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





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Accreditation No.: SCS 0108

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CTI-cert (Auden)

Certificate No: EX3-7328_Feb17

CALIBRATION CERTIFICATE

EX3DV4 - SN:7328 Object

QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6 Calibration procedure(s)

Calibration procedure for dosimetric E-field probes

February 28, 2017 Calibration date:

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: S5277 (20x)	05-Apr-16 (No. 217-02293)	Apr-17
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

Function Calibrated by: Michael Weber Laboratory Technician Katja Pokovic Technical Manager Approved by: Issued: March 1, 2017

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

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Glossary:

tissue simulating liquid NORMx,y,z sensitivity in free space sensitivity in TSL / NORMx,y,z ConvE DCP diode compression point

crest factor (1/duty_cycle) of the RF signal CF A, B, C, D modulation dependent linearization parameters

Polarization φ φ rotation around probe axis

Polarization 9 9 rotation around an axis that is in the plane normal to probe axis (at measurement center),

i.e., 9 = 0 is normal to probe axis

information used in DASY system to align probe sensor X to the robot coordinate system Connector Angle

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement
- Techniques", June 2013

 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"

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization ϑ = 0 (f \leq 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 E2-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:7328

Manufactured: Calibrated:

December 11, 2014 February 28, 2017

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7328

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	0.39	0.42	0.45	± 10.1 %
DCP (mV) ^B	102.7	99.6	98.5	10.170

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	С	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	140.6	±3.0 %
		Y	0.0	0.0	1.0		140.3	
		Z	0.0	0.0	1.0		154.1	

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	48.71	361.5	35.6	8.677	0.79	4.955	1.57	0.107	1.004
Y	48.17	363.1	36.49	6.415	0.886	4.964	0.539	0.308	1.004
Z	54.86	417.6	36.93	10.47	0.692	4.995	0.67	0.317	1.004

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

A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).
B Numerical linearization parameter: uncertainty not required.
E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7328

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)
835	41.5	0.90	10.53	10.53	10.53	0.68	0.80	± 12.0 %
1750	40.1	1.37	8.68	8.68	8.68	0.40	0.80	± 12.0 %
1900	40.0	1.40	8.45	8.45	8.45	0.34	0.80	± 12.0 %
2000	40.0	1.40	8.38	8.38	8.38	0.28	0.80	± 12.0 %
2300	39.5	1.67	8.07	8.07	8.07	0.32	0.80	± 12.0 %
2450	39.2	1.80	7.61	7.61	7.61	0.29	0.87	± 12.0 %
2600	39.0	1.96	7.35	7.35	7.35	0.42	0.80	± 12.0 %
5200	36.0	4.66	5.68	5.68	5.68	0.30	1.80	± 13.1 %
5300	35.9	4.76	5.40	5.40	5.40	0.30	1.80	± 13.1 %
5500	35.6	4.96	5.09	5.09	5.09	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.78	4.78	4.78	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.88	4.88	4.88	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.

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.

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7328

Calibration Parameter Determined in Body Tissue Simulating Media

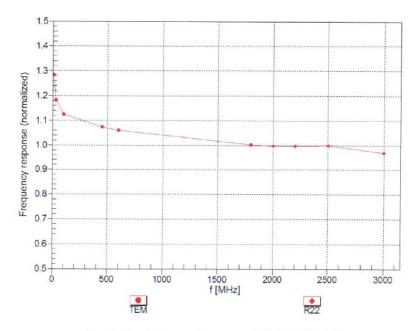
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
835	55.2	0.97	10.19	10.19	10.19	0.46	0.80	± 12.0 %
1750	53.4	1.49	8.39	8.39	8.39	0.37	0.80	± 12.0 %
1900	53.3	1.52	8.02	8.02	8.02	0.45	0.80	± 12.0 %
2000	53.3	1.52	8.25	8.25	8.25	0.42	0.80	± 12.0 %
2300	52.9	1.81	7.83	7.83	7.83	0.40	0.80	± 12.0 %
2450	52.7	1.95	7.61	7.61	7.61	0.42	0.80	± 12.0 %
2600	52.5	2.16	7.44	7.44	7.44	0.30	0.80	± 12.0 %
5200	49.0	5.30	4.78	4.78	4.78	0.40	1.90	± 13.1 %
5300	48.9	5.42	4.59	4.59	4.59	0.40	1.90	± 13.1 %
5500	48.6	5.65	3.99	3.99	3.99	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.92	3.92	3.92	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.11	4.11	4.11	0.50	1.90	± 13.1 %

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

Fat 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.

