PCTEST ENGINEERING LABORATORY, INC. 7185 Oakland Mills Road, Columbia, MD

7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. +1.410.290.6652 / Fax +1.410.290.6654 http://www.pctest.com



Certification of Calibration

Object

D2450V2 - SN: 797

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

Extended Calibration date: September 11, 2018

Description:

SAR Validation Dipole at 2450 MHz.

Calibration Equipment used:

			n Kananananan		120000222000	
Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Blennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	8iennial	5/2/2019	170330156
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight	7720	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Callbration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
Agilent	8753ES	S-Parameter Vector Network Analyzer	8/30/2018	Annuai	8/30/2019	MY40003841
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/15/2018	Annual	5/15/2019	1070
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7410
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2018	Annual	7/11/2019	1322
SPEAG	ES3DV3	SAR Probe	3/13/2018	Annual	3/13/2019	3319
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/7/2018	Annual	3/7/2019	1368
Anritsu	MA2411B	Puise Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Puise Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/22/2017	Annuəl	10/22/2018	1328004
Agllent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	Свт	N/A
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path.

Measurement Uncertainty = $\pm 23\%$ (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	3XDK

Object:	Date Issued:	Page 1 of 4
D2450V2 - SN: 797	09/11/2018	rage rur4

DIPOLE CALIBRATION EXTENSION

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

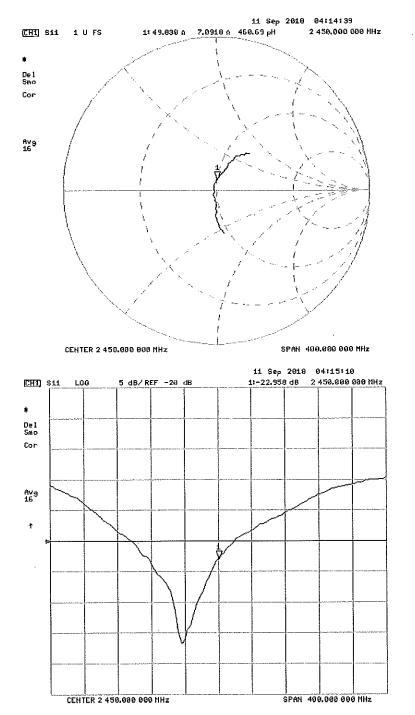
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

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

Calibration Date	Extension Date		Certificate SAR Target Head (1g) W/kg @ 20.0 dBm			Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Head SAR		Certificate Impedance Head (Ohm) Real		Difference (Ohm) Real		Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/11/2018	1.152	5.27	5.52	4.74%	2.48	2.54	2.42%	53.8	49.8	4	7.4	7.1	0.3	-21.9	-23	-4.80%	PASS

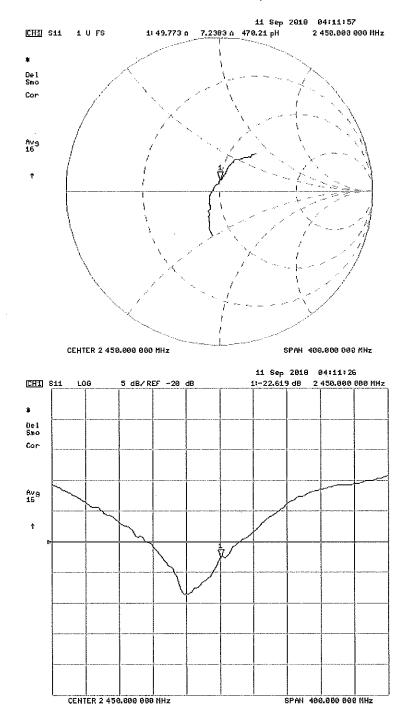
Calibration Date	Extension Date		Certificate SAR Target Body (1g) W/kg @ 20.0 dBm			Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	(10a) W/ka @	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real		Certificate Impedance Body (Ohm) Imaginary		Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/11/2018	1.152	5.11	5.17	1.17%	2.42	2.37	-2.07%	49.7	49.8	0.1	9.1	7.2	1.9	-20.9	-22.6	-8.20%	PASS

