PROBE CALIBRATION CERTIFICATES

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





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Accreditation No.: SCS 0108

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Client BACL

Certificate No: EX3-3619_Sep17

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3619

Calibration procedure(s) QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5,

QA CAL-25.v6

Calibration procedure for dosimetric E-field probes

Calibration date: September 25, 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	(D	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	05-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	05-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
Calibrated by: Michael Weber Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Issued: September 25, 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 ConvF DCP sensitivity in TSL / NORMx,y,z diade compression point

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

Polarization ø o rotation around probe axis

Polarization 9 8 rotation around an axis that is in the plane normal to probe axis (at measurement center),

e., 9 = 0 is normal to probe axis

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

Calibration is Performed According to the Following Standards:

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

IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from handheld and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016 IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices

used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010 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 9 = 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 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 \pm 50 MHz to \pm 100

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 unsertainty required).

Probe EX3DV4

SN:3619

Manufactured: July 3, 2007

Calibrated: September 25, 2017

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3619

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (µV/(V/m) ²) ^A	0.46	0.37	0.39	± 10.1 %
DCP (mV) ⁸	96.6	93.8	94.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	С	D dB	VR mV	Unc [±] (k=2)
0	cw	X	0.0	0.0	1.0	0.00	147.1	±3.0 %
		Y	0.0	0.0	1.0		147.9	
		Z	0.0	0.0	1.0		137.9	

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	52.91	392.8	37.02	18.86	0.60	5.10	0.102	0.556	1.009
Y	52.72	397.3	37.78	12.52	1.50	5.03	0.000	0.617	1.009
Z	56.09	413.1	36.90	20.26	0.90	5.10	0.639	0.511	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 E²-field uncertainty inside TSL (see Pages 5 and 6).

B Numerical linearization parameter: uncertainty not required.

Linearization parameter uncertainty not required.

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

Post Repair/Re-Calibration Verification

Date Received Back	
Cal Cert/Sticker/Date OK?	Date
Functional Verification OK?	Date
Verifications By:	

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3619

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)
450	43.5	0.87	9.43	9.43	9.43	0.13	1.20	± 13.3 %
600	42.7	0.88	9.18	9.18	9.18	0.10	1.20	± 13.3 %
750	41.9	0.89	9.25	9.25	9.25	0.41	0.86	± 12.0 %
835	41.5	0.90	8.90	8.90	8.90	0.41	0.85	± 12.0 %
1750	40.1	1.37	7.37	7.37	7.37	0.40	0.90	± 12.0 %
1900	40.0	1.40	6.99	6.99	6.99	0.35	0.99	± 12.0 %
2450	39.2	1.80	6.59	6.59	6.59	0.43	0.82	± 12.0 %
2600	39.0	1.96	6.55	6.55	6.55	0.41	0.86	± 12.0 %
5250	35.9	4.71	4.60	4.60	4.60	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.18	4.18	4.18	0.40	1.80	± 13.1 %
. 5800	35.3	5.27	4.19	4.19	4.19	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.

*A frequencies betwo 3 GHz, the validity of tissue parameters (c 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 (c and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

*ApharDepth 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 helf the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3619

Calibration Parameter Determined in Body Tissue Simulating Media

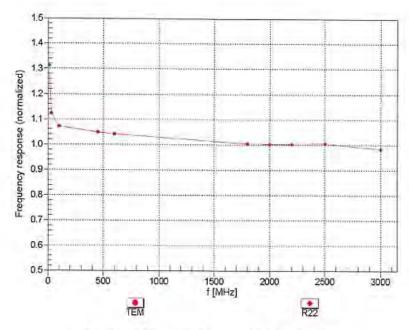
f (MHz) ^C	Relative Permittivity F	Conductivity (S/m) F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ⁶ (mm)	Unc (k=2)
450	56.7	0.94	9.45	9.45	9.45	0.09	1.20	± 13.3 %
600	56.1	0.95	8.91	8.91	8.91	0.08	1.20	± 13.3 %
750	55.5	0.96	8.67	8.67	8.67	0.52	0.88	± 12.0 %
835	55.2	0.97	8.30	8.30	8.30	0.43	0.85	± 12.0 %
1750	53.4	1.49	7.28	7.28	7.28	0.36	0.85	± 12.0 %
1900	53.3	1.52	7.02	7.02	7.02	0.41	0.80	± 12.0 %
2450	52.7	1.95	6.73	6.73	6.73	0.25	0.89	± 12.0 %
2600	52.5	2.16	6.52	6.52	6.52	0.29	0.95	± 12.0 %
5250	48.9	5.36	4.28	4.28	4.28	0.35	1.90	± 13.1 %
5600	48.5	5.77	3.61	3.61	3.61	0.40	1.90	± 13.1 %
5800	48.2	6.00	4.00	4.00	4.00	0.40	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.

**At frequencies below 3 GHz, the validity of tissue parameters (c 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 (c and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

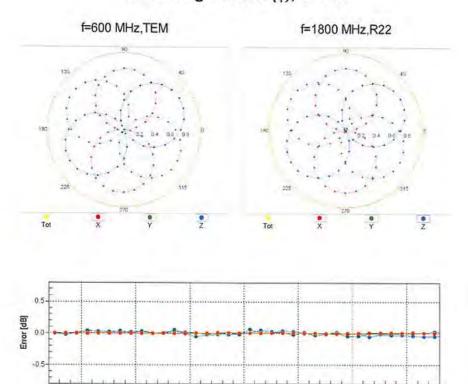
**At pha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from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



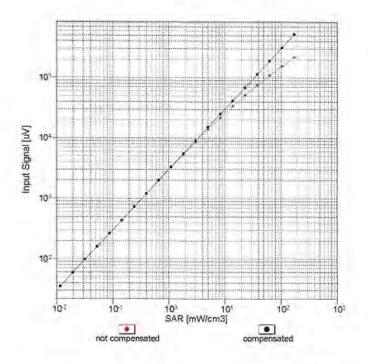
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

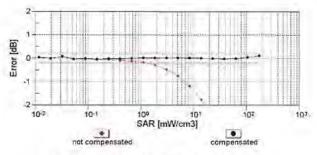
1800 MHz

2500 MHz

100 MHz

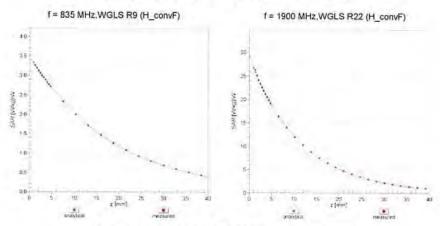
Dynamic Range f(SAR_{head}) (TEM cell , f_{eval}= 1900 MHz)



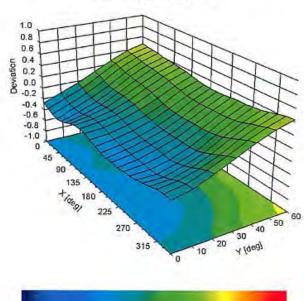


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



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



DASY/EASY - Parameters of Probe: EX3DV4 - SN:3619

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	25.7
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

EX3DV4-SN:3619

September 25, 2017

Appendix: Modulation	Calibration	Parameters
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UID	Communication System Name		A dB	dB√μV	¢	dB	VR mV	Max Unc ^E
0	cw	x	0.00	0.00	4.00	2 2 2	L	(k=2)
		Ŷ	0.00	0.00	1.00	0.00	147.1	±3.0 %
		ż	0.00		1.00		147.9	
10010- CAA	SAR Validation (Square, 100ms, 10ms)	X	100.00	0.00 146.42	42.91	10.00	137.9 20.0	± 9.6 %
		ĺΥ	100.00	136.02	38.82		20.0	
		Ż	100.00	156.09	48.32		20.0	
10011- CAB	UMTS-FDD (WCDMA)	X	100.00	186.20	59.83	0.00	150.0	±9.6%
		Υ	100.00	182.43	58.08		150.0	
		Z	100.00	192.66	63.54		150.0	
10012- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	х	2.72	83.26	29.81	0.41	150.0	± 9.6 %
		Y	3.45	89.08	31.89		150.0	
100/1		Z	3.46	89.22	33.32		150.0	
10013- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps)	×	5.64	69.35	20.04	1.46	150.0	± 9.6 %
		Y	5.66	69.41	19.97		150.0	
40051	0011500 50011	Z	5.88	69.99	20.69		150.0	
10021- DAC	GSM-FDD (TDMA, GMSK)	X	100.00	154.52	47.69	9.39	50.0	± 9.6 %
		Y	100.00	142.43	42.67		50.0	
4000-	CODO CODO CONTRACTOR DE LA CONTRACTOR DE	Z	100.00	160.94	51.62		50.0	
10023- DAC	GPRS-FDD (TDMA, GMSK, TN 0)	Х	100.00	153.25	47.14	9.57	50.0	± 9.6 %
		Y	100.00	141.37	42.24		50.0	
		Z	100.00	159.79	51.12		50.0	
10024- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	х	100.00	168.47	52.96	6.56	60.0	± 9.6 %
		Y	100.00	155.02	47.10		60.0	
		Z	100.00	174.57	56.75		60.0	
10025- DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	7.44	90.92	39.98	12.57	50.0	± 9.6 %
		Y	4.21	66.05	24.62		50.0	
		Z	6.81	85.51	37.44		50.0	
10026- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	×	19.44	118.66	46.05	9.56	60.0	± 9.6 %
		Y	9.82	93.79	35.46		60.0	
1005		Z	18.03	115.62	45.44		60.0	
10027- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	187.31	60.49	4.80	80.0	± 9.6 %
	 	Y	100.00	172.56	53.96		80.0	
10028- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	192.76 211.94	64.07 70.46	3.55	100.0	±9.6 %
		Y	100,00	195.60	63.17		100.0	
		ż	100.00	215.90	73.53		100.0	
10029- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	x	9.88	98.25	37.53	7.80	80.0	± 9.6 %
		Υ	6.96	85.83	31.44		80.0	
		Z	10.21	98.48	38.05		80.0	
10030- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	×	100.00	174.93	55.31	5.30	70.0	± 9.6 %
		Υ	100.00	161.43	49.33		70.0	
		Z	100.00	181.11	59.15		70.0	
10031- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	×	100.00	275.49	95.87	1.88	100.0	± 9.6 %
		Y	100.00	251.73	85.35		100.0	
		Z	100.00	272.78	96.61		100.0	

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10032- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	х	100.00	345.14	124.04	1.17	100.0	± 9.6 %
		Υ	100.00	308.97	108.28		100.0	
		Z	100.00	328.89	119.66		100.0	
10033- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	х	100.00	159.17	50.41	5.30	70.0	± 9.6 %
		Υ	100.00	151.60	46.85		70.0	
		Z	100.00	163.46	53.13		70.0	
10034- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	×	100.00	166.80	52.19	1.88	100.0	± 9.6 %
		Y	100.00	161.96	49.86		100.0	
		Z	100.00	172.84	55.71		100.0	
10035- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	x	100.00	170.30	53.30	1.17	100.0	± 9.6 %
		Υ	100.00	166.04	51.25		100.0	
		Z	100.00	176.79	57.04		100.0	
10036- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	х	100.00	159.83	50.73	5.30	70.0	± 9.6 %
		Y	100.00	152.24	47.17	_	70.0	
		Z	100.00	164.09	53.43		70.0	
10037- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	x	100.00	167.32	52.38	1.88	100.0	± 9.6 %
		Y	100.00	162.33	49.98		_100.0	
1007		Z	100.00	173.39	55.91		100.0	
10038- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	100.00	171.36	53.79	1.17	100.0	± 9.6 %
		Υ	100.00	167.07	51.72		100.0	L
		Z	100.00	177.80	57.50		100.0	
10039- CAB	CDMA2000 (1xRTT, RC1)	Х	100.00	167.09	51.53	0.00	150.0	± 9.6 %
		Υ	100.00	165.71	50.86		150.0	
		Z	100.00	173.37	55.16		150.0	
10042- CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4- DQPSK, Halfrate)	×	100.00	159.05	48.89	7.78	50.0	± 9.6 %
		Υ	100.00	147.06	43.80		50.0	
		Z	100.00	166.23	53.15		50.0	
10044- CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	×	0.27	60.00	46.16	0.00	150.0	±9.6%
		Υ	0.27	62.94	43.12		150.0	
		Z	0.39	65.86	45.75		150.0	
10048- CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	×	100.00	151.06	47.39	13.80	25.0	±9.6%
		Υ	100.00	134.38	40.73		25.0	
		Z	100.00	157.65	51.51		25.0	
10049- CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	×	100.00	148.31	45.14	10.79	40.0	± 9.6 %
		Y	100.00	137.38	40.80		40.0	
		Z	100.00	155.34	49.36		40.0	
10056- CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	×	100.00	147.90	46.36	9.03	50.0	±9.6 %
		Y	100.00	140.04	42.87		50.0	
40055		Z	100.00	151.85	48.94		50.0	
10058- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	7.13	89.66	33.38	6.55	100.0	±9.6 %
		Y	5.69	81.90	29.26		100.0	
40055		Z	7.61	90.75	34.28		100.0	
10059- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	×	3.43	90.16	32.89	0.61	110.0	±9.6 %
		Y	4.46	96.33	34.75		110.0	
		Z	4.58	97.88	36.95		110.0	
10060- CAB	IEEE 802.11b WIFi 2.4 GHz (DSSS, 5.5 Mbps)	×	100.00	203.28	67.14	1.30	110.0	± 9.6 %
		Y Z	100.00	195.01	63.30		110.0	