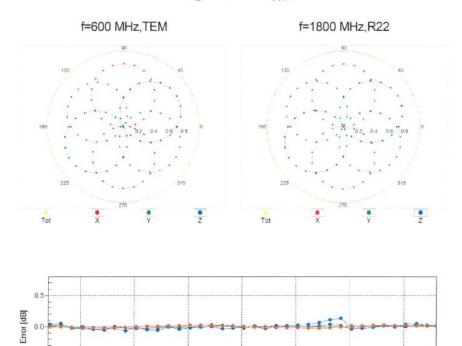
Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the 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), $\vartheta = 0^{\circ}$



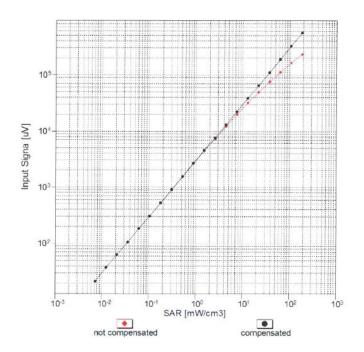
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

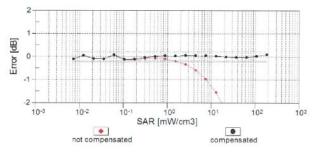
600 MHz

Roll [°]

2500 MHz

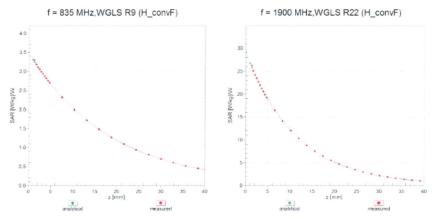
100 MHz



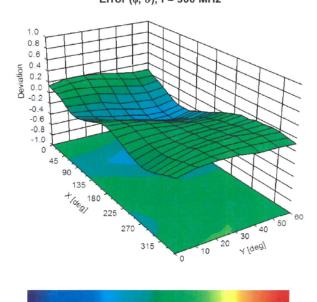


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



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



DASY/EASY - Parameters of Probe: EX3DV4 - SN:7328

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	121.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	140.6	± 3.0 %
		Y	0.00	0.00	1.00	0.00	140.3	I 3.0 76
		Z	0.00	0.00	1.00	_	154.1	
10010-	SAR Validation (Square, 100ms, 10ms)	X	2.18	64.06	9.17	10.00		1000
CAA	Tomas (equato, rooms, roms)			200	51702	10.00	20.0	± 9.6 %
		Y	2.39	64.98	9.91		20.0	
10011		Z	2.34	65.31	10.04		20.0	
10011- CAB	UMTS-FDD (WCDMA)	X	2.20	82.50	23.05	0.00	150.0	± 9.6 %
1000100		Y	1.58	75.75	20.03		150.0	
		Z	1.15	69.05	16.43		150.0	
10012-	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1	X	1.25	66.30	17.45	0.41	150.0	+0.6.9/
CAB	Mbps)	3.75%	1.0-0.0	10000000000		0.41		± 9.6 %
		Y	1.21	65.28	16.71		150.0	
10040	IEEE 000 44 - MIEE C : C : C : C : C	Z	1.18	63.92	15.52		150.0	
10013- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps)	X	4.85	66.81	17.25	1.46	150.0	± 9.6 %
		Y	4.85	66.68	17.17		150.0	
		Z	4.91	66.44	17.03		150.0	
10021- DAC	GSM-FDD (TDMA, GMSK)	Х	6.70	76.68	15.59	9.39	50.0	± 9.6 %
		Y	10.38	82.47	17.99		50.0	
		Z	27.83	94.58	21.57		50.0	
10023- DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	5.92	75.06	15.03	9.57	50.0	± 9.6 %
		Y	8.23	79.47	17.02		50.0	
		Z	17.78	89.16	20.09			
10024- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	21.67	89.88	18.31	6.56	50.0 60.0	± 9.6 %
0/10		Y	100.00	107.27	23.07		00.0	
		Z					60.0	
10025- DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	100.00	107.89 97.27	23.41 37.70	12.57	60.0 50.0	± 9.6 %
DAG		Y	4.27	00.00	04.54		F0.0	
				69.30	24.54		50.0	
10026-	EDOE EDD (TRAIL ADOL) THE A	Z	9.93	96.39	38.04		50.0	
DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	10.29	94.59	33.16	9.56	60.0	± 9.6 %
		Υ	7.50	86.26	29.87		60.0	
		Z	10.24	94.49	33.44		60.0	
10027- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	Х	100.00	104.24	20.89	4.80	80.0	± 9.6 %
		Υ	100.00	107.70	22.40		80.0	
		ż	100.00	107.96	22.68		80.0	
10028- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	105.82	20.93	3.55	100.0	± 9.6 %
		Y	100.00	109.97	22.65		100.0	
		Z	100.00	109.20	22.57		100.0	
10029-	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	5.78	81.85	27.31	7.80	80.0	± 9.6 %
DAC		Y				7.00		2 3.0 /0
			4.83	77.29	25.32		80.0	
10030- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Z X	5.90 34.46	81.81 93.48	27.44 18.47	5.30	80.0 70.0	± 9.6 %
UMM		Y	100.00	40E 00	04.00		70.0	
				105.80	21.89		70.0	
10031-	IEEE 000 45 4 Physically (OEO)(Philip	Z	100.00	106.53	22.36		70.0	
DAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Х	100.00	107.58	20.41	1.88	100.0	± 9.6 %
		Υ	100.00	112.10	22.16		100.0	
		Z	100.00	108.44	21.03		100.0	