Object:	Date Issued:	Dogo 2 of 4
D2450V2 – SN: 797	09/11/2018	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Page 3 of 4
D2450V2 SN: 797	09/11/2018	



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
D2450V2 – SN: 797	09/11/2018	



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Certification of Calibration

Object

D2450V2 - SN: 797

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

September 9, 2019

Extended Calibration date:

Description:

SAR Validation Dipole at 2450 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	10/2/2018	Annual	10/2/2019	US39170118
Agilent	N5182A	MXG Vector Signal Generator	6/27/2019	Annual	6/27/2020	US46240505
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343972
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1207470
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339007
Control Company	4040	Temperature / Humidity Monitor	2/28/2018	Biennial	2/28/2020	150761911
Control Company	4352	Ultra Long Stem Thermometer	2/28/2018	Biennial	2/28/2020	170330160
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path.

Measurement Uncertainty = $\pm 23\%$ (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	XOK

Object:	Date Issued:	Dogo 1 of 4
D2450V2 – SN: 797	09/9/2019	Page 1 of 4

DIPOLE CALIBRATION EXTENSION

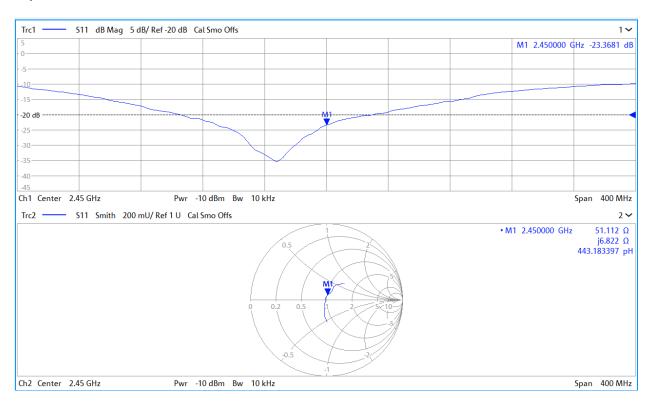
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

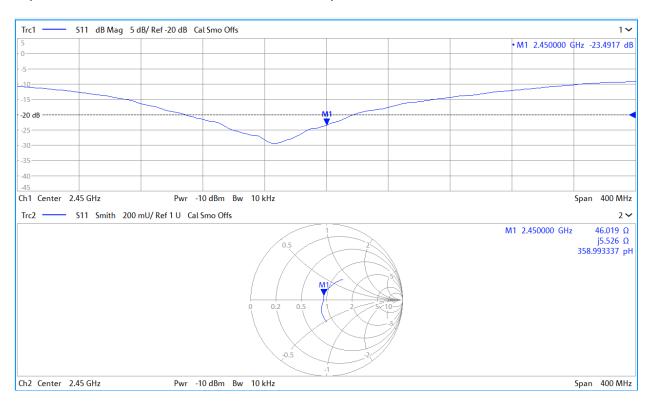
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(96)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/9/2019	1.152	5.27	5.19	-1.52%	2.48	2.41	-2.82%	53.8	51.1	2.7	7.4	6.8	0.6	-21.9	-23.4	-6.70%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/9/2019	1.152	5.11	5.17	1.17%	2.42	2.38	-1.65%	49.7	46	3.7	9.1	5.5	3.6	-20.9	-23.5	-12.40%	PASS

Object:	Date Issued:	Dogo 2 of 4
D2450V2 – SN: 797	09/9/2019	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Dogo 2 of 4
D2450V2 – SN: 797	09/9/2019	Page 3 of 4



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Dege 4 of 4
D2450V2 – SN: 797	09/9/2019	Page 4 of 4

Calibration Laboratory of

PC Test

Client

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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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