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10061- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	×	100.00	179.75	58.70	2.04	110.0	± 9.6 %
		Υ	100.00	173.12	55.52	_	110.0	
		Z	100.00	183.86	61.31		110.0	
10062- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	5.55	69.89	19.78	0.49	100.0	± 9.6 %
		Ϋ́	5.60	70.07	19.83		100.0	
		Z	5.83	70.69	20.54		100.0	
10063- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	5.57	70.01	19.91	0.72	100.0	± 9.6 %
		Y	5.61	70.17	19.93		100.0	
		Z	5.85	70.82	20.67		100.0	
10064- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	×	5.85	70.06	19.96	0.86	100.0	± 9.6 %
		Υ	5.89	70.17	19.94		100.0	
		Z	6.13	70.81	20.66		100.0	
10065- CAB	IEEE 802.11a/h WIFi 5 GHz (OFDM, 18 Mbps)	×	5.70	69.99	20.12	1.21	100.0	± 9.6 %
		Y	5.74	70.07	20.07		100.0	
40055		Z	5.98	70.75	20.84		100.0	
10066- CAB	IEEE 802.11a/h WIFi 5 GHz (OFDM, 24 Mbps)		5.70	69.92	20.24	1.46	100.0	± 9.6 %
		Υ	5.73	69.98	20.16		100.0	
4445-		Z	5.98	70.65	20.94		100.0	
10067- CAB	IEEE 802.11a/h WIFI 5 GHz (OFDM, 36 Mbps)	×	5.92	69.63	20.39	2.04	100.0	± 9.6 %
		Υ	5.94	69.61	20.23		100.0	
		Z	6.17	70.21	20.99		100.0	
10068- CAB	IEEE 802.11a/h WIFI 5 GHz (OFDM, 48 Mbps)	×	5.97	69.69	20.62	2.55	100.0	± 9.6 %
		Υ	5.99	69.65	20.43		100.0	
		Z	6.23	70.30	21.23		100.0	
10069- CAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	×	6.02	69.48	20.67	2.67	100.0	± 9.6 %
		Y	6.03	69.43	20.47		100.0	
		Z	6.26	70.01	21.24		100.0	
10071- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	5.70	69.28	20.25	1.99	100.0	± 9.6 %
		Y	5.73	69.30	20.13		100.0	
		Z	5.94	69,87	20.87		100.0	
10072- CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 12 Mbps)	×	5.73	69.83	20.63	2.30	100.0	± 9.6 %
		Y	5.75	69.82	20.47		100.0	
		Z	5.98	70.48	21.28		100.0	
10073- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	5.77	69.89	20.91	2.83	100.0	±9.6%
		Y	5.79	69.84	20.70		100.0	
		Z	6.02	70.50	21.54		100.0	
10074- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	5.71	69.63	21.00	3.30	100.0	± 9.6 %
		Y	5.73	69.59	20.77		100.0	
		Z	5.95	70.22	21.62		100.0	
10075- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	Х	5.74	69.72	21.32	3.82	90.0	±9.6%
		Y	5.77	69.66	21.03		90.0	
		Z	5.99	70.33	21.95		90.0	
10076- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	×	5.69	69.23	21.27	4.15	90.0	± 9.6 %
		Y	5.73	69.18	20.99		90.0	
		Z	5.92	69.76	21.86		90.0	
10077- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	×	5.71	69.27	21.35	4.30	90.0	± 9.6 %
		Y	5.75	69.22	21.06		90.0	
		Z	5.94	69.79	21.93		90.0	

10081- CAB	CDMA2000 (1xRTT, RC3)	×	100.00	188.12	59.66	0.00	150.0	± 9.6 %
		Y	100.00	184.82	58.14		150.0	
		Z	100.00	195.82	64.08		150.0	
10082- CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4- DQPSK, Fullrate)	×	100.00	129.45	32.85	4.77	80.0	± 9.6 %
		Y	100.00	121.04	29.21		80.0	
		Z	100.00	145.24	40.72		80.0	
10090- DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	×	100.00	168.10	52.81	6.56	60.0	± 9.6 %
		Y	100.00	154.72	46.98		60.0	
10097-	LINTO COD HIODON	Z	100.00	174.19	56.59		60.0	
CAB	UMTS-FDD (HSDPA)	Х	27.92	129.29	42.02	0.00	150.0	± 9.6 %
		Y	100.00	156.60	48.39		150.0	
40000	LINETO FOR CHOURA COLLAND	Z	99.33	162.54	51.76		150.0	
10098- CAB	UMTS-FDD (HSUPA, Subtest 2)	X	31.92	132.96	43.08	0.00	150.0	±9.6%
		Y	100.00	157.25	48.62		150.0	
10099-	EDGE EDD (TDMA ADOL) THE C	Z	100.00	163.48	52.09		150.0	
DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	19.72	119.04	46.16	9.56	60.0	± 9.6 %
		Y	9.87	93.88	35.49		60.0	
10100-	LTE COD (DO COLLA 400N DC CC	Z	18.23	115.91	45.53		60.0	
CAD_	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	×	20.39	109.73	34.38	0.00	150.0	±9.6 %
		Υ	31.33	118.04	36.60		150.0	
10101-	LTE FOR 100 FOLIA 40001 FR. 60	Z	51.38	131.16	41.28		150.0	
CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	5.62	79.03	23.76	0.00	150.0	± 9.6 %
		Y	6.05	80.49	24.33		150.0	
40400		Z	6.66	82.76	25.90		150.0	
10102- CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	×	5.47	77.76	23.25	0.00	150.0	± 9.6 %
		Y	5.87	79.22	23.85		150.0	
40400	177 777 100 7711	Z	6.35	81.00	25.20		150.0	
10103- CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	×	16.00	96.35	30.75	3.98	65.0	± 9.6 %
		Υ	12.65	90.44	28.30		65.0	
		Z	20.49	101.78	33.05		65.0	
10104- CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	×	9.77	83.89	26.84	3.98	65.0	± 9.6 %
		Y	8.44	79.95	24.88		65.0	
40405	177 700 100 700 100	Z	10.81	85.84	27.99		65.0	
10105- CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	×	8.96	81.72	26.17	3.98	65.0	±9.6 %
		Y	7.66	77.58	24.09		65.0	
10108-	LTE EDD (DO ED)()	Z	9.58	82.82	26.96		65.0	
CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	×	17.20	108.95	34.69	0.00	150.0	±9.6%
		Y	28.44	118.98	37.41		150.0	
10109-	LTE EDD /OC EDWA 4000/ DD 40	Z	40.01	129.01	41.36		150.0	
CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	×	5.68	81.51	25.04	0.00	150.0	± 9.6 %
		Y	6.40	83.99	25.99		150.0	
10110- CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	6.97 22.12	86.08 118.98	27.53 38.33	0.00	150.0 150.0	± 9.6 %
	1	Y	50.16	135.78	42.54		450.0	
		ż	64.73	145.48	42.51 46.49		150.0	
10111-	LTE-FDD (SC-FDMA, 100% RB, 5 MHz,	Ιź	8.02	92.35	29.54	0.00	150.0	4000
CAE	16-QAM)	Ŷ	11.80			0.00	150.0	± 9.6 %
		Z		100.51	32.25		150.0	
			11.21	100.38	33.19	Щ.	150.0	

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10112- CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	Х	5.51	79.94	24.35	0.00	150.0	±9.6%
		Υ	6.12	82.14	25.22		150.0	
		Z	6.58	83.83	26.58		150.0	r
10113- CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	7.42	89.53	28.43	0.00	150.0	± 9.6 %
		Y	10.25	96.39	30.81		150.0	
		Z	9.81	96.13	31.61		150.0	
10114- CAB	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	x	6.06	70.45	19.58	0.00	150.0	± 9.6 %
		. Y	6.14	70.73	19.73	L.	150.0	
		Z	6.35	71.30	20.33		150.0	
10115- CAB	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	х	6.36	70.42	19.50	0.00	150.0	± 9.6 %
		Y	6.43	70.64	19.62		150.0	
		Z	6.69	71.32	20.25		150.0	
10116- CAB	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	×	6.21	70.79	19.66	0.00	150.0	± 9.6 %
_		Υ	6.30	71.07	19.81		150.0	
		Z	6.53	71.70	20.44		150.0	
10117- CAB	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	6.01	70.27	19.51	0.00	150.0	±9.6%
		Y	6.09	70.53	19.65		150.0	
		Z	6.32	71.18	20.29		150.0	
10118- CAB	IEEE 802.11n (HT Mixed, 81 Mbps, 16- QAM)	×	6.49	70.76	19.67	0.00	150.0	±9.6 %
		Υ	6.58	71.02	19.80		150.0	
		Z	6.81	71.60	20.39		150.0	
10119- CAB	IEEE 802.11n (HT Mixed, 135 Mbps, 64- QAM)	×	6.18	70.72	19.64	0.00	150.0	±9.6%
		Υ	6.27	71.00	19.79		150.0	
		Ż	6.50	71.62	20.42		150.0	
10140- CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	x	5.55	77.78	23.15	0.00	150.0	±9.6%
		Ÿ	5.93	79.13	23.71		150.0	
		Z	6,44	81.01	25.09		150.0	
10141- CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	5.51	77.00	22.86	0.00	150.0	±9.6 %
		Υ	5.86	78.31	23.42		150.0	
		Z	6.29	79.85	24.64		150.0	
10142- CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	х	100.00	154.67	47.53	0.00	150.0	±9.6%
		Υ	100.00	153.27	46.84		150.0	
		Z	100.00	158.83	50.01		150.0	
10143- CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	36.85	126.19	39.50	0.00	150.0	±9.6%
		Y	100.00	146.43	44.33		150.0	
		Z	99.99	150.96	46.99		150.0	
10144- CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	×	15.31	105.50	32.82	0.00	150.0	±9.6 %
		Y	30.00	118.49	36.37		150.0	
		Z	30.28	121.64	38.65		150.0	
10145- CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	100.00	158.80	47.79	0.00	150.0	±9.6 %
		Y	100.00	157.59	47.20		150.0	
		Z	100.00	165.89	51.76		150.0	
10146- CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	×	100.00	140.95	40.54	0.00	150.0	± 9.6 %
		Ŷ	100.00	140.77	40.48		150.0	
		Z	100.00	146.42	43.73		150.0	
10147- CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	×	100.00	142.11	41.17	0.00	150.0	± 9.6 %
		Y	100.00	142.29	41.27		150.0	

10149- CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	×	5.72	81.66	25.12	0.00	150.0	± 9.6 %
JAN	i control	Y	6.47	84.21	26.10		150.0	
		ż	7.02	86.25	27.62		150.0	
10150- CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	x	5.54	80.05	24.41	0.00	150.0	± 9.6 %
		Υ	6.17	82.33	25.32		150.0	
		Z	6.61	83.97	26.65		150.0	
10151- CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	×	24.59	108.08	34.95	3.98	65.0	±9.6%
		Y	14.56	95.63	30.48	_	65.0	
10150	175 755 /55 55111 511/55	Z	30.62	113.32	37.13		65.0	
10152- CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	10.13	86.36	27.72	3.98	65.0	± 9.6 %
		Y	8.36	81.34	25.34		65.0	
10153-	LTE-TDD (SC-FDMA, 50% RB, 20 MHz.	Z	11.39	88.69	29.05	0.00	65.0	
10153- CAD	64-QAM)	Ŷ		86.79	28.21	3.98	65.0	± 9.6 %
			8.78	82.25	26.05		65.0	
10154-	LTE-FDD (SC-FDMA, 50% RB, 10 MHz.	Z	11.59	88.91	29.44	0.55	65.0	. 0
CAE	QPSK)		26.68	123.34	39.64	0.00	150.0	±9.6%
		Y	81.73	146.71	45.30		150.0	
10155-	LTE EDD (CO EDMA SON DD 40 MIL	Z	90.92	153.69	48.58		150.0	
CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	8.00	92.30	29.53	0.00	150.0	±9.6 %
	·	Y	11.69	100.31	32.19		150.0	
10156-	LTE EDD /EC EDMA FON DO SAUL	Z	11.15	100.27	33.16		150.0	
CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	100.00	157.37	48.40	0.00	150.0	±9.6 %
		Y	100.00	155.94	47.69		150.0	
10157	177 500 (00 5014) 504 50	Z	100.00	161.99	51.13		150.0	
10157- CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	Х	100.00	146.17	43.71	0.00	150.0	± 9.6 %
		Y	100.00	145.19	43.22		150.0	
10150	LTE COD (CO COLLA COM DE LA LIVI	Z	100.00	150.59	46.31		150.0	
10158- CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	Х	7.48	89.74	28.53	0.00	150.0	± 9.6 %
		Y	10.41	96.78	30.97		150.0	
10150	175 500 100 50111 5011 50	Z	9.90	96.38	31.72		150.0	
10159- CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	×	100.00	145.77	43.63	0.00	150.0	± 9.6 %
		Y	100.00	144.96	43.21		150.0	
10160-	LTE EDD (OO ED) A SON DE AS LUI	Z	100.00	150.11	46.19		150.0	
CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	8.98	94.02	29.93	0.00	150.0	± 9.6 %
		Y	11.87	99.63	31.69		150.0	
10161-	LTE-FDD (SC-FDMA, 50% RB, 15 MHz.	Z	13.37	103.46	33.93		150.0	
CAD	16-QAM)		5.58	80.92	24.82	0.00	150.0	± 9.6 %
		Y	6.34	83.62	25.88		150.0	
10162-	LTE-EDD (SO EDM) 500 DD 45 101	Z	6.73	85.08	27.17		150.0	
CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	5.59	80.29	24.52	0.00	150.0	± 9.6 %
	 	Y	6.27	82.72	25.49		150.0	
10166- CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	6.63 5.01	84.05 76.82	26.71 25.04	3.01	150.0 150.0	± 9.6 %
OME	(Ar-SN)	-	F 20	70.45	25.05			
		Z	5.30 5.66	78.12	25.63		150.0	
10167-	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz,	X	7.20	79.32	26.68		150.0	
CAE	16-QAM)			83.65	27.00	3.01	150.0	±9.6 %
	 	l Y	7.75	85.12	27.56		150.0	
		Z	9.01	88.54	29.47		150.0	