10032- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Х	100.00	153.35	37.00	1.17	100.0	± 9.6 %
		Y	100.00	144.67	33.71		100.0	
		Z	100.00	117.10	23.62		100.0	
10033- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	8.43	88.50	22.78	5.30	70.0	± 9.6 %
		Y	5.70	83.14	21.24		70.0	
		Z	7.55	87.86	23.31		70.0	
10034- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	5.72	87.71	22.07	1.88	100.0	± 9.6 %
		Y	3.15	79.29	19.26		100.0	
		Z	2.54	75.43	18.02		100.0	
10035- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	5.09	87.80	22.19	1.17	100.0	± 9.6 %
		Y	2.65	78.33	18.89		100.0	
		Z	1.91	72.60	16.76		100.0	
10036- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Х	11.62	93.47	24.39	5.30	70.0	± 9.6 %
		Y	7.20	86.88	22.58		70.0	
		Z	9.76	92.09	24.74		70.0	
10037- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	5.00	85.94	21.48	1.88	100.0	± 9.6 %
		Υ	2.85	78.04	18.77		100.0	
		Z	2.41	74.84	17.75		100.0	
10038- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	5.35	88.99	22.73	1.17	100.0	± 9.6 %
		Υ	2.73	79.05	19.29		100.0	
		Z	1.93	72.97	17.03		100.0	
10039- CAB	CDMA2000 (1xRTT, RC1)	X	100.00	131.92	33.79	0.00	150.0	± 9.6 %
		Υ	15.44	103.58	26.70		150.0	
		Z	2.34	75.22	17.67		150.0	
10042- CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4- DQPSK, Halfrate)	X	4.35	72.94	13.21	7.78	50.0	± 9.6 %
		Υ	7.24	78.89	15.67		50.0	
		Z	17.84	88.51	18.62		50.0	
10044- CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	Х	0.00	126.07	0.40	0.00	150.0	± 9.6 %
		Υ	0.00	112.44	1.29		150.0	
		Z	0.00	100.94	0.22		150.0	
10048- CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	Х	5.09	69.19	14.15	13.80	25.0	± 9.6 %
		Υ	6.05	71.26	15.37		25.0	
10049- CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	Z X	7.51 5.05	75.31 71.89	16.91 14.06	10.79	25.0 40.0	± 9.6 %
CAA	3101, 12)	Υ	6.04	74.31	15.39		40.0	
		Z	8.14	78.78	17.05		40.0	
10056- CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	10.62	85.26	21.45	9.03	50.0	± 9.6 %
-1.5.1		Y	9.71	84.18	21.33		50.0	
		Z	14.44	91.54	24.26		50.0	
10058- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	4.34	76.33	24.36	6.55	100.0	± 9.6 %
		Υ	3.82	73.21	22.93		100.0	
		Z	4.44	76.19	24.33	-	100.0	
10059- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.29	67.53	18.02	0.61	110.0	± 9.6 %
		Υ	1.23	66.20	17.15		110.0	
		Z	1.20	64.86	16.01		110.0	
10060- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	Х	100.00	145.69	38.71	1.30	110.0	± 9.6 %
		Υ	100.00	144.65	38.29		110.0	
		Z	12.25	107.38	28.70		110.0	