Certificate No: D2450V2-981_Aug18

CALIBRATION CERTIFICATE

Object	D2450V2 - SN:98	31. · · ·	
Calibration procedure(s)	QA CAL-05.v10	·	
	Calibration proce	dure for dipole validation kits ab	ove 700 MHz
		· · · · · · · · · · · · · · · · · · ·	BNV 09-26/2012 BNV 08/10/201
	••••	the second s	09-06/2012
Calibration date:	August 16, 2018	· · · · · · ·	01-01-
			RNV
This calibration certificate docume	nts the traceability to part	onal standards, which realize the physical un	08/10/24
The measurements and the uncert	ainties with contidence p	robobility or given an the falls in	
	andes with competice p	robability are given on the following pages a	nd are part of the certificate.
All calibrations have been conduct	and for the second s	-	
An canonations have been conduct	ed in the closed laborator	y facility: environment temperature (22 \pm 3)°	C and humidity < 70%.
Calibration Equipment used (M&TE	E critical for calibration)		
	1		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
	•		
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-17)	In house check: Oct-18
			In nouse check. Obl-18
	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
	- 		Sel The
	•••••••••••••••••••••••••••••••••••••••	•	TIT
Approved by:	Katja Pokovic	Technical Manager	111
			Coldan 1
	•	· · ·	
			included Automation Constant
			Issued: August 23, 2018

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

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst

S Service suisse d'étalonnage С

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

Glossarv:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5.0 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.7 ± 6 %	1.86 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.3 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.20 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.4 W/kg ± 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.8 ± 6 %	2.02 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	13.0 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	50.9 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.2 W/kg ± 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.0 Ω + 2.3 jΩ
Return Loss	- 25.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.2 Ω + 4.7 jΩ
Return Loss	- 26.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.162 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG	
Manufactured on	December 30, 2014	

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions

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

Phantom		
Filantom	SAM Head Phantom	For usage with cSAR3DV2-R/L
		TO USAGE WILL COARSDYZ-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.6 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	54.0 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.2 W/kg ± 16.9 % (k=2)

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.6 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	54.0 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.3 W/kg ± 16.9 % (k=2)

SAR result with SAM Head (Neck)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.9 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.2 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.4 W/kg ± 16.9 % (k=2)

SAR result with SAM Head (Ear)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	8.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	34.7 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	17.5 W/kg ± 16.9 % (k=2)

DASY5 Validation Report for Head TSL

Date: 13.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:981

Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz; σ = 1.86 S/m; ϵ_r = 37.7; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

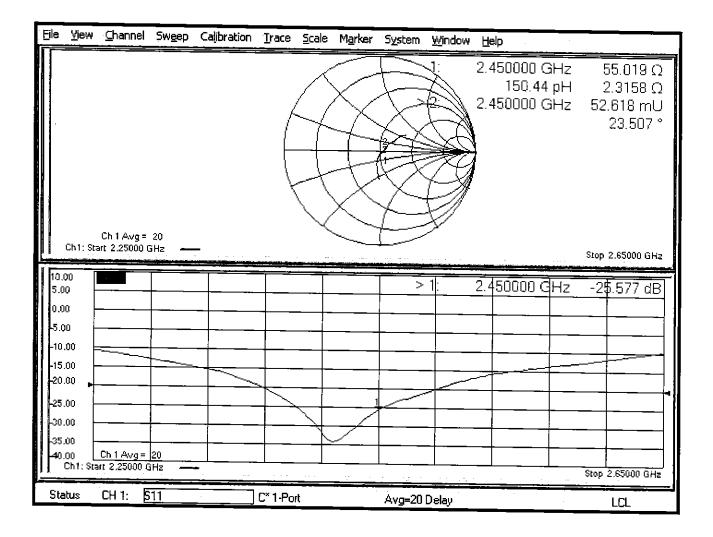
- Probe: EX3DV4 SN7349; ConvF(7.88, 7.88, 7.88) @ 2450 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 116.6 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 26.7 W/kg SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.2 W/kg Maximum value of SAR (measured) = 22.1 W/kg



0 dB = 22.1 W/kg = 13.44 dBW/kg



DASY5 Validation Report for Body TSL

Date: 13.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:981

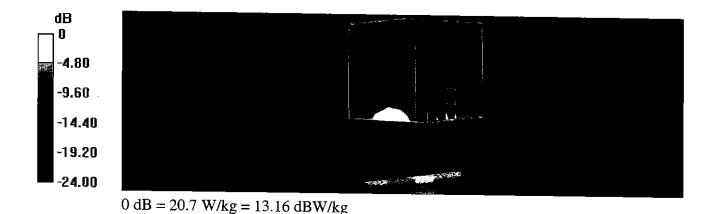
Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ϵ_r = 51.8; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