10168- CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	×	8.44	87.66	28.93	3.01	150.0	± 9.6 %
		Ϋ́	9.74	90.89	30.18		150.0	
		Z	10.89	93.45	31.66		150.0	
10169- CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	×	4.51	78.23	26.11	3.01	150.0	± 9.6 %
		Y	4.88	79.86	26.78		150.0	
		Z	5.61	83.18	28.83		150.0	
10170- CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	×	8.64	93.21	31.75	3.01	150.0	± 9.6 %
		Y	10.74	98.02	33.43		150.0	
40474	1.75.500 (00.500)	Z	15.34	107.12	37.17		150.0	
10171- AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	6.66	86.27	28.20	3.01	150.0	± 9.6 %
		Y	7.15	87.35	28.50		150.0	
		Z.	10.53	96.72	32.68		150.0	
10172- CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	×	100.00	157.06	51.92	6.02	65.0	± 9.6 %
		Υ	29.58	122.92	41.84		65.0	
10455	1 77 770 100 7011	Z	100.00	157.86	52.85		65.0	
10173- CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	×	100.00	147.04	46.72	6.02	65.0	± 9.6 %
		Y	100.00	143.66	45.07		65.0	
		Z	100.00	147.61	47.52		65.0	
10174- CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	х	100.00	144.70	45.45	6.02	65.0	±9.6%
		Υ	100.00	141.89	44.08		65.0	
		Z	_100.00	146.18	46.69		65.0	
10175- CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	x	4.45	77.77	25.80	3.01	150.0	±9.6%
		Y	4.76	79.15	26.35		150.0	
		Z	5.51	82.58	28.47		150.0	
10176- CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	8.66	93.26	31.77	3.01	150.0	± 9.6 %
		Y	10.77	98.08	33.45		150.0	
		Z	15.39	107.20	37.19		150.0	
10177- CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	х	4.49	78.03	25.94	3.01	150.0	±9.6%
		Υ	4.84	79.55	26.56		150.0	
		Z	5.58	82.93	28.64		150.0	
10178- CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16- QAM)	х	8.48	92.72	31.54	3.01	150.0	±9.6 %
		Υ	10.38	97.15	33.09		150.0	
		Z	14.83	106.24	36.85		150.0	
10179- CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	7.76	90.19	30.08	3.01	150.0	±9.6 %
		Y	8.90	92.90	31.00		150.0	
		Z	13.20	102.68	35.12		150.0	
10180- CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM)	X	6.62	86.10	28.11	3.01	150.0	±9.6 %
		Y	7.07	87.03	28.35		150.0	
		Z	10.41	96.42	32.55		150.0	
10181- CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	4.49	78.00	25.93	3.01	150.0	±9.6%
		Υ	4.83	79.51	26.54		150.0	
		Z	5.57	82.89	28.63		150.0	
10182- CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	х	8.46	92.68	31.53	3.01	150.0	± 9.6 %
		Υ	10.35	97.10	33.07		150.0	
		Z	14.79	106.17	36.83		150.0	
10183- AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	6.60	86.05	28.09	3.01	150.0	±9.6 %
		Υ	7.04	86.98	28.33		150.0	
		Z	10.38	96.34	32.52		150.0	

10184- CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	Х	4.50	78.07	25.95	3.01	150.0	± 9.6 %
UNID	a ory	Y	4.85	79.60	26.58		150.0	
		z	5.60	82.97	28.66		150.0	
10185- CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM)	x	8.51	92.81	31.58	3.01	150.0	±9.6%
		Υ	10.44	97.27	33.14		150.0	
		Z	14.92	106.36	36.89		150.0	
10186- AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM)	×	6.65	86.19	28.15	3.01	150.0	± 9.6 %
		Υ	7.10	87.13	28.39		150.0	
		Z	10.48	96.54	32.59		150.0	
10187- CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	×	4.51	78.08	25.99	3.01	150.0	± 9.6 %
		Υ	4.85	79.59	26.61		150.0	
		Z_	5.59	82.96	28.69		150.0	
10188- CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	×	8.97	94.14	32.16	3.01	150.0	± 9.6 %
		Υ	11.36	99.44	34.00		150.0	
		Z	16.21	108.54	37.70		150.0	
10189- AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	×	6.88	87.02	28.55	3.01	150.0	±9.6%
		Υ.	7.46	88.34	28.95		150.0	
		Z	11.02	97.81	33.13		150.0	
10193- CAB	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	×	5.46	70.23	19.64	0.00	150.0	± 9.6 %
		Y	5.55	70.58	19.82		150.0	
		Z	5.77	71.17	20.48		150.0	
10194- CAB	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	×	5.67	70.58	19.73	0.00	150.0	± 9.6 %
		Υ	5.76	70.92	19.91		150.0	
		Z	6.00	71.55	20.57		150.0	
10195- CAB	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	х	5.71	70.56	19.71	0.00	150.0	± 9.6 %
		Y	5.80	70.89	19.89		150.0	
		Z	6.03	71.51	20.54		150.0	
10196- CAB	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	×	5,49	70.36	19.69	0.00	150.0	±9.6 %
		Υ	5.58	70.72	19.88		150.0	
		Z	5.80	71.33	20.55		150.0	
10197- CAB	IEEE 802.11n (HT Mixed, 39 Mbps, 16- QAM)	X	5.69	70.60	19.74	0.00	150.0	± 9.6 %
		Υ	5.78	70.93	19.92		150.0	
		Z	6.01	71.56	20.57		150.0	
10198- CAB	IEEE 802.11n (HT Mixed, 65 Mbps, 64- QAM)	х	5.72	70.59	19.73	0.00	150.0	± 9.6 %
		Υ	5.80	70.91	19.90		150.0	
400/2		Z	6.04	71.53	20.55		150.0	
10219- CAB	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	Х	5.46	70.52	19.75	0.00	150.0	± 9.6 %
		Y	5.55	70.90	19.95		150.0	
40000		Z	5.79	71.52	20.62		150.0	
10220- CAB	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16- QAM)	Х	5.68	70.56	19.72	0.00	150.0	± 9.6 %
		Υ	5.77	70.89	19.90		150.0	
40004	1555 000 11 1155111	Z	6.01	71.53	20.56		150.0	
10221- CAB	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64- QAM)	Х	5.70	70.43	19.66	0.00	150.0	± 9.6 %
		Υ	5.79	70.74	19.83		150.0	
10222-	IFFE DOD 44- WITH THE	Z	6.02	71.35	20.47		150.0	
CAB	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	6.00	70.33	19.54	0.00	150.0	± 9.6 %
		Υ	6.07	70.59	19.68		150.0	
		Z	6.31	71.25	20.33			

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10223- CAB	IEEE 802.11n (HT Mixed, 90 Mbps, 16- QAM)	Х	6.28	70.29	19.46	0.00	150.0	± 9.6 %
		Υ	6.36	70.53	19.60		150.0	
10001		Z	6.60	71.17	20.21		150.0	
10224- CAB	IEEE 802.11n (HT Mixed, 150 Mbps, 64- QAM)		6.07	70.51	19.55	0.00	150.0	± 9.6 %
		Y	6.15	70.78	19.70		150.0	
40000		Z	6.38	71.44	20.34		150.0	
10225- CAB	UMTS-FDD (HSPA+)	×	4.59	76.23	22.87	0.00	150.0	± 9.6 %
		Y	5.00	78.11	23.67		150.0	
10226-	LITE TOD (OA SDL)	Z	5.23	78.95	24.70		150.0	
CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	100.00	147.19	46.83	6.02	65.0	± 9.6 %
		Y	100.00	143.86	45.20		65.0	
10227-	1.75	Z	100.00	147.74	47.62		65.0	
CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	х	100.00	144.45	45.39	6.02	65.0	± 9.6 %
		Υ	100.00	141.39	43.90		65.0	
40000	LITE TOD (OO FOLL)	Z	100.00	145.20	46.27		65.0	
10228- CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	Х	100.00	157.69	52.21	6.02	65.0	± 9.6 %
		Υ	80.09	147.90	48.69		65.0	
40000		Z	100.00	157.91	52.87		65.0	
10229- CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM)	х	100.00	146.98	46.70	6.02	65.0	± 9.6 %
		Υ	100.00	143.62	45.06		65.0	
		Z	100.00	147.55	47.50		65.0	
10230- CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM)	X	100.00	144.35	45.31	6.02	65.0	± 9.6 %
		Y	100.00	141.25	43.80		65.0	
		Z	100.00	145.12	46.20		65.0	
10231- CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	100.00	157.58	52.11	6.02	65.0	± 9.6 %
		Υ	69.62	144.30	47.71		65.0	
		Z	100.00	157.82	52.79		65.0	
10232- CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16- QAM)	x	100.00	147.01	46.71	6.02	65.0	± 9.6 %
		Υ	100.00	143.64	45.06		65.0	
		Z	100.00	147.58	47.51		65.0	
10233- CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM)	х	100.00	144.39	45.32	6.02	65.0	± 9.6 %
		Υ	100.00	141.28	43.81		65.0	
		Z	100.00	145.15	46.21		65.0	
10234- CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	х	100.00	157.28	51.93	6.02	65.0	± 9.6 %
		Y	63.28	141.69	46.92		65.0	
		Z	100.00	157.55	52.62		65.0	
10235- CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	x	100.00	147.04	46.72	6.02	65.0	±9.6%
		Υ	100.00	143.66	45.07		65.0	
		Z	100.00	147.61	47.52		65.0	
10236- CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	Х	100.00	144.31	45.29	6.02	65.0	± 9.6 %
		Υ	100.00	141.21	43.78		65.0	
		Z	100.00	145.08	46.18		65.0	
10237- CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	х	100.00	157.64	52.14	6.02	65.0	± 9.6 %
		Υ	70.63	144.71	47.82		65.0	
		Z	100.00	157.88	52.81		65.0	
10238- CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	100.00	147.05	46.72	6.02	65.0	± 9.6 %
		Y	100.00	143.67	45.07		65.0	