10061- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	3.78	87.06	24.97	2.04	110.0	± 9.6 %
		Y	2.39	78.77	21.92		110.0	
		Z	2.44	77.80	21.21		110.0	
10062- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.71	67.07	16.91	0.49	100.0	± 9.6 %
		Y	4.71	66.91	16.82		100.0	
		Z	4.75	66.56	16.57		100.0	1
10063- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.72	67.11	16.96	0.72	100.0	± 9.6 %
		Y	4.71	66.95	16.87		100.0	
		Z	4.76	66.62	16.64		100.0	1
10064- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	5.00	67.32	17.14	0.86	100.0	± 9.6 %
		Y	5.00	67.17	17.05	5	100.0	
		Z	5.07	66.91	16.87		100.0	
10065- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	Х	4.84	67.14	17.17	1.21	100.0	± 9.6 %
		Y	4.84	66.99	17.08		100.0	
		Z	4.91	66.77	16.93		100.0	
10066- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	Х	4.85	67.10	17.27	1.46	100.0	± 9.6 %
		Y	4.84	66.94	17.18		100.0	
		Z	4.92	66.76	17.07		100.0	
10067- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	Х	5.11	67.14	17.60	2.04	100.0	± 9.6 %
		Y	5.11	67.00	17.52		100.0	
		Z	5.20	66.82	17.44		100.0	
10068- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	Х	5.14	67.14	17.76	2.55	100.0	± 9.6 %
		Y	5.14	66.98	17.68		100.0	
		Z	5.25	66.93	17.67		100.0	
10069- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.22	67.10	17.92	2.67	100.0	± 9.6 %
	14100000	Y	5.22	66.95	17.83		100.0	
		Z	5.33	66.89	17.85		100.0	
10071- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	Х	4.92	66.81	17.46	1.99	100.0	± 9.6 %
		Y	4.93	66.67	17.38		100.0	
		Z	4.99	66.48	17.29		100.0	
10072- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	Х	4.89	67.10	17.63	2.30	100.0	± 9.6 %
		Y	4.89	66.93	17.54		100.0	
		Z	4.97	66.79	17.48		100.0	
10073- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	4.93	67.17	17.87	2.83	100.0	± 9.6 %
		Υ	4.93	66.99	17.78		100.0	
		Z	5.01	66.88	17.74		100.0	
10074- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	4.89	67.00	17.96	3.30	100.0	± 9.6 %
		Y	4.90	66.82	17.86		100.0	
		Z	4.97	66.72	17.86		100.0	
10075- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	Х	4.92	67.09	18.23	3.82	90.0	±9.6 %
	100	Y	4.92	66.89	18.12		90.0	
		Z	5.01	66.88	18.19		90.0	
10076- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	Х	4.92	66.83	18.30	4.15	90.0	± 9.6 %
		Υ	4.93	66.64	18.19		90.0	
		Z	5.00	66.59	18.25		90.0	
10077- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	4.94	66.88	18.38	4.30	90.0	± 9.6 %
		Y	4.95	66.68	18.27		90.0	
		Z	5.01					

10081- CAB	CDMA2000 (1xRTT, RC3)	X	13.14	107.22	27.80	0.00	150.0	± 9.6 %
		Y	2.36	81.54	19.79		150.0	
-		Z	1.03	68.35	14.40		150.0	- N
10082- CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4- DQPSK, Fullrate)	X	0.68	60.00	4.11	4.77	80.0	± 9.6 %
		Y	1.59	63.98	5.80		80.0	
		Z	0.71	60.00	4.37		80.0	
10090- DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	19.78	89.00	18.09	6.56	60.0	± 9.6 %
		Y	100.00	107.27	23.08		60.0	
		Z	100.00	107.90	23.43		60.0	
10097- CAB	UMTS-FDD (HSDPA)	Х	2.43	73.67	19.24	0.00	150.0	± 9.6 %
		Υ	2.24	71.80	18.23		150.0	
		Z	1.92	68.26	16.29		150.0	
10098- CAB	UMTS-FDD (HSUPA, Subtest 2)	X	2.40	73.76	19.28	0.00	150.0	± 9.6 %
		Υ	2.20	71.81	18.24		150.0	
		Z	1.89	68.24	16.27		150.0	
10099- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	Х	10.35	94.68	33.17	9.56	60.0	± 9.6 %
		Υ	7.54	86.34	29.89		60.0	
		Z	10.32	94.62	33.47		60.0	
10100- CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	Х	3.97	75.09	19.32	0.00	150.0	± 9.6 %
		Υ	3.68	73.51	18.56		150.0	
		Z	3.34	71.12	17.20		150.0	
10101- CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	Х	3.52	69.48	17.32	0.00	150.0	± 9.6 %
		Y	3.44	68.87	16.96		150.0	
		Z	3.36	67.88	16.26		150.0	
10102- CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.60	69.30	17.33	0.00	150.0	± 9.6 %
		Y	3.54	68.77	17.02		150.0	
		Z	3.46	67.79	16.33		150.0	
10103- CAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	6.07	75.27	20.13	3.98	65.0	± 9.6 %
		Y	5.40	73.27	19.37		65.0	
		Z	6.01	74.60	19.89		65.0	
10104- CAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	5.95	73.06	20.05	3.98	65.0	± 9.6 %
		Y	5.64	71.96	19.60		65.0	
		Z	6.05	72.86	20.02		65.0	
10105- CAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	Х	5.74	72.20	19.98	3.98	65.0	± 9.6 %
		Υ	5.20	70.18	19.08		65.0	
		Z	5.86	72.12	20.00		65.0	2000
10108- CAD	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	Х	3.45	74.35	19.25	0.00	150.0	± 9.6 %
		Υ	3.21	72.82	18.48	-	150.0	
		Z	2.93	70.33	17.04		150.0	
10109- CAD	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	Х	3.20	69.70	17.45	0.00	150.0	± 9.6 %
		Y	3.12	69.02	17.05		150.0	
		Z	3.03	67.74	16.21		150.0	
10110- CAD	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	Х	2.88	74.07	19.26	0.00	150.0	± 9.6 %
		Υ	2.66	72.30	18.35		150.0	
		Z	2.40	69.46	16.73		150.0	
10111- CAD	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	Х	3.09	71.85	18.42	0.00	150.0	± 9.6 %
X2-100-		Y	2.98	70.97	17.92		150.0	
		Z	2.75	68.56	16.57		150.0	