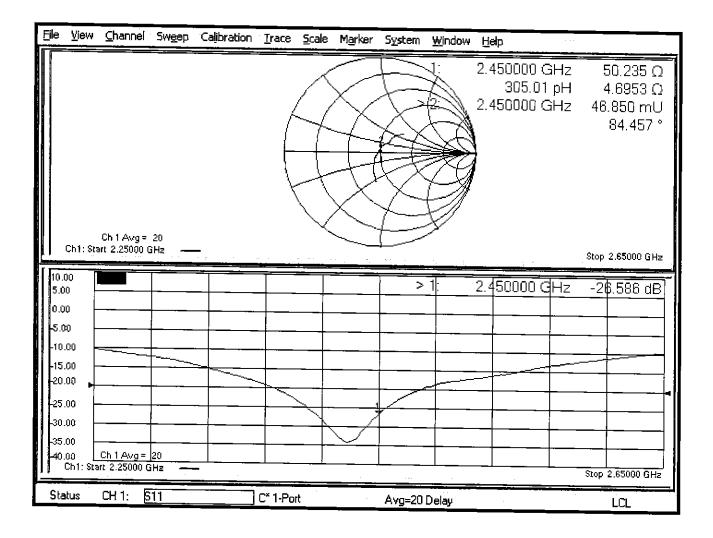
- Probe: EX3DV4 SN7349; ConvF(8.01, 8.01, 8.01) @ 2450 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 107.0 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 25.3 W/kg SAR(1 g) = 13 W/kg; SAR(10 g) = 6.11 W/kg Maximum value of SAR (measured) = 20.7 W/kg



Impedance Measurement Plot for Body TSL



Date: 16.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:981

Communication System: UID 0 - CW ; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz; σ = 1.85 S/m; ϵ_r = 40.2; ρ = 1000 kg/m³ Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

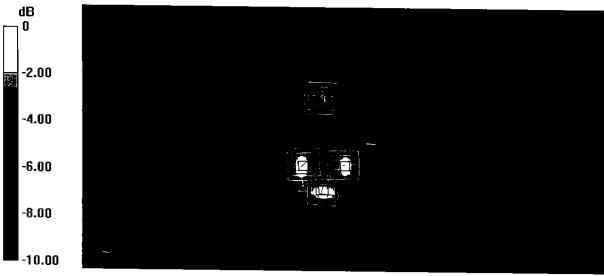
- Probe: EX3DV4 SN7349; ConvF(7.88, 7.88, 7.88) @ 2450 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

SAM Head Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 116.2 V/m; Power Drift = 0.00 dB Peak SAR (extrapolated) = 26.4 W/kg SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.33 W/kg Maximum value of SAR (measured) = 22.0 W/kg

SAM Head Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 116.9 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 26.3 W/kg SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.35 W/kg Maximum value of SAR (measured) = 21.7 W/kg

SAM Head Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 112.0 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 24.1 W/kg SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.11 W/kg Maximum value of SAR (measured) = 20.5 W/kg

SAM Head Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 91.03 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 15.8 W/kg SAR(1 g) = 8.74 W/kg; SAR(10 g) = 4.4 W/kg Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 22.0 W/kg = 13.42 dBW/kg



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Certification of Calibration

Object

D2450V2 - SN: 981

08/09/2019

Calibration procedure(s)

Procedure for Calibration Extension for SAR Dipoles.