10239-	LTE-TDD (SC-FDMA, 1 RB, 15 MHz,	Х	100.00	144.43	45.34	6.02	65.0	± 9.6 %
CAD	64-QAM)		100.00					
		Y	100.00	141.32	43.82		65.0	
10240-	LTE TOD (SC FOMA 4 DD 45 MILE	Z	100.00	145.20	46.23		65.0	
CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)		100.00	157.67	52.15	6.02	65.0	± 9.6 %
		Υ	70.12	144.55	47.78		65.0	
10241-	177 700 100 50111	Z	100.00	157.91	52.82		65.0	
10241- CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	13.46	94.53	33.13	6.98	65.0	± 9.6 %
		Y	11.24	88.73	30.36		65.0	
10242- CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	15.92 12.60	98.41 92.77	34.98 32.35	6.98	65.0 65.0	± 9.6 %
CAM	04-CAM)	Y	9.84	85.40	00.04			
		Z	13.89	94.76	28.91 33.51		65.0	
10243-	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz.	X	8.84	85.65	30.56	6.98	65.0 65.0	± 9.6 %
CAA	QPSK)	Ŷ	7.32			0.90		19.6%
		Ž	9.32	79.57	27.33		65.0	· .
10244-	LTE-TDD (SC-FDMA, 50% RB, 3 MHz,	\	100.00	86.30 133.98	31.18 40.14	3.98	65.0 65.0	+064
CAB	16-QAM)	^ Y				3.98		±9.6%
		Z	72.41 100.00	126.23 136.28	37.83		65.0	
10245-	LTE-TDD (SC-FDMA, 50% RB, 3 MHz.	×	100.00	133.42	41.80 39.90	3.98	65.0 65.0	±9.6 %
CAB	64-QAM)	Ŷ	56.91	121.03	36.37	3.90		19.6%
		ż	100.00	135.73	41.55		65.0 65.0	
10246- CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	x	100.00	140.57	42.61	3.98	65.0	± 9.6 %
	ursk)	Y	100.00	138.09	41.35		05.0	
		ż	100.00	143.02	44.35		65.0 65.0	
10247- CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	x	25.24	108.57	34.21	3.98	65.0	±9.6 %
		Y	14.35	95.74	29.69		65.0	
		ż	33.61	115.61	37.14	_	65.0	
10248- CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	x	19.94	102.84	32.32	3.98	65.0	±9.6 %
		Y	12.37	91.96	28,28		65.0	
		Z	25.65	108.84	34.98		65.0	
10249- CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	100.00	142.13	43.85	3.98	65.0	±9.6 %
		Y	100.00	139.80	42.66		65.0	
		Z	100.00	144.01	45.28		65.0	
10250- CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	Х	14.16	96.66	31.79	3.98	65.0	± 9.6 %
		Y	10.60	89.28	28.74		65.0	
10251-	LITE TOD (SO EDM) COM SO 40 TO	Z	16.50	100.10	33.53		65.0	
CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	Х	11.44	90.13	28.96	3.98	65.0	± 9.6 %
		Y	8.95	83.94	26.19		65.0	
10252-	LTE TOD (SC EDMA 500/ DD 40 : "	Z	13.03	92.85	30.48		65.0	
CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	86.73	139.25	43.94	3.98	65.0	± 9.6 %
		Y	25.31	110.44	35.49		65.0	
10253- CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	100.00 9.53	143.74 84.86	45.83 27.13	3.98	65.0 65.0	± 9.6 %
		Y	8.01	80.28	24.89		65.0	
		ż	10.62	86.95	28.39		65.0	
10254- CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	x	9.88	85.45	27.63	3.98	65.0	± 9.6 %
		Y	8.44	81.20	25.56		65.0	
		ż	10.94	01.00	20.00			

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10255- CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	х	19.27	103.27	33.71	3.98	65.0	± 9.6 %
		Υ	12.47	92.65	29.67		65.0	
		Z	23.07	107.47	35.61		65.0	
10256- CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	×	100.00	131.21	38.25	3.98	65.0	± 9.6 %
		Y	100.00	129.71	37.50		65.0	
40000		Z	100.00	134.15	40.24		65.0	
10257- CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	100.00	130.27	37.82	3.98	65.0	± 9.6 %
		Υ	100.00	128.83	37.10		65.0	
40050		Z	100.00	133.22	39.81		65.0	
10258- CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	×	100.00	138.46	41.20	3.98	65.0	± 9.6 %
		Υ	100.00	135.86	39.90		65.0	
		Z	100.00	141.53	43.27		65.0	
10259- CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	×	18.72	102.43	32.80	3.98	65.0	± 9.6 %
		Υ	12.23	92.35	28.98		65.0	
		Z	23.11	107.46	35.11		65.0	
10260- CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	х	16.99	99.86	31.91	3.98	65.0	±9.6%
		Υ	11.61	90.80	28.39		65.0	
		Z	20.73	104.52	34.13		65.0	
10261- CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	100.00	142.40	44.29	3.98	65.0	±9.6%
		Υ	40.47	120.92	38.14		65.0	
		Z	100.00	144.04	45.59		65.0	
10262- CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	х	14.15	96.62	31.76	3.98	65.0	±9.6%
		Y	10.58	89.20	28.68		65.0	
		Z	16.50	100.07	33.50		65.0	
10263- CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	×	11.41	90.08	28.95	3.98	65.0	±9.6%
		Y	8.93	83.91	26.19		65.0	
		Z	13.00	92.81	30.47		65.0	
10264- CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	×	83.61	138.36	43.69	3.98	65.0	±9.6%
		Y	24.73	109.90	35.30		65.0	
		Z	100.00	143.68	45.79		65.0	
10265- CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	x	10.12	86.35	27.73	3.98	65.0	± 9.6 %
		Y	8.36	81.35	25.34		65.0	
		Z	11.38	88.68	29.05		65.0	
10266- CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	х	10.40	86.77	28.19	3.98	65.0	±9.6 %
		Y	8.78	82.23	26.04		65.0	
		Ż	11.58	88.89	29.43		65.0	
10267- CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	x	24.37	107.88	34.88	3.98	65.0	± 9.6 %
		Υ	14.48	95.50	30.43		65.0	
		Z	30.32	113.09	37.06		65.0	
10268- CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	×	9.53	82.61	26.37	3.98	65.0	± 9.6 %
		Υ	8.39	79.16	24.61		65.0	
		Z	10.43	84.30	27.42		65.0	
10269- CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	9.19	81.42	25.91	3.98	65.0	± 9.6 %
		Y	8.19	78.25	24.25		65.0	
		Z	10.01	82.98	26.91		65.0	
10270- CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	x	13.08	91.53	29.30	3.98	65.0	± 9.6 %
		Υ	10.34	85.71	26.80		65.0	
		Z	15.01	94,48	30.82	-	65.0	

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10274- CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	Х	5.17	80.96	24.89	0.00	150.0	± 9.6 %
		Υ	5.90	83.68	25.92		150.0	
		Z	6.22	85.10	27.31		150.0	
10275- CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	×	100.00	162.88	50.73	0.00	150.0	± 9.6 %
		Υ	100.00	160.87	49.77		150.0	
		Z	100.00	167.87	53.61		150.0	
10277- CAA	PHS (QPSK)	×	100.00	116.48	29.27	9.03	50.0	± 9.6 %
		Y	100.00	115.49	29.25		50.0	
		Z	100.00	125.32	34.15		50.0	
10278- CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	Х	100.00	138.54	41.23	9.03	50.0	± 9.6 %
		Y	100.00	132.53	38.69		50.0	
40070	BUS (COST)	Z	100.00	144.20	44.66		50.0	
10279- CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	Х	100.00	138.20	41.13	9.03	50.0	± 9.6 %
		Υ	100.00	132.31	38.64		50.0	
10000	ODMANOOD DOL COTTO	Z	100.00	143.71	44.48		50.0	
10290- AAB	CDMA2000, RC1, SO55, Full Rate	Х	100.00	165.50	50.69	0.00	150.0	± 9.6 %
		Ý	100.00	163.79	49.87		150.0	
40004	001110111	Z	100.00	172.07	54.44		150.0	
10291- AAB	CDMA2000, RC3, SO55, Full Rate	Х	100.00	188.22	59.69	0.00	150.0	± 9.6 %
		Υ	100.00	184.87	58.14		150.0	
10000		Z	100.00	195.98	64.13		150.0	
10292- AAB	CDMA2000, RC3, SO32, Full Rate	X	100.00	195.75	63.03	0.00	150.0	±9.6 %
		Y	100.00	192.85	61.68		150.0	
		Z	100.00	202.96	67.27		150.0	
10293- AAB	CDMA2000, RC3, SO3, Full Rate	X	100.00	197.41	64.00	0.00	150.0	±9.6 %
		Υ	100.00	195.19	62.96		150.0	
		Z	100.00	204.14	68.03		150.0	
10295- AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	×	100.00	146.51	46.82	9.03	50.0	±9.6 %
		Υ	38.46	118.92	38.14		50.0	
		Z	100.00	149.97	49.11		50.0	
10297- AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	×	17.63	109.54	34.90	0.00	150.0	±9.6 %
		Y	29.80	120.05	37.74		150.0	
10055		Z	41.55	129.95	41.64		150.0	
10298- AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	100.00	158.51	48.24	0.00	150.0	± 9.6 %
		Υ	100.00	157.15	47.57		150.0	
40000	177 500 400 500	Z	100.00	164.25	51.55		150.0	
10299- AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	100.00	141.59	41.41	0.00	150.0	± 9.6 %
		Υ	100.00	141.28	41.28		150.0	
10055		Z	100.00	145.88	44.01		150.0	
10300- AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	х	100.00	136.02	38.60	0.00	150.0	± 9.6 %
		Y	100.00	135.23	38.23		150.0	
10001	1000 000 to 1000 to 10	Z	100.00	140.68	41.35		150.0	
10301- AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	5.82	69.15	20.80	4.17	50.0	± 9.6 %
		Y	5.78	68,98	20.70		50.0	
10000	IFFE AGO AD-INDAGES	Z	6.08	69.60	21.33		50.0	
10302- AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	х	6.16	69.16	21.19	4.96	50.0	± 9.6 %
		Y	6.13	68.92	21.01		50.0	
		ż	6.45	69.79	21.01		30.0	

10303- AAA	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	×	5.90	68.89	21.12	4.96	50.0	± 9.6 %
		Y	5.88	68.66	20.95		50.0	
		Z	6.20	69.57	21.79		50.0	
10304- AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	×	5.77	69.07	20.80	4.17	50.0	± 9.6 %
		Υ	5.75	68.95	20.72		50.0	
		Z	6.07	69.80	21.51		50.0	
10305- AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	5.50	72.11	23.82	6.02	35.0	± 9.6 %
		Υ	5.73	72.68	23.85		35.0	
40000	IEEE OOG 40. WILLIAM 400 40. 40	Z	5.89	73.23	24.80		35.0	
10306- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	Х	5.63	69.93	22.60	6.02	35.0	± 9.6 %
		Υ	5.75	70.15	22.54		35.0	
		Z	5.94	70.17	22.89		35.0	
10307- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	×	5.59	70.46	22.80	6.02	35.0	±9.6%
		Υ	5.74	70.80	22.78		35.0	
40057		Z	5.94	71.40	23.65		35.0	
10308- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	×	5.58	70.77	23.01	6.02	35.0	± 9.6 %
		Y	5.74	71.11	22.99		35.0	
		Z	5.93	71.71	23.87		35.0	
10309- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	×	5.72	70.28	22.80	6.02	35.0	±9.6%
		Y	5.83	70.43	22.70		35.0	
		Z	6.04	70.51	23.09		35.0	
10310- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	×	5.60	70.13	22.66	6.02	35.0	±9.6%
		Y	5.73	70.40	22.63		35.0	
		Z	5.93	70.97	23.46		35.0	
10311- AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	х	16.49	103.18	32.21	0.00	150.0	± 9.6 %
		Υ	26.96	112.65	34.87		150.0	
		Z	36.51	121.10	38.28		150.0	
10313- AAA	IDEN 1:3	×	100.00	147.23	44.36	6.99	70.0	±9.6%
		Y	100.00	144.16	42.97		70.0	
		Z	100.00	152.82	47.63		70.0	
10314- AAA	IDEN 1:6	×	100.00	162.69	52.78	10.00	30.0	±9.6%
		Y	100.00	153.59	48.78		30.0	
		Z	100.00	167.17	55.64		30.0	
10315- AAB	IEEE 802.11b WIFI 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	×	2.81	86.18	31.37	0.17	150.0	±9.6%
		Y	4.00	95.24	34.63		150.0	
		Z	3.73	93.57	35.46		150.0	
10316- AAB	IEEE 802.11g WIFI 2.4 GHz (ERP- OFDM, 6 Mbps, 96pc duty cycle)	×	5.50	70.18	19.72	0.17	150.0	± 9.6 %
		Y	5.56	70.39	19.80		150.0	
		Z	5.80	71.08	20.53		150.0	
10317- AAB	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	5.50	70.18	19.72	0.17	150.0	± 9.6 %
		Y	5.56	70.39	19.80		150.0	
		Z	5.80	71.08	20.53		150.0	
10400- AAC	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	×	5.69	70.71	19.77	0.00	150.0	±9.6 %
		Υ	5.77	70.99	19.90		150.0	
		Z	6.02	71.68	20.60		150.0	
10401- AAC	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	×	6.27	70.08	19.32	0.00	150.0	± 9.6 %
		Y	6.34	70.27	19.41		150.0	
			0.54		10.41	1	150.0	•