10112- CAD	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	3.31	69.51	17.40	0.00	150.0	± 9.6 %
CAD	IVITZ, 64-QAIVI)	Y	3.24	68.91	17.05		150.0	-
		Z	3.15	67.67	16.23		150.0	
10113- CAD	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	3.22	71.72	18.40	0.00	150.0	± 9.6 %
		Y	3.13	70.96	17.97		150.0	
40444		Z	2.90	68.63	16.67		150.0	
10114- CAB	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	Х	5.22	67.81	17.00	0.00	150.0	± 9.6 %
		Y	5.23	67.66	16.92		150.0	
10115-	IEEE 000 44- UIE 0	Z	5.22	67.22	16.58		150.0	
CAB	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	×	5.51	67.89	17.04	0.00	150.0	± 9.6 %
		Y	5.51	67.76	16.96		150.0	
10116-	IEEE 902 445 /HT Consended 425 44	Z	5.57	67.52	16.73		150.0	
CAB	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.33	68.02	17.03	0.00	150.0	± 9.6 %
		Y	5.33	67.87	16.95		150.0	
10117-	IEEE 802 11p /UT Mind 42 5 M	Z	5.34	67.49	16.63		150.0	
CAB	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	5.19	67.66	16.95	0.00	150.0	± 9.6 %
		Y	5.18	67.50	16.86		150.0	
10118-	IEEE 902 44- (UE MI - 1 04 MI - 12	Z	5.20	67.16	16.56		150.0	
CAB	IEEE 802.11n (HT Mixed, 81 Mbps, 16- QAM)	X	5.60	68.11	17.15	0.00	150.0	± 9.6 %
		Υ	5.60	67.99	17.08		150.0	
10119-	IFFE 000 44- (UTAK 1 405 1)	Z	5.65	67.71	16.83		150.0	
CAB	IEEE 802.11n (HT Mixed, 135 Mbps, 64- QAM)	X	5.30	67.96	17.01	0.00	150.0	± 9.6 %
		Y	5.30	67.81	16.93		150.0	
10140-	LTE FOR 100 FOLLS 1000 FOLLS	Z	5.31	67.42	16.61		150.0	
CAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.64	69.29	17.23	0.00	150.0	± 9.6 %
		Y	3.58	68.75	16.92		150.0	
10141-	LTE EDD (CO EDMA 4000) DD 45	Z	3.51	67.79	16.25		150.0	
CAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.75	69.29	17.35	0.00	150.0	± 9.6 %
		Υ	3.70	68.81	17.07		150.0	
10142-	1.TE EDD (00 ED11) 1000 DD 0111	Z	3.63	67.85	16.39		150.0	
CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	Х	2.87	75.82	19.72	0.00	150.0	± 9.6 %
		Υ	2.56	73.46	18.55		150.0	
10143-	LTE-FDD (SC-FDMA, 100% RB, 3 MHz.	Z	2.18	69.58 74.77	16.56 19.07	0.00	150.0 150.0	± 9.6 %
CAD	16-QAM)	555	25757570	10100000	10000000	0.00	103,000	1 9.0 %
		Y	3.12	73.33	18.33		150.0	
10144- CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	Z	2.65	69.50 70.45	16.50 16.61	0.00	150.0 150.0	± 9.6 %
		Y	2.56	69.17	15.87		150.0	
		Z	2.42	67.24	14.93		150.0	
10145- CAD	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	3.06	78.67	18.37	0.00	150.0	± 9.6 %
		Y	1.98	72.21	15.61		150.0	
10146-	LTE EDD (CC EDMA 400% DB 11	Z	1.50	67.44	13.73		150.0	
10146- CAD	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	3.23	73.00	14.71	0.00	150.0	± 9.6 %
		Υ	2.13	68.02	12.62		150.0	
10117	LTE EDD (CO EDW)	Z	2.15	67.47	12.83		150.0	
10147- CAD	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	6.89	82.25	18.19	0.00	150.0	± 9.6 %
		Y	2.98	72.20	14.59		150.0	
		Z	2.58	69.83	14.07		150.0	