Calibration date:

Description:

SAR Validation Dipole at 2450 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	10/2/2018	Annual	10/2/2019	US39170118
Agilent	N5182A	MXG Vector Signal Generator	6/27/2019	Annual	6/27/2020	US46240505
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343972
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1207470
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339007
Control Company	4040	Temperature / Humidity Monitor	2/28/2018	Biennial	2/28/2020	150761911
Control Company	4352	Ultra Long Stem Thermometer	2/28/2018	Biennial	2/28/2020	170330160
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091

Measurement Uncertainty = ±23% (k=2)

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

Object:	Date Issued:	Page 1 of 4
D2450V2 – SN: 981	08/09/2019	Page 1 of 4

DIPOLE CALIBRATION EXTENSION

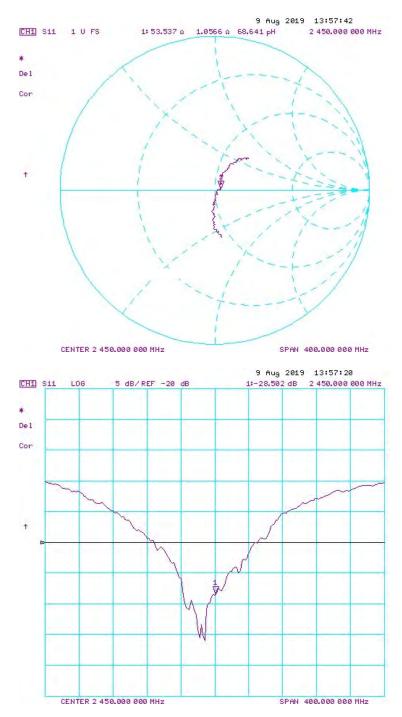
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

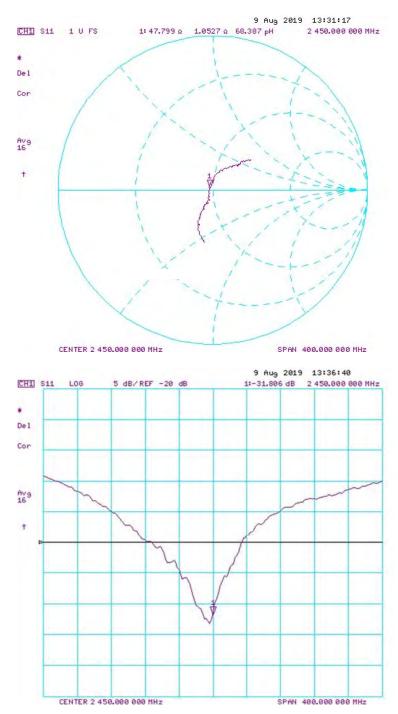
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Head (1g) W/kg @ 20.0 dBm	ubiii	(%)	dBm	(10g) W/kg @ 20.0 dBm		Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Head (dB)	Deviation (%)	
8/16/2018	8/9/2019	1.162	5.23	5.53	5.74%	2.44	2.56	4.92%	55	53.5	1.5	2.3	1.1	1.2	-25.6	-28.5	-11.30%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
8/16/2018	8/9/2019	1.162	5.09	4.98	-2.16%	2.42	2.28	-5.79%	50.2	47.8	2.4	4.7	1.1	3.6	-26.6	-31.8	-19.60%	PASS

Object:	Date Issued:	Page 2 of 4	
D2450V2 – SN: 981	08/09/2019	Fage 2 014	



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Daga 2 of 4
D2450V2 – SN: 981	08/09/2019	Page 3 of 4



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Daga 4 of 4	
D2450V2 – SN: 981	08/09/2019	Page 4 of 4	

