A]-46$_C$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_C$	20	51290	5600	2x2 MIMO	LTE B46$_C$	20	51488	5619.8	2x2 MIMO	LTE B46$_C$	20	51092	5580.2	2x2 MIMO	20.27	20.45
CA_[7A]-46$_D$D (1)	LTE B7	10	20800	2505	16QAM	1	25	2800	2625	4x4 MIMO	LTE B46$_D$	20	53140	5785	2x2 MIMO	LTE B46$_D$	20	53338	5804.8	2x2 MIMO	LTE B46$_D$	20	52942	5765.2	2x2 MIMO	20.22	20.45