10149- CAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	3.21	69.79	17.51	0.00	150.0	± 9.6 %
		Y	3.13	69.11	17.11		150.0	
		Z	3.04	67.80	16.25		150.0	
10150- CAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	3.32	69.58	17.46	0.00	150.0	± 9.6 %
		Y	3.25	68.98	17.10		150.0	
		Z	3.16	67.72	16.27		150.0	
10151- CAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	6.27	77.45	21.10	3.98	65.0	± 9.6 %
0.10	3. 5.17	Y	5.71	75.81	20.52		65.0	
		Z	6.11	76.40	20.73		65.0	
10152- CAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	Х	5.49	72.99	19.73	3.98	65.0	± 9.6 %
		Y	5.16	71.77	19.22		65.0	
		Z	5.57	72.74	19.72		65.0	
10153- CAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	Х	5.84	73.92	20.51	3.98	65.0	± 9.6 %
		Y	5.51	72.76	20.04		65.0	4
		Z	5.89	73.53	20.43		65.0	
10154- CAD	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	×	3.00	74.87	19.67	0.00	150.0	± 9.6 %
		Y	2.77	73.10	18.78		150.0	
		Z	2.46	69.93	17.02		150.0	
10155- CAD	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	Х	3.09	71.87	18.44	0.00	150.0	± 9.6 %
10/21/20		Y	2.98	70.98	17.93		150.0	
		Z	2.75	68.57	16.58		150.0	
10156- CAD	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	Х	3.02	78.01	20.39	0.00	150.0	± 9.6 %
		Y	2.57	74.89	18.93		150.0	
		Z	2.06	69.93	16.54		150.0	
10157- CAD	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	Х	2.85	72.91	17.50	0.00	150.0	± 9.6 %
		Y	2.57	71.00	16.50		150.0	
Ec		Z	2.28	68.05	15.14		150.0	
10158- CAD	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	3.24	71.82	18.47	0.00	150.0	± 9.6 %
		Y	3.14	71.06	18.03		150.0	
		Z	2.91	68.69	16.71		150.0	
10159- CAD	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	Х	3.06	73.75	17.92	0.00	150.0	± 9.6 %
		Y	2.77	71.85	16.95		150.0	
		Z	2.40	68.54	15.45		150.0	
10160- CAC	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	3.23	72.23	18.52	0.00	150.0	± 9.6 %
		Υ	3.10	71.20	17.96		150.0	
		Z	2.90	69.17	16.74		150.0	
10161- CAC	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	3.22	69.66	17.47	0.00	150.0	± 9.6 %
		Υ	3.15	69.03	17.09		150.0	
		Z	3.05	67.66	16.22		150.0	
10162- CAC	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	Х	3.33	69.72	17.52	0.00	150.0	± 9.6 %
		Υ	3.26	69.13	17.17		150.0	
		Z	3.16	67.75	16.31		150.0	
10166- CAD	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	Х	3.72	71.26	20.27	3.01	150.0	± 9.6 %
0/10		Υ	3.53	69.89	19.56		150.0	
		Z	3.56	69.08	18.95		150.0	
10167- CAD	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	Х	4.93	75.89	21.37	3.01	150.0	± 9.6 %
	10	Y	4.31	72.97	20.08		150.0	
		Z	4.33	71.95	19.44		150.0	