10402-	IEEE 802.11ac WiFi (80MHz, 64-QAM,	X	6.56	70,41	19.31	0.00	150.0	± 9.6 %
AAC	99pc duty cycle)	l ^	0.00	10.41	19.51	0.00	130.0	10.0 %
		Y	6.62	70.59	19.41		150.0	
		Z	6.87	71.27	20.05		150.0	
10403- AAB	CDMA2000 (1xEV-DO, Rev. 0)	×	100.00	165.50	50.69	0.00	115.0	± 9.6 %
		Ŷ	100.00	163.79	49.87		115.0	
		Z.	100.00	172.07	54.44		115.0	
10404- AAB	CDMA2000 (1xEV-DO, Rev. A)	×	100.00	165.50	50.69	0.00	115.0	± 9.6 %
		Y	100.00	163.79	49.87		115.0	
10406-	CDMA2000, RC3, SO32, SCH0, Full	Z	100.00	172.07	54.44		115.0	
AAB	Rate CDMA2000, RC3, SO32, SCH0, Full	X	100.00	153.07	46.52	0.00	100.0	± 9.6 %
		Y	100.00	152.22	46.23		100.0	
10410	LTE TOD (CO EDIM 4 DD 40 MILE	Z	100.00	154.92	48.01		100.0	
10410- AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	156.31	48.07	3.23	80.0	± 9.6 %
		Y	100.00	152.74	46.39		80.0	
10116	IFFE 000 445 MIFLO 4 OUT INCOME.	Z	100.00	158.54	49.86		80.0	
10415- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	2.52	83.98	30.40	0.00	150.0	± 9.6 %
		Y	3.64	93.54	34.03		150.0	
10416-	IEEE OOD 44 MIEI O A OUA MEE	Z	3.33	91.09	34.47		150.0	
10416- AAA	IEEE 802.11g WIFi 2.4 GHz (ERP- OFDM, 6 Mbps, 99pc duty cycle)	×	5.46	70.26	19.69	0.00	150.0	± 9.6 %
		Y	5.55	70.61	19.88		150.0	
40447	100000000000000000000000000000000000000	Z	5.77	71.20	20.52		150.0	
10417- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	5.46	70.26	19.69	0.00	150.0	± 9.6 %
		Y	5.55	70.61	19.88		150.0	
10418-	ISSE COR AL MIRIO A CONTROL	Z	5.77	71.20	20.52		150.0	
AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	×	5.50	70.62	19.83	0.00	150.0	± 9.6 %
		Y	5.59	70.99	20.02	L .	150.0	
40.440		Z	5.82	71.61	20.69		150.0	
10419- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	×	5.50	70.47	19.77	0.00	150.0	± 9.6 %
		Y	5.59	70.83	19.96		150.0	
		Z	5.81	71.43	20.61		150.0	
10422- AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	5.59	70.26	19.64	0.00	150.0	± 9.6 %
		Υ	5.67	70.59	19.81		150.0	
1015-		Z	5.90	71.17	20.44		150.0	
10423- AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	×	5.80	70.64	19.75	0.00	150.0	± 9.6 %
		Υ	5.88	70.95	19.91		150.0	
40464	1555 000 11 11 15	Z	6.12	71.57	20.56		150.0	
10424- AAA	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	5.73	70.67	19.78	0.00	150.0	± 9.6 %
		Y	5.81	71.00	19.96		150.0	
10425-	IEEE 000 44- AFE	Z	6.05	71.62	20.61		150.0	
10425- AAA	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	×	6.29	70.50	19.56	0.00	150.0	± 9.6 %
		Υ	6.37	70.76	19.70		150.0	
40400	IEEE OOO 11 SUP 1	Z	6.59	71.32	20.28		150.0	
10426- AAA	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	×	6.30	70.53	19.57	0.00	150.0	± 9.6 %
		Υ	6.39	70.81	19.72		150.0	
	1	Z	6.60	71.36	20.30		150.0	

10427- AAA	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	×	6.29	70.44	19.52	0.00	150.0	± 9.6 %
		Υ	6.37	70.70	19.66		150.0	
		Z	6.59	71.26	20.24		150.0	
10430- AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	х	7.16	82.33	25.64	0.00	150.0	± 9.6 %
		Y	9.01	87.67	27.87		150.0	
		Z	8.06	84.95	27.30		150.0	
10431- AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	х	5.45	72.35	20.62	0.00	150.0	± 9.6 %
		Υ	5.59	72.91	20.89		150.0	
10432-	LITE EDD (OFDILL AS LOLD STATE OF	Z	5.86	73.62	21.66		150.0	
AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	Х	5.58	71.25	20.08	0.00	150.0	± 9.6 %
		Y	5.68	71.65	20.29		150.0	
40400	LTE COD (OCCUL) CO LUI TOTAL	Z	5.94	72.32	20.99		150.0	
10433- AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	Х	5.74	70.72	19.81	0.00	150.0	±9.6 %
		Y	5.83	71.05	19.98		150.0	
40404	W CDWA (DC T	Z	6.07	71.68	20.64		150.0	
10434- AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	9.02	87.64	27.37	0.00	150.0	± 9.6 %
		Υ	13.21	96.09	30.52		150.0	
10105	1 TE TOO (00 FOLIA 4 OF 10 10)	Z	10.54	91.28	29.41		150.0	
10435- AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	Х	100.00	156.08	47.97	3.23	80.0	± 9.6 %
		Y	100.00	152.48	46.27		80.0	
40447	175 500 1050111 - 1111	Z	100.00	158.33	49.76		80.0	
10447- AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	5.56	76.55	22.29	0.00	150.0	± 9.6 %
		Υ	5.93	77.90	22.86		150.0	
		Z	6.25	78.89	23.90		150.0	
10448- AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	х	5.29	72.31	20.63	0.00	150.0	± 9.6 %
		Υ	5.44	72.91	20.92		_150.0	
		Z	5.70	73.65	21.71		150.0	
10449- AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	х	5.41	71.31	20.16	0.00	150.0	± 9.6 %
		Υ	5.52	71.77	20.39		150.0	
		Z	5.77	72.46	21.12		150.0	
10450- AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	Х	5.51	70.71	19.85	0.00	150.0	± 9.6 %
		Υ	5.61	71.08	20.04		150.0	
		Z	5.84	71.75	20.73		150.0	
10451- AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	х	6.34	79.90	23.36	0.00	150.0	± 9.6 %
		Y	7.00	81.90	24.14		150.0	
		Z	7.42	83.21	25.38		150.0	
10456- AAA	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	×	7.09	70.50	19.27	0.00	150.0	± 9.6 %
		Y	7.16	70.66	19.36		150.0	
		Z	7.38	71.23	19.92		150.0	
10457- AAA	UMTS-FDD (DC-HSDPA)	Х	4.56	68.72	19.50	0.00	150.0	± 9.6 %
		Y	4.64	69.16	19.74		150.0	
40455	00111000011 51155	Z	4.81	69.64	20.36		150.0	
10458- AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	Х	9.06	88.62	27.60	0.00	150.0	± 9.6 %
		Y	13.52	97.28	30.73		150.0	
		Z	10.54	92.23	29.68		150.0	
10459- AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	х	6.53	73.36	22.10	0.00	150.0	± 9.6 %
		Υ	7.24	75.86	23,35		150.0	
		Z	7.13	74.92	23.21		150.0	

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10460-	UMTS-FDD (WCDMA, AMR)	X	100.00	201.40	66,12	0.00	150.0	±9.6%
AAA	, , , , , , , , , , , , , , , , , , , ,							
		Y	100.00	196.70	63.96		150.0	
10461-	LTE TOD (CC FD) (A 4 DD 4 4 MILE	Z	100.00	207.95	69.97		150.0	
AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	Х	100.00	169.78	54.27	3.29	80.0	± 9.6 %
		Y	100.00	163.99	51.56		80.0	
10462-	1 TE 700 (00 FD114 4 DB 4 4 4 1	Z	100.00	172.57	56.37		80.0	
AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	155.05	46.93	3.23	80.0	±9.6 %
		Υ	100.00	149.43	44.37		80.0	
10463-	LTE-TDD (SC-FDMA, 1 RB, 1,4 MHz,	Z	100.00	159.74	49.87		80.0	
AAA	64-QAM, UL Subframe=2,3,4,7,8,9)		100.00	151.90	45.34	3.23	80.0	± 9.6 %
		Y	100.00	146.25	42.78		80.0	
10464-	1 TF TDD (00 FD) 4 DD 0 1 11	Z	100.00	157.05	48.49		80.0	
AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	х	100.00	170.17	54.19	3.23	80.0	± 9.6 %
		Y	100.00	164.08	51.36		80.0	
10465-	LITE TOD (OC EDWA 4 DD 21111 42	Z	100.00	173.16	56.41		80.0	
AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	154.44	46.62	3.23	80.0	± 9.6 %
		Y	100.00	148.65	43.98		80.0	
10466-	LITE TOD (CO FOLIA 4 DD CAMIL OF	Z	100.00	159.23	49.60		80.0	
AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	151.03	44.93	3.23	80.0	± 9.6 %
		Y	100.00	145.25	42.30		80.0	
10467-	LTE TOD (OG FOLIA A GO FAMIL	Ż	100.00	156.28	48.12		_ 80.0	
10467- AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	100.00	170.52	54.35	3.23	80.0	± 9.6 %
		Υ	100.00	164.43	51.53		80.0	
10100		Z	100.00	173.48	56.56		80.0	
10468- AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	×	100.00	154.75	46.76	3.23	80.0	± 9.6 %
		Υ	100.00	148.97	44.13		80.0	
40400	177 200 100 100 100 100 100 100 100 100 100	Z	100.00	159.51	49.73		80.0	
10469- AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	х	100.00	151.20	45.00	3.23	80.0	± 9.6 %
		Υ	100.00	145.42	42.37		80.0	
40470	1 75 705 (10 75)	Z	100.00	156.45	48.19		80.0	
10470- AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	100.00	170.71	54.43	3.23	80.0	± 9.6 %
		Υ	100.00	164.59	51.59		80.0	
10471-	LTF T00 /00 F0111	Z	100.00	173.66	56.63		80.0	
AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	х	100.00	154.79	46.77	3.23	80.0	± 9.6 %
		Y	100.00	148.99	44.13		80.0	
10472-	LITE TOO (OA EDIM + DE +	Z	100.00	159.56	49.75		80.0	
10472- AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	х	100.00	151.27	45.02	3.23	80.0	± 9.6 %
		Y	100.00	145.46	42.39		80.0	
40470	1 TE 700 100 ED 111	Z	100.00	156.53	48.22		80.0	
10473- AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	х	100.00	170.68	54.42	3.23	80.0	± 9.6 %
		Υ	100.00	164.56	51.58		80.0	
40474	LITE TOO IOO BOLL	Z	100.00	173.64	56.62		80.0	
10474- AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	×	100.00	154.85	46.80	3.23	80.0	± 9.6 %
		Ÿ	100.00	149.04	44.15		80.0	
40476	LTE TOO GO SELVE	Z	100.00	159.62	49.77		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	151.30	45.04	3.23	80.0	±9.6 %
		Υ	100.00	145.49	42.40		80.0	
		Z	100.00	156.57	48.24		80.0	

10477- AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	Х	100.00	154.69	46.71	3.23	80.0	± 9.6 %
		Υ	100.00	148.86	44.06		80.0	
		Z	100.00	159.48	49.70		80.0	
10478- AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	х	100.00	151.24	45.01	3.23	80.0	± 9.6 %
		Υ	100.00	145.41	42.36		80.0	
		Z	100.00	156.51	48.21		80.0	
10479- AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	150.16	46.79	3.23	80.0	± 9.6 %
		Y	100.00	147.19	45.33		80.0	
		Z	100.00	153.10	48.79		80.0	
10480- AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	Х	100.00	138.44	41.18	3.23	80.0	± 9.6 %
		Υ	100.00	136.02	40.01		80.0	
		Z	100.00	141.74	43.33		80.0	
10481- AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	Х	100.00	136.73	40.29	3.23	80.0	± 9.6 %
		Υ	100.00	134.35	39.14		80.0	
40.400		Z	100.00	140.23	42.52		80.0	
10482- AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	100.00	146.96	44.59	2.23	80.0	± 9.6 %
		Υ	100.00	_143.32	42.79		80.0	
		Z	100.00	150.55	46.88		80.0	
10483- AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	×	100.00	136.34	40.29	2.23	80.0	± 9.6 %
		Υ	100.00	134.39	39.31		80.0	
		Z	100.00	140.00	42.59		80.0	
10484- AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	x	100.00	135.57	39.98	2.23	80.0	± 9.6 %
		Υ	100.00	133.67	39.03		80.0	
		Z	100.00	139.21	42.26		80.0	
10485- AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	х	100.00	147.59	45.40	2.23	80.0	± 9.6 %
		Y	100.00	144.14	43.68		80.0	
		Ž	100.00	150.47	47.31		80.0	
10486- AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	×	100.00	137.83	41.30	2.23	80.0	±9.6%
		Y	100.00	135.37	40.05		80.0	
		Z	100.00	140.85	43.24	_	80.0	
10487- AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	×	100.00	136.92	40.95	2.23	80.0	±9.6%
	1	Y	100.00	134.56	39.74		80.0	
		Z	100.00	139.91	42.87		80.0	
10488- AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	Х	100.00	143.94	44.47	2.23	80.0	± 9.6 %
		Υ	100.00	141.07	43.01		80.0	
		Z	100.00	146.15	45.98		80.0	
10489- AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	x	16.63	101.71	32.59	2.23	80.0	±9.6%
		Υ	16.09	99.98	31.61		80.0	
		Z	26.73	112.45	36.58	1	80.0	
10490- AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	х	14.08	97.41	31.13	2.23	80.0	± 9.6 %
		Υ	13.69	95.95	30.25		80.0	
		Z	20.83	106.16	34.60		80.0	
10491- AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	х	36.97	118.89	37.69	2.23	80.0	± 9.6 %
		Υ	29.43	112.66	35.43		80.0	
		Z	93.18	139.88	43.90		80.0	
10492- AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	×	9.04	86.25	27.30	2.23	80.0	± 9.6 %
		Y	8.79	85.15	26.58		80.0	