10168- CAD	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	5.79	79.36	23.17	3.01	150.0	± 9.6 %
		Y	4.95	76.04	21.82	_	150.0	
10100		Z	4.78	74.05	20.70		150.0	
10169- CAC	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	×	3.09	71.59	20.60	3.01	150.0	± 9.6 %
		Y	2.83	69.09	19.32		150.0	
		Z	2.91	68.91	18.94		150.0	
10170- CAC	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	5.58	83.65	25.24	3.01	150.0	± 9.6 %
		Y	4.02	76.49	22.41		150.0	
10171-		Z	4.00	75.18	21.44		150.0	
AAC	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	Х	3.92	75.96	21.07	3.01	150.0	± 9.6 %
		Y	3.12	70.99	18.90		150.0	
40470		Z	3.26	70.91	18.60		150.0	
10172- CAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	9.16	94.04	28.98	6.02	65.0	± 9.6 %
		Y	4.48	79.58	23.83		65.0	
10177		Z	7.56	88.71	27.18		65.0	
10173- CAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	24.57	106.18	30.10	6.02	65.0	± 9.6 %
		Y	8.66	88.57	25.10		65.0	
10171		Z	12.06	93.24	26.63		65.0	
10174- CAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	14.66	95.89	26.45	6.02	65.0	± 9.6 %
		Υ	5.93	81.35	22.06		65.0	
		Z	9.51	87.97	24.34		65.0	
10175- CAD	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	Х	3.04	71.17	20.29	3.01	150.0	± 9.6 %
		Y	2.79	68.71	19.02		150.0	
		Z	2.88	68.60	18.69		150.0	
10176- CAD	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	5.60	83.70	25.26	3.01	150.0	± 9.6 %
		Y	4.02	76.53	22.42		150.0	
		Z	4.01	75.20	21.45		150.0	
10177- CAF	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	3.08	71.38	20.41	3.01	150.0	± 9.6 %
		Y	2.81	68.90	19.14		150.0	
		Z	2.90	68.76	18.79		150.0	
10178- CAD	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	5.48	83.23	25.05	3.01	150.0	± 9.6 %
		Y	3.96	76.19	22.25		150.0	
		Z	3.96	74.93	21.31		150.0	
10179- CAD	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	4.66	79.59	22.99	3.01	150.0	± 9.6 %
		Y	3.51	73.54	20.49		150.0	
		Z	3.60	72.91	19.88		150.0	
10180- CAD	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM)	×	3.90	75.83	20.99	3.01	150.0	± 9.6 %
		Y	3.10	70.89	18.84		150.0	
		Z	3.25	70.83	18.54		150.0	
10181- CAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	3.07	71.35	20.40	3.01	150.0	± 9.6 %
		Y	2.81	68.88	19.13		150.0	
		Z	2.90	68.74	18.78		150.0	
10182- CAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	×	5.46	83.19	25.03	3.01	150.0	± 9.6 %
		Y	3.96	76.15	22.23		150.0	
		Z	3.95	74.91	21.30		150.0	
10183- AAB	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	3.89	75.79	20.98	3.01	150.0	± 9.6 %
		Y	3.10	70.86	18.83		150.0	

10184- CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	3.08	71.41	20.43	3.01	150.0	± 9.6 %
Or to		Y	2.82	68.93	19.15		150.0	
		Z	2.91	68.79	18.81		150.0	
10185- CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM)	X	5.51	83.32	25.09	3.01	150.0	± 9.6 %
	1 10.00 10.00	Y	3.98	76.25	22.28		150.0	
		Z	3.97	74.99	21.34		150.0	
10186- AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM)	X	3.92	75.90	21.03	3.01	150.0	± 9.6 %
		Y	3.12	70.94	18.87		150.0	
		Z	3.27	70.88	18.57		150.0	
10187- CAD	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	3.09	71.48	20.50	3.01	150.0	± 9.6 %
		Y	2.83	68.98	19.22		150.0	
		Z	2.92	68.83	18.86		150.0	
10188- CAD	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	×	5.86	84.66	25.71	3.01	150.0	± 9.6 %
		Y	4.16	77.21	22.80		150.0	
		Z	4.11	75.71	21.74		150.0	
10189- AAD	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	4.07	76.66	21.44	3.01	150.0	± 9.6 %
		Υ	3.20	71.48	19.21		150.0	
		Z	3.34	71.33	18.86		150.0	
10193- CAB	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.62	67.31	16.79	0.00	150.0	± 9.6 %
		Y	4.61	67.13	16.67		150.0	
		Z	4.63	66.64	16.32		150.0	
10194- CAB	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.80	67.63	16.90	0.00	150.0	± 9.6 %
		Y	4.79	67.44	16.79		150.0	
		Z	4.81	66.98	16.44		150.0	
10195- CAB	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	×	4.84	67.65	16.91	0.00	150.0	± 9.6 %
		Y	4.83	67.46	16.80		150.0	
		Z	4.85	67.01	16.45		150.0	
10196- CAB	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.63	67.38	16.81	0.00	150.0	± 9.6 %
2000		Y	4.62	67.20	16.69		150.0	
		Z	4.64	66.72	16.35		150.0	
10197- CAB	IEEE 802.11n (HT Mixed, 39 Mbps, 16- QAM)	X	4.82	67.65	16.91	0.00	150.0	± 9.6 %
		Y	4.80	67.46	16.80		150.0	
		Z	4.83	67.01	16.45		150.0	
10198- CAB	IEEE 802.11n (HT Mixed, 65 Mbps, 64- QAM)	X	4.84	67.67	16.92	0.00	150.0	± 9.6 %
		Υ	4.83	67.48	16.81		150.0	
		Z	4.86	67.02	16.47		150.0	
10219- CAB	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.58	67.42	16.79	0.00	150.0	± 9.6 %
		Υ	4.57	67.23	16.67		150.0	
		Z	4.59	66.74	16.32		150.0	
10220- CAB	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.81	67.61	16.90	0.00	150.0	± 9.6 %
		Υ	4.80	67.43	16.79		150.0	
		Z	4.82	66.99	16.45		150.0	
10221- CAB	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64- QAM)	Х	4.85	67.58	16.90	0.00	150.0	± 9.6 %
		Υ	4.84	67.40	16.79		150.0	
		Z	4.86	66.95	16.45		150.0	
10222- CAB	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	5.16	67.68	16.95	0.00	150.0	± 9.6 %
		Y	5.16	67.52	16.86		150.0	

10223- CAB	IEEE 802.11n (HT Mixed, 90 Mbps, 16- QAM)	X	5.46	67.82	17.02	0.00	150.0	± 9.6 %
10001		Y	5.46	67.69	16.95		150.0	
		Z	5.50	67.39	16.68		150.0	
10224- CAB	IEEE 802.11n (HT Mixed, 150 Mbps, 64- QAM)	X	5.21	67.81	16.94	0.00	150.0	± 9.6 %
		Y	5.21	67.64	16.84		150.0	
40005	111110	Z	5.23	67.28	16.54		150.0	
10225- CAB	UMTS-FDD (HSPA+)	X	3.00	67.90	16.68	0.00	150.0	± 9.6 %
		Y	2.96	67.42	16.36		150.0	
10226-	LTE TOO (OC TO)	Z	2.91	66.30	15.70		150.0	
CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	28.42	108.86	30.95	6.02	65.0	± 9.6 %
		Y	9.33	89.97	25.67		65.0	
40007	175 755 (5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	Z	12.94	94.59	27.15		65.0	
10227- CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	21.35	101.81	28.19	6.02	65.0	± 9.6 %
		Y	8.75	87.49	24.18		65.0	
40000	LTF TDD 100 TD	Z	11.26	90.67	25.26		65.0	
10228- CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	10.86	97.44	30.13	6.02	65.0	± 9.6 %
		Υ	6.13	85.76	26.19	1	65.0	
10229-	LTE TOD (00 EDV)	Z	8.36	90.85	27.98		65.0	
CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM)	X	24.85	106.34	30.15	6.02	65.0	± 9.6 %
		Υ	8.74	88.70	25.15		65.0	
40000	175 750 100 100	Z	12.15	93.35	26.67		65.0	
10230- CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM)	X	18.97	99.75	27.52	6.02	65.0	± 9.6 %
		Y	8.18	86.30	23.70		65.0	
		Z	10.60	89.59	24.82		65.0	
10231- CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	10.18	96.09	29.61	6.02	65.0	± 9.6 %
		Y	5.87	84.85	25.78		65.0	
		Z	8.01	89.95	27.59		65.0	
10232- CAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	24.81	106.33	30.15	6.02	65.0	± 9.6 %
		Y	8.72	88.68	25.14		65.0	
		Z	12.13	93.33	26.66		65.0	
10233- CAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM)	X	18.93	99.74	27.51	6.02	65.0	± 9.6 %
		Y	8.16	86.28	23.69		65.0	
		Z	10.58	89.57	24.82		65.0	
10234- CAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	9.62	94.82	29.07	6.02	65.0	± 9.6 %
		Y	5.65	84.02	25.35		65.0	
		Z	7.70	89.07	27.18		65.0	
10235- CAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	24.90	106.42	30.17	6.02	65.0	± 9.6 %
		Y	8.72	88.70	25.15		65.0	
40000		Z	12.14	93.37	26.68		65.0	
10236- CAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	19.27	99.98	27.58	6.02	65.0	± 9.6 %
		Υ	8.25	86.42	23.73		65.0	
40007		Z	10.71	89.74	24.87		65.0	
10237- CAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	10.22	96.20	29.65	6.02	65.0	± 9.6 %
		Υ	5.87	84.89	25.79		65.0	
		Z	8.02	90.03	27.62		65.0	
10238- CAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	24.74	106.30	30.14	6.02	65.0	± 9.6 %
		Y	8.69	88.64	25.13		65.0	
			0.03					