10493-	LTE-TDD (SC-FDMA, 50% RB, 15 MHz,	Х	8.63	84.73	26.69	2.23	80.0	± 9.6 %
AAC	64-QAM, UL Subframe=2,3,4,7,8,9)	ļ						
		Y	8.40 10.75	83.71 89.36	26.01 28.94	<u> </u>	80.0	
10494-	LTE-TDD (SC-FDMA, 50% RB, 20 MHz,	Ιź	100.00	139.08	42.62	2.23	80.0 80.0	±9.6 %
AAC	QPSK, UL Subframe=2,3,4,7,8,9)	Ŷ	90.18	134.73		2.23		19.0 %
		ż	100.00	141.11	40.94 43.99		80.0	
10495-	LTE-TDD (SC-FDMA, 50% RB, 20 MHz,	Ιź	9.80	88.23	28.06	2.23	80.0	+000
AAC	16-QAM, UL Subframe=2,3,4,7,8,9)	Ŷ				2.23		±9.6%
		Z	9.48 12.92	86.97	27.29		80.0	
10496-	LTE-TDD (SC-FDMA, 50% RB, 20 MHz,	Ιź	8.89	94.21	30.74	0.00	80.0	
AAC	64-QAM, UL Subframe=2,3,4,7,8,9)	Ŷ		85.44	27.00	2.23	80.0	±9.6%
			8.65	84.39	26.31		80.0	
10497-	LITE TOD (OC EDMA 1000) DD 4.4	Z	11.24	90.42	29.36		80.0	
AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	146.06	43.66	2.23	80.0	±9.6 %
		Y	100.00	142.19	41.77		80.0	
10400	LITE TOD (CO FDIAL 4000) DE 11	Z	100.00	150.68	46.47		80.0	
10498- AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	×	100.00	133.24	37.80	2.23	80.0	±9.6 %
		Y	100.00	130.04	36.22		80.0	
		Z	100.00	138.55	40.89		80.0	
10499- AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	x	100.00	131.73	37.09	2.23	80.0	±9.6%
		Y	100.00	128.56	35.53		80.0	
		Z	100.00	137.13	40.21		80.0	
10500- AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	145.75	44.88	2.23	80.0	± 9.6 %
		Y.	100.00	142.57	43.28		80.0	
		Z	100.00	148.34	46.62		80.0	
10501- AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2.3,4,7,8,9)	×	100.00	137.73	41.64	2.23	80.0	± 9.6 %
		Υ	100.00	135.40	40.44		80.0	
		Z	100.00	140.35	43.36		80.0	
10502- AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	100.00	136.71	41.21	2.23	80.0	± 9.6 %
		Υ	100.00	134.48	40.06		80.0	
		Z	100.00	139.32	42.92		80.0	
10503- AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	100.00	143.91	44.44	2.23	80.0	± 9.6 %
		Y	100.00	141.02	42.98		80.0	
40004		Z	100.00	146.13	45.97		80.0	
10504- AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	х	16.42	101.41	32.48	2.23	80.0	± 9.6 %
		Y	15.81	99.58	31.46		80.0	
40505	A 777 Francisco de 1810 A	Z	26.33	112.08	36.45		80.0	
10505- AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	х	13.91	97.15	31.03	2.23	80.0	± 9.6 %
		Υ	13.47	95.60	30.12		80.0	
10500	LTE TOP (OC COLUMN	Z	20.53	105.83	34.48		80.0	
10506- AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	х	100.00	139.02	42.59	2.23	80.0	± 9.6 %
		Y	84.37	133.35	40.59		80.0	
10507	LTE TOD (OC FOLK)	Z	100.00	141.05	43.96		80.0	
10507- AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	×	9.74	88.10	28.01	2.23	80.0	± 9.6 %
		Υ	9.41	86.81	27.22		80.0	
		Z	12.83					

10508- AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	×	8.83	85.28	26.92	2.23	80.0	± 9.6 %
		İΥ	8.58	84.19	26.23		80.0	
		Z	11.15	90.24	29.28		80.0	
10509- AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	25.33	107.10	33.69	2.23	80.0	± 9.6 %
		Y	21.45	102.77	32.01		80.0	
		Z	49.47	121.84	38.52		80.0	
10510- AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	x	8.26	81.82	25.43	2.23	80.0	±9.6%
		Y	7.99	80.77	24.78		80.0	
		Z	9.99	85.76	27.42		80.0	
10511- AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	×	7.82	80.16	24.77	2.23	80.0	±9.6%
		Υ	7.60	79.23	24.18		80.0	
		Z	9.26	83.60	26.58		80.0	
10512- AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	95.34	134.45	40.90	2.23	80.0	± 9.6 %
		Y	60.52	123.74	37.72		80.0	
		Z	100.00	137.39	42.45		80.0	
10513- AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)		8.83	84.11	26.39	2.23	80.0	± 9.6 %
		Y	8.50	82.89	25.66		80.0	
		Z	11.06	88.88	28.66		80.0	
10514- AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	8.03	81.58	25.42	2.23	80.0	± 9.6 %
		Υ	7.79	80.58	24.78		80.0	
		Z	9.72	85.56	27.43		80.0	
10515- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	2.74	87.56	32.13	0.00	150.0	± 9.6 %
		Y	4.33	99.49	36.43		150.0	
		Z	3.77	96.11	36.71		150.0	
10516- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	х	100.00	250.55	85.79	0.00	150.0	± 9.6 %
		Υ	100.00	240.21	81.20		150.0	
		Z	100.00	255.68	89.44		150.0	
10517- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	×	61.59	185.49	62.67	0.00	150.0	± 9.6 %
		Y	100.00	194.72	63.60		150.0	
		Z	100.00	205.38	69.31		150.0	
10518- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	×	5.49	70.47	19.75	0.00	150.0	± 9.6 %
		Y	5.58	70.83	19.94		150.0	
105/0	LEFE OOD 44-E-MEST S SUIT (SEEDS)	Z	5.80	71.44	20.60	0.00	150.0	. 0.00
10519- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	×	5.68	70.61	19.77	0.00	150.0	±9.6 %
		Y	5.77	70.94	19.95		150.0	
10853	1555 000 11 1 1155 5 5 1 155 5 15 15 15 15 15 15	Z	6.01	71.56	20.60	0.77	150.0	
10520- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	5.58	70.86	19.88	0.00	150.0	± 9.6 %
			5.67	71.23	20.08		150.0	
				74.00				
10521-	IEEE 802.11a/h WIFI 5 GHz (OFDM, 24	Ž X	5.92 5.53	71.90 70.98	20.77 19.96	0.00	150.0 150.0	±9.6%
10521- AAA	IEEE 802.11a/h WIFI 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	5.92 5.53	70.98	19.96	0.00	150.0	±9.6%
		X	5.92 5.53 5.63	70.98	19.96 20.16	0.00	150.0 150.0	±9.6%
AAA 10522-	Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36	X	5.92 5.53	70.98	19.96	0.00	150.0	±9.6 %
AAA	Mbps, 99pc duty cycle)	X Y Z	5.92 5.53 5.63 5.88	70.98 71.37 72.07	19.96 20.16 20.87		150.0 150.0 150.0	

10523-	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48	X	5.48	71.03	19.96	0.00	150.0	± 9.6 %
AAA	Mbps, 99pc duty cycle)							
		Y	5.58	71.44	20.17		150.0	
10524-	IEEE 000 44 of MEET 5 OUT 10 FOR	Z	5.83	72.12	20.88		150.0	
AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	×	5.52	70.92	19.97	0.00	150.0	± 9.6 %
		Y	5.62	71.31	20.18		150.0	
10525-	IEEE OOD 44 - MIEI 4000 H	Z	5.86	71.95	20.85		150.0	
AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	x	5.53	69.99	19.53	0.00	150.0	± 9.6 %
		Y	5.65	70.46	19.78		150.0	
10526-	IEEE 802.11ac WiFi (20MHz, MCS1,	Z	5.87	71.05	20.42		150.0	
AAA	99pc duty cycle)		5.75	70.45	19.68	0.00	150.0	± 9.6 %
		Υ	5.88	70.91	19.93		150.0	
10527	IFFF 000 44 WIFL (00M) - MOOO	Z	6.12	71.54	20.57		150.0	
10527- AAA	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)		5.70	70.57	19.73	0.00	150.0	± 9.6 %
		Y	5.83	71.06	19.99		150.0	
10520	IEEE 900 ddag WIEL (00) dd - 14000	Z	6.08	71.72	20.66		150.0	
10528- AAA	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	5.71	70.55	19.74	0.00	150.0	±9.6%
		Y	5.83	71.03	19.99		150.0	
10529-	IEEE 902 44 on MIEI (001 III)	Z	6.08	71.68	20.65		150.0	
AAA	IEEE 802.11ac WIFi (20MHz, MCS4, 99pc duty cycle)	х	5.71	70.55	19.74	0.00	150.0	± 9.6 %
		Y	5.83	71.03	19.99		150.0	
10531-	IEEE ADD 44 INITE (DOLUM- 14000	Z	6.08	71.68	20.65		150.0	
AAA	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	х	5.75	70.84	19.85	0.00	150.0	± 9.6 %
		Υ	5.88	71.34	20.11		150.0	
10532-	1555 000 44 - 1005 1001 H	Z	6.14	72.04	20.80		150.0	
AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	5.61	70.83	19.89	0.00	150.0	± 9.6 %
		Υ	5.75	71.37	20.17		150.0	
40500	1555 000 00	Z	6.01	72.08	20.87		150.0	
10533- AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	5.74	70.65	19.76	0.00	150.0	± 9.6 %
		Υ	5.86	71.14	_20.01		150.0	
10534-	1555 000 11 1155	Z	6.11	71.79	20.67		150.0	
10534- AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	6.13	69.88	19.25	0.00	150.0	±9.6 %
		Υ	6.23	70.22	19.44		150.0	
10505	IEEE OOG 44	Z	6.46	70.84	20.05		150.0	
10535- AAA	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	6.22	70.11	19.35	0.00	150.0	± 9.6 %
		Υ	6.33	70.46	19.55		150.0	
10526	IEEE OOD 44 - WEEE 4404 III	Z	6.56	71.06	20.14		150.0	
10536- AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	Х	6.12	70.23	19.43	0.00	150.0	± 9.6 %
		Υ	6.22	70.60	19.63		150.0	
10527	IEEE 000 44 - WEEL 440 W. ACCO	Z	6.47	71.26	20.27		150.0	
10537- AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	Х	6.15	70.08	19.34	0.00	150.0	± 9.6 %
		Υ	6.26	70.44	19.54		150.0	
10538-	IEEE 900 44 MIEE 1101	Z	6.50	71.09	20.16		150.0	
10538- AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	×	6.22	69.96	19.29	0.00	150.0	± 9.6 %
		Υ	6.32	70.29	19.47		150.0	
10540-	IEEE DOG 44 LANE	Z	6.56	70.93	20.09		150.0	
10540- AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	×	6.17	70.08	19.38	0.00	150.0	± 9.6 %
		Υ	6.27	70.43	19.58		150.0	
		z	6.50	71.04	20.18		150.0	

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10541- AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	×	6.11	69.86	19.27	0.00	150.0	± 9.6 %
		Y	6.21	70.20	19.46		150.0	
		Z	6.44	70.82	20.07		150.0	
10542- AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	х	6.24	69.76	19.20	0.00	150.0	± 9.6 %
		Y	6.34	70.08	19.38		150.0	
		Z	6.57	70.68	19.97		150.0	
10543- AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	×	6.32	69.73	19.18	0.00	150.0	± 9.6 %
		Y	6.41	70.04	19.36		150.0	
		Z	6.64	70.60	19.92		150.0	
10544- AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	6.39	69.67	19.02	0.00	150.0	± 9.6 %
		Y	6.48	69.94	19.17		150.0	
		Z	6.71	70.57	19.77		150.0	
10545- AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	6.67	70.26	19.24	0.00	150.0	± 9.6 %
		Ý	6.77	70.56	19.40		150.0	
		Z	7.00	71.19	20.00		150.0	
10546- AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	6.51	70.03	19.16	0.00	150.0	± 9.6 %
		Y	6.60	70.31	19.31		150.0	
		Z	6.85	70.99	19.94		150.0	
10547- AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	6.58	70.04	19.14	0.00	150.0	± 9.6 %
		Y	6.67	70.31	19.29		150.0	
		Z	6.94	71.02	19.93		150.0	
10548- AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	×	7.14	71.81	19.97	0.00	150.0	± 9.6 %
		Y	7.29	72.19	20.15		150.0	
		Z	7.59	73.01	20.85		150.0	
10550- AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	×	6.53	70.00	19.15	0.00	150.0	± 9.6 %
		Y	6.62	70.29	19.31		150.0	
		Z	6.86	70.91	19.90		150.0	
10551- AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	×	6.54	70.05	19.14	0.00	150.0	± 9.6 %
		Y	6.63	70.32	19.29		150.0	
		Ż	6.88	71.00	19.91		150.0	
10552- AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	x	6.42	69.80	19.03	0.00	150.0	± 9.6 %
		Y	6.51	70.06	19.18		150.0	
		Ż	6.75	70.72	19.80		150.0	
10553- AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	6.49	69.73	19.01	0.00	150.0	± 9.6 %
		Y	6.57	69.98	19.15		150.0	
		Ż	6.82	70.63	19.76		150.0	
10554- AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	x	6.80	69.87	18.96	0.00	150.0	± 9.6 %
		Y	6.88	70.09	19.09		150.0	
		Ż	7.12	70.74	19.69		150.0	
10555- AAB	IEEE 802.11ac WiFi (160MHz, MC\$1, 99pc duty cycle)	X	6.99	70.30	19.14	0.00	150.0	± 9.6 %
		Y	7.07	70.53	19.27		150.0	
		Z	7.32	71.19	19.87		150.0	
10556- AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	Х	7.01	70.34	19.15	0.00	150.0	±9.6 %
		Y	7.09	70.56	19.27		150.0	
		Z	7.34	71.22	19.88	L	150.0	
10557- AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	6.96	70.20	19.10	0.00	150.0	± 9.6 %
	1	Y	7.04	70.42	19.22		150.0	

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10558- AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	×	7.03	70.43	19.22	0.00	150.0	± 9.6 %
		Υ	7.11	70.65	19.35		150.0	
		Z	7.38	71.35	19.97		150.0	
10560- AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	×	6.97	70.11	19.10	0.00	150.0	± 9.6 %
		Υ	7.05	70.32	19.22		150.0	
		Z	7.30	70.98	19.81		150.0	
10561- AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	×	6.91	70.15	19.16	0.00	150.0	± 9.6 %
		Υ	6.99	70.37	19.29		150.0	
		Z	7.23	71.02	19.89		150.0	
10562- AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	7.11	70.74	19.45	0.00	150.0	±9.6 %
		I Y	7.20	70.97	19.57		150.0	
		Z	7.47	71.71	20.22		150.0	
10563- AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	×	7.52	71.42	19.70	0.00	150.0	± 9.6 %
		Y	7.61	71.64	19.82		150.0	
		Z	7.98	72.60	20.56		150.0	
10564- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 9 Mbps, 99pc duty cycle)	X	5.73	70.00	19.54	0.46	150.0	± 9.6 %
		Y	5.79	70.20	19.62		150.0	
		Z	6.02	70.82	20.29		150.0	
10565- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 12 Mbps, 99pc duty cycle)	X	5.99	70.44	19.80	0.46	150.0	± 9.6 %
		Y	6.06	70.70	19.94		150.0	
		Z	6.29	71.26	20.55		150.0	
10566- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 18 Mbps, 99pc duty cycle)	×	5.85	70.47	19.76	0.46	150.0	± 9.6 %
		Y	5.91	70.70	19.87		150.0	
		Z	6.16	71.36	20.55		150.0	
10567- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 24 Mbps, 99pc duty cycle)	×	5.92	71.04	20.21	0.46	150.0	± 9.6 %
		Y	6.02	71.47	20.45		150.0	
		Z	6.24	71.98	21.03		150.0	
10568- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 36 Mbps, 99pc duty cycle)	×	5.75	70.23	19.54	0.46	150.0	± 9.6 %
		Y	5.79	70.33	19.55		150.0	
		Z	6.05	71.07	20.30		150.0	
10569- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 48 Mbps, 99pc duty cycle)	×	5.89	71.25	20.36	0.46	150.0	± 9.6 %
		Y	6.01	71.74	20.62		150.0	
		Z	6.22	72.21	21.18		150.0	
10570- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 54 Mbps, 99pc duty cycle)	×	5.89	70.90	20.16	0.46	150.0	± 9.6 %
		Y	5.99	71.28	20.37		150.0	
		Z	6.20	71.78	20.95		150.0	
10571- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	3.02	86.99	31.58	0.46	130.0	± 9.6 %
		Υ	3.94	93.49	33.73		130.0	
		Z	3.96	94.04	35.47		130.0	
10572- AAA	IEEE 802.11b WIFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	3.40	90.80	33.28	0.46	130.0	± 9.6 %
		Y	4.74	98.93	35.89		130.0	
		Z	4.62	99.06	37.56		130.0	
10573-	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	х	100.00	227.39	76.80	0.46	130.0	± 9.6 %
AAA	mops, sope duty cycley	_					4000	
AAA	mops, sope daty cycle)	Y	100.00	218.85	72.90	ı	130.0	ı
		Z	100.00	218.85 232.98	72.90 80.45	 	130.0	
10574- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)					0.46	130.0 130.0 130.0	±9.6 %
10574-	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11	Z	100.00	232.98	80.45	0.46	130.0	±9.6 %

10575- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps, 90pc duty cycle)	X	5.50	69.85	19.68	0.46	130.0	± 9.6 %
		Y	5.55	70.02	19.73		130.0	
		Z	5.78	70.67	20.44		130.0	
10576- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 9 Mbps, 90pc duty cycle)	×	5.55	70.12	19.80	0.46	130.0	± 9.6 %
		Y	5.61	70.35	19.89		130.0	
		Z	5.84	70.98	20.59		130.0	
10577- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 12 Mbps, 90pc duty cycle)	×	5.77	70.35	19.89	0.46	130.0	± 9.6 %
		Y	5.83	70.58	19.98		130.0	
40570	LEEF AND ALL MARKS A DIVINION	Z	6.07	71.19	20.65		130.0	
10578- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 18 Mbps, 90pc duty cycle)	×	5.72	70.79	20.18	0.46	130.0	± 9.6 %
		Y	5.80	71.12	20.33		130.0	
44494		Z	6.03	71.72	20.99		130.0	
10579- AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS- OFDM, 24 Mbps, 90pc duty cycle)	×	5.45	70.06	19.52	0.46	130.0	± 9.6 %
		Y	5.48	70.08	19.46		130.0	
1000		Z	5.77	70.99	20.35		130.0	
10580- AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS- OFDM, 36 Mbps, 90pc duty cycle)	X	5.49	70.02	19.49	0.46	130.0	± 9.6 %
		Υ	5.51	70.00	19.41		130.0	
		Z	5.80	70.89	20.28		130.0	
10581- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 48 Mbps, 90pc duty cycle)	X	5.66	71.10	20.30	0.46	130.0	± 9.6 %
		Υ	5.74	71.42	20.43		130.0	
		Z	5.99	72.11	21.16		130.0	
10582- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 54 Mbps, 90pc duty cycle)	X	5.38	69.73	19.27	0.46	130.0	± 9.6 %
		Y	5.38	69.65	19.14		130.0	
		Z	5.68	70.62	20.07		130.0	
10583- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	×	5.50	69.85	19.68	0.46	130.0	± 9.6 %
		Y	5.55	70.02	19.73		130.0	
		Z	5.78	70.67	20.44		130.0	
10584- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	×	5.55	70.12	19.80	0.46	130.0	± 9.6 %
		Y	5.61	70.35	19.89		130.0	
		Z	5.84	70.98	20.59		130.0	
10585- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	5.77	70.35	19.89	0.46	130.0	±9.6 %
		Y	5.83	70.58	19.98		130.0	
		Z	6.07	71.19	20.65		130.0	
10586- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	5.72	70.79	20.18	0.46	130.0	±9.6%
		Y	5.80	71.12	20.33		130.0	
		Z	6.03	71.72	20.99		130.0	
10587- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	5.45	70.06	19.52	0.46	130.0	± 9.6 %
		Y	5.48	70.08	19.46		130.0	
		Z	5.77	70.99	20.35		130.0	
10588- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	5.49	70.02	19.49	0.46	130.0	± 9.6 %
		Y	5.51	70.00	19.41		130.0	
		Z	5.80	70.89	20.28		130.0	
10589- AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	5.66	71.10	20.30	0.46	130.0	± 9.6 %
		Υ	5.74	71,42	20.43		130.0	
		Z	5.99	72.11	21.16		130.0	
10590- AAA	IEEE 802.11a/h WiFl 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	×	5.38	69.73	19.27	0.46	130.0	±9.6 %
		1 14		20.00				
		Y	5.38	69.65	19.14		130.0	

10591- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	×	5.62	69.71	19.63	0.46	130.0	± 9.6 %
		Y	5.68	69.91	19.70		130.0	
		Z	5.90	70.49	20.36		130.0	<u> </u>
10592- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	5.81	70.12	19.77	0.46	130.0	± 9.6 %
		Y	5.87	70.31	19.84		130.0	
		_ Z	_ 6.11	70.91	20.50		130.0	
10593- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	×	5.75	70.12	19.72	0.46	130.0	± 9.6 %
		Y	5.80	70.28	19.77		130.0	
		Z	6.05	70.95	20.47		130.0	
10594- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	5.81	70.29	19.87	0.46	130.0	± 9.6 %
		Y	5.87	70.50	19.95		130.0	
		Z	6.11	71.11	20.62		130.0	
10595- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	5.79	70.30	19.81	0.46	130.0	± 9.6 %
		Y	5.84	70.49	19.87		130.0	
		Z	6.09	71.15	20.57		130.0	
10596- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	5.74	70.38	19.87	0.46	130.0	± 9.6 %
		Y	5.79	70.55	19.91		130.0	
		Z	6.04	71.24	20.64		130.0	
10597- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	5.69	70.34	19.79	0.46	130.0	± 9.6 %
		Y	5.74	70.49	19.82		130.0	
		Z	6.00	71.22	20.58		130.0	
10598- AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	х	5.70	70.71	20.14	0.46	130.0	± 9.6 %
		Y	5.77	71.00	20.26		130.0	
		Z	6.02	71.65	20.96		130.0	
10599- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	6.29	69.92	19.51	0.46	130.0	± 9.6 %
		Y	6.34	70.06	19.56		130.0	
		Z	6.57	70.65	20.18		130.0	
10600- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	×	6.55	70.72	19.87	0.46	130.0	± 9.6 %
		Y	6.61	70.88	19,91		130.0	
		Z	6.87	71.57	20.59		130.0	
10601- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	6.37	70.29	19.69	0.46	130.0	± 9.6 %
		Y	6.43	70.44	19.73		130.0	
		Z	6.67	71.07	20.38		130.0	
10602- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	х	6.46	70.23	19.56	0.46	130.0	± 9.6 %
		Y	6.50	70.33	19.56		130.0	
40000		Z	6.73	70.94	20.21		130.0	
10603- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	6.54	70.54	19.83	0.46	130.0	± 9.6 %
		Y	6.60	70.70	19.89		130.0	
1005		Z	6.83	71.28	20.50		130.0	
10604- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	×	6.28	69.83	19.48	0.46	130.0	± 9.6 %
		Y	6.33	69.96	19.53		130.0	
10000	1555 000 44 - M.S.	Z	6.56	70.56	20.15		130.0	
10605- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	×	6.46	70.37	19.75	0.46	130.0	± 9.6 %
		Y	6.51	70.49	19.76		130.0	
40000	1555	Z	6.73	71.07	20.39		130.0	
10606- AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	×	6.16	69.63	19.27	0.46	130.0	± 9.6 %
~~		Ý	6.19	69.65	40.00			
		Z	6.43	09.00	19.23		130.0	

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10607- AAA	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	5.58	69.53	19.53	0.46	130.0	± 9.6 %
		Υ	5.66	69.84	19.67		130.0	
40000		Z	5.89	70.45	20.34		130.0	
10608- AAA	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	×	5.82	70.03	19.71	0.46	130.0	± 9.6 %
		Υ	5.90	70.33	19.84		130.0	
		Z	6.15	70.97	20.52		130.0	
10609- AAA	IEEE 802.11ac WiFI (20MHz, MCS2, 90pc duty cycle)	X	5.72	70.00	19.64	0.46	130.0	± 9.6 %
		Y	5.79	70.26	19.74		130.0	
400.0		Z	6.06	70.98	20.48		130.0	
10610- AAA	IEEE 802.11ac WiFl (20MHz, MCS3, 90pc duty cycle)	X	5.77	70.16	19.79	0.46	130.0	± 9.6 %
		Y	5.86	70.48	19.93		130.0	
40044	1997 000 11 1197 1207	Z	6.11	71.14	20.62		130.0	
10611- AAA	IEEE 802.11ac WiFI (20MHz, MCS4, 90pc duty cycle)	×	5.68	69.98	19.66	0.46	130.0	± 9.6 %
		Y	5.76	70.26	19.77		130.0	
40040	NEEE 000 44 - WEEL (000 H)	Z	6.02	70.97	20.50		130.0	
10612- AAA	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	5.73	70.29	19.79	0.46	130.0	± 9.6 %
		Y	5.81	70.54	19.88		130.0	
40040		Z	6.08	71.30	20.64		130.0	
10613- AAA	IEEE 802.11ac WiFI (20MHz, MCS6, 90pc duty cycle)	X	5.73	70.11	19.64	0.46	130.0	± 9.6 %
		Y	5.79	70.32	19.70		130.0	
40044	1555.000.44	Z	6.07	71.13	20.49		130.0	
10614- AAA	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	х	5.69	70.47	19.98	0.46	130.0	± 9.6 %
		Y	5.79	70.86	20.15		130.0	
		Z	6.05	71.55	20.87		130.0	
10615- AAA	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	×	5.67	69.75	19.41	0.46	130.0	± 9.6 %
		Y	5.72	69.89	19.43		130.0	
40040	1555 000 11 1155 1101 11	Z	6.01	70.70	20.23		130.0	
10616- AAA	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	6.21	69.57	19.34	0.46	130.0	± 9.6 %
		Y	6.27	69.79	19.44		130.0	
10017	1555 444 445 445 445 445	Z	6.51	70.42	20.08		130.0	
10617- AAA	IEEE 802.11ac WiFI (40MHz, MCS1, 90pc duty cycle)	х	6.31	69.83	19.43	0.46	130.0	± 9.6 %
		Y	6.38	70.05	19.52		130.0	
40040	IFFE 000 44 WIE 440-11- 446-2	Z	6.60	70.62	20.14	0.10	130.0	
10618- AAA	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	×	6.21	69.98	19.56	0.46	130.0	± 9.6 %
		Y	6.29	70.23	19.67		130.0	
10040	IEEE 000 440 - INICI (100 III - 110 CC	Z	6.53	70.88	20.32	0.10	130.0	
10619- AAA	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	Х	6.21	69.69	19.34	0.46	130.0	± 9.6 %
		Y	6.27	69.87	19.40		130.0	
40000	IEEE 000 44 INIE: (401 III - 1455)	Z	6.52	70.54	20.07	0.10	130.0	1000
10620- AAA	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	6.28	69.60	19.31	0.46	130.0	± 9.6 %
		Y	6.34	69.77	19.38		130.0	
10621-	LEEE 900 4400 MIEL (40MHz 14005	Z	6.60	70.46	20.05	0.40	130.0	1000
10621- AAA	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	6.26	69.70	19.49	0.46	130.0	± 9.6 %
		Y	6.35	69.99	19.63		130.0	
10000	LIEFE CON ALCO WIEL (ADMILL MOOR	Z	6.57	70.54	20.21	0.40	130.0	1000
10622- AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	6.33	70.04	19.65	0.46	130.0	± 9.6 %
		Y	6.42	70.34	19.79		130.0	
		Z	6.63	70.87	20.38	L	130.0	

10623-	IEEE 802.11ac WiFi (40MHz, MCS7,	X	6.14	69.39	19.21	0.46	130.0	± 9.6 %
AAA	90pc duty cycle)	1						
		Y	6.20	69.55	19.27		130.0	
10001	LEGE DOD AT THE COURT ALONG	Z	6.44	70.21	19.94		130.0	
10624- AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	6.33	69.49	19.29	0.46	130.0	±9.6%
		Υ	6.40	69.68	19.37		130.0	
		Z.	6.63	70.29	19.99		130.0	
10625- AAA	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	6.89	70.95	20.02	0.46	130.0	±9.6%
		Y	6.98	71.20	20.12		130.0	
		Z	7.25	71.89	20.77		130.0	
10626- AAA	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	6.46	69.34	19.09	0.46	130.0	± 9.6 %
		Y	6.51	69.50	19.15		130.0	
		Z	6.74	70.13	19.78		130.0	
10627- AAA	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	6.80	70.16	19.43	0.46	130.0	± 9.6 %
		Y	6.88	70.36	19.51		130.0	
		Z	7.11	70.98	20.13		130.0	
10628- AAA	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	х	6.54	69.58	19.10	0.46	130.0	± 9.6 %
		Y	6.59	69.68	19.13		130.0	
		Z	6.84	70.41	19.81		130.0	
10629- AAA	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	×	6.63	69.66	19.12	0.46	130.0	±9.6 %
		Y	6.68	69.76	19.14		130.0	
		Z	6.92	70.40	19.78		130.0	_
10630- AAA	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	x	7.51	72.33	20.41	0.46	130.0	± 9.6 %
		Y	7.62	72.56	20.47		130.0	
		Ż	7.96	73.47	21,25		130.0	
10631- AAA	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	7.16	71.48	20.20	0.46	130.0	± 9.6 %
		Y	7.28	71.83	20.36	_	130.0	
		Ż	7.56	72.54	21.01		130.0	
10632- AAA	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	6.75	70.19	19.59	0.46	130.0	± 9.6 %
		Y	6.85	70.50	19.75		130.0	
		Z	7.06	71.01	20.29		130.0	
10633- AAA	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	x	6.60	69.71	19.19	0.46	130.0	± 9.6 %
		Y	6.65	69.86	19.25		130.0	
		Z	6.92	70.59	19.92		130.0	
10634- AAA	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	6.58	69.75	19.27	0.46	130.0	± 9.6 %
		Υ	6.65	69.94	19.36		130.0	
		Z	6.90	70.60	19.99		130.0	
10635- AAA	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	6.41	68.90	18.58	0.46	130.0	± 9.6 %
		Y	6.42	68.84	18.49		130.0	
		Z	6.71	69.69	19.26		130.0	
10636- AAB	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	×	6.89	69.61	19.05	0.46	130.0	± 9.6 %
		Y	6.94	69.73	19.10		130.0	
		Z	7.18	70.37	19.72		130.0	
10637- AAB	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	7.11	70.14	19.29	0.46	130.0	± 9.6 %
		Y	7.17	70.28	19.34		130.0	
		Z	7.41	70.93	19.96		130.0	
10638- AAB	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	Х	7.11	70.11	19.25	0.46	130.0	± 9.6 %
AAB								
		Y	7.17	70.24	19.30	ı	130.0	

10639-	THEE OOD ALL WITH LEGAL III.	T						Dei 25, 20 I
AAB	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	×	7.06	69.99	19.24	0.46	130.0	± 9.6 %
		Y	7.11	70.12	19.28		130.0	
10640-	IFFE 000 44 - INFE (400) III	Z	7.37	70.79	19.92		130.0	
AAB	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	×	7.09	70.06	19.22	0.46	130.0	± 9.6 %
		Υ	7.13	70.13	19.22		130.0	
10011		Z	7.41	70.90	19.91		130.0	
10641- AAB	IEEE 802.11ac WIFi (160MHz, MCS5, 90pc duty cycle)	×	7.08	69.78	19.08	0.46	130.0	±9.6 %
		Y	7.12	69.84	19.08		130.0	
		Z	7.36	70.49	19.71		130.0	
10642- AAB	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	×	7.13	70.08	19.40	0.46	130.0	±9.6%
		Y	7.20	70.27	19.49		130.0	
		l z	7.44	70.86	20.06		130.0	
10643- AAB	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.97	69.80	19.17	0.46	130.0	± 9.6 %
		Y	7.01	69.89	19.19		130.0	
		Z	7.26	70.57	19.84		130.0	
10644- AAB	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	Х	7.22	70.56	19.56	0.46	130.0	± 9.6 %
		ΙY	7.27	70.64	19.57		130.0	
		Z	7.57	71.46	20.29		130.0	
10645- AAB	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	7.87	71.89	20.13	0.46	130.0	± 9.6 %
		Y	7.95	72.00	20.15		130.0	·
	,	Z	8.27	72.83	20.86	_	130.0	
10646- AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	×	100.00	163.00	56.56	9.30	60.0	±9.6%
		Y	37.21	129.52	45.95		60.0	
		Z	100.00	162.70	56.99		60.0	
10647- AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	×	100.00	164.52	57.26	9.30	60.0	± 9.6 %
		Y	32.59	127.04	45.45		60.0	
		Z	100.00	164.20	57.68		60.0	
10648- AAA	CDMA2000 (1x Advanced)	X	100.00	185.52	58.23	0.00	150.0	± 9.6 %
		Y	100.00	181.47	56.38		150.0	
		Z	100.00	193.94	62.97		150.0	
10652- AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	6.86	79.93	24.78	2.23	80.0	± 9.6 %
		Υ	7.03	80.14	24.66		80.0	
		Z	8.09	83.31	26.67		80.0	
10653- AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	5.97	73.58	22.16	2.23	80.0	±9.6%
		Y	5.98	73.46	21.97		80.0	
		Z	6.62	75.51	23.43		80.0	
10654- AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	×	5.71	72.44	21.78	2.23	80.0	± 9.6 %
		Y	5.73	72.34	21.60		80.0	
		Z	6.28	74.21	22.98		80.0	
10655- AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	×	5.73	72.20	21.68	2.23	80.0	± 9.6 %
		Y	5.73	72.06	21.48		80.0	
		Z	6.29	73.95	22.87		80.0	

⁶ Uncertainty is determined using the max, deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DIPOLE CALIBRATION CERTIFICATES

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





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

Accreditation No.: SCS 0108

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

Client BACL

Certificate No: D450V3-1096_Nov16

CALIBRATION CERTIFICATE

Object D450V3 - SN: 1096

Calibration procedure(s) QA CAL-15.v8

Calibration procedure for dipole validation kits below 700 MHz

Calibration date: November 07, 2016

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: 5277 (20x)	05-Apr-16 (No. 217-02293)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe ET3DV6	SN: 1507	31-Dec-15 (No. ET3-1507_Dec15)	Dec-16
DAE4	SN: 654	12-Aug-16 (No. DAE4-654_Aug16)	Aug-17
Secondary Standards	(D#	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (No. 217-02285/02284)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (No. 217-02285)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (No. 217-02284	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:	Jeton Kastrati	Laboratory Technician	-10
Approved by:	Makin Dalamia	+ 1 - 11	2011
Approved by:	Katja Pokovic	Technical Manager	XXXX.

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

Issued: November 8, 2016

Certificate No: D450V3-1096_Nov16

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





Schweizerischer Kalibrierdienst Service aulsse d'étalonnage Servizio svizzero di taratura Swiss Calibration Service

Accreditation No.: SCS 0108

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

Glossary:

TSL

tissue simulating liquid

ConvF N/A

sensitivity in TSL / NORM x,y,z 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

 EC 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	ELI4 Flat Phantom	Shell thickness: 2 ± 0.2 mm
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	450 MHz ± 1 MHz	

Head TSL parameters

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	43.5	0.87 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	43.9 ± 6 %	0.87 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	1.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	4.53 W/kg ± 18.1 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	0.759 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	3.04 W/kg ± 17.6 % (k=2)

Body TSL parameters
The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	56.7	0.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	58.0 ± 6 %	0.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	4.55 W/kg ± 18.1 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	0.766 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	3.03 W/kg ± 17.6 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	57.7 Ω - 5.6 jΩ	
Return Loss	- 21.1 dB	

Antenna Parameters with Body TSL

Impedance, transformed to feed point	54.2 Ω - 9.5 jΩ
Return Loss	- 20.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.346 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	September 15, 2015

DASY5 Validation Report for Head TSL

Date: 07.11,2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz; Type: D450V3; Serial: D450V3 - SN: 1096

Communication System: UID 0 - CW; Frequency: 450 MHz

Medium parameters used: f = 450 MHz; $\sigma = 0.87$ S/m; $\varepsilon_r = 43.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

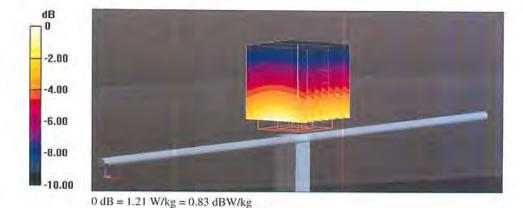
- Probe: ET3DV6 SN1507; ConvF(6.58, 6.58, 6.58); Calibrated: 31.12.2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 12.08.2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1003
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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

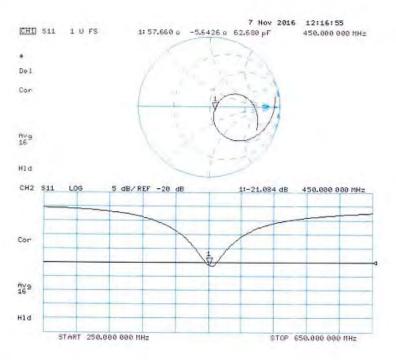
Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 39.51 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 1.61 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.759 W/kg

Maximum value of SAR (measured) = 1.21 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 07.11.2016

Test Laboratory; SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz D450V3; Type: D450V3; Serial: D450V3 - SN:1096

Communication System: UID 0 - CW; Frequency: 450 MHz

Medium parameters used: f = 450 MHz; $\sigma = 0.96 \text{ S/m}$; $\varepsilon_r = 58$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ET3DV6 SN1507; ConvF(6.99, 6.99, 6.99); Calibrated: 31.12.2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 12.08.2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1003
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 36.76 V/m; Power Drift = -0.00 dB Peak SAR (extrapolated) = 1.80 W/kg SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.766 W/kg

Maximum value of SAR (measured) = 1,23 W/kg

-2.00 -4.00 -6.00 -8.00

0 dB = 1.23 W/kg = 0.90 dBW/kg

Impedance Measurement Plot for Body TSL