Calibration Laborator Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich	-	HOC-MRA	ASS ACCREDITION OF	S C S	Schweizerischer Kalibrierdlenst Service suïsse d'étalonnage Servizio svizzero di taratura Swiss Calibration Service	
Accredited by the Swiss Accredita The Swiss Accreditation Service Multilateral Agreement for the re	is one of the signatorie	es to the EA		Acc	ereditation No.: SCS 0108	
Client PC Test			Certificat	e No:	D2600V2-1004_Apr18	
CALIBRATIONIC						224524 2225
Object	D2600V2-SN:1	004				
Calibration procedure(s)	QA CAL-05.v10 Calibration proce	edure for dipole	validation kits .	abov		
Calibration date:	April 1, 2018				BV	20-2019
This calibration certificate docume The measurements and the uncer All calibrations have been conduct Calibration Equipment used (M&T)	ed in the closed laborato.	robability are given or	the following page	s and	s of measurements (SI). are part of the certificate.	
	- ontioar for calibration)					
Primary Standards	ID#	Cal Date (Certificat	e No.)		Scheduled Calibration	
Power meter NRP	SN: 104778	04-Apr-18 (No. 217	-02672/02673)		Apr-19	
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217			Apr-19	
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217	-02673)		Apr-19	
Reference 20 dB Attenuator	SN: 5058 (20K)	04-Apr-18 (No. 217	-02682)		Apr-19	
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217	-02683)		Apr-19	
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX:	3-7349_Dec17)		Dec-18	
DAE4	SN: 601	26-Oct-17 (No. DA			Oct-18	
Secondary Standards	ID #	A 1 m m m m m m m m m m				
Power meter EPM-442A		Check Date (in hou			Scheduled Check	
Power sensor HP 8481A	SN: GB37480704	07-Oct-15 (in house			In house check: Oct-18	
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house			In house check: Oct-18	
RF generator R&S SMT-06	SN: MY41092317	07-Oct-15 (in house			In house check: Oct-18	P I
-	SN: 100972	15-Jun-15 (in house			In house check: Oct-18	
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house	check Oct-17)		In house check: Oct-18	
Calibrated by:	Name Michael Weber	Functio	n ory Technician		signature Millius	
Approved by:	Katja:Pokovic	Technic	a) Maneger		Jelly	
This calibration certificate shall not	be reproduced except in	full without written app	proval of the laborat	ory.	Issued: April 12, 2018	

Certificate No: D2600V2-1004_Apr18

Ι

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.8 ± 6 %	2.03 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition			
SAR measured	250 mW input power	14.3 W/kg		
SAR for nominal Head TSL parameters	normalized to 1W	55.9 W/kg ± 17.0 % (k=2)		
	F	······································		
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition			
SAR measured	250 mW input power	6.35 W/kg		
SAR for nominal Head TSL parameters	normalized to 1W	25.1 W/kg ± 16.5 % (k=2)		

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity		
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m		
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.1 ± 6 %	2.19 mho/m ± 6 %		
Body TSL temperature change during test	< 0.5 °C		,		

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.8 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	54.8 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.20 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.7 W/kg ± 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

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

Antenna Parameters with Body TSL

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

General Antenna Parameters and Design

Electrical Delay (one direction)	A I I I I I I I I I I
	1.149 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 23, 2006

DASY5 Validation Report for Head TSL

Date: 11.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

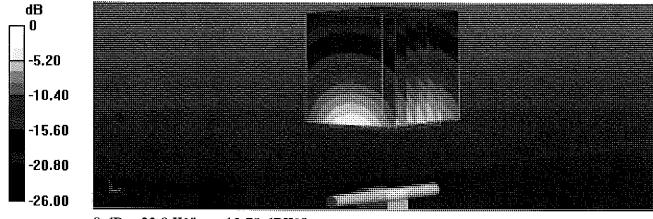
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz; $\sigma = 2.03$ S/m; $\epsilon_r = 37.8$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

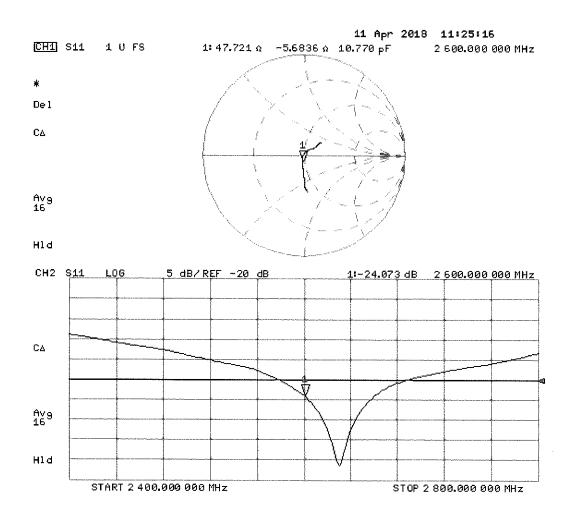
- Probe: EX3DV4 SN7349; ConvF(7.7, 7.7, 7.7); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

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



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



DASY5 Validation Report for Body TSL

Date: 11.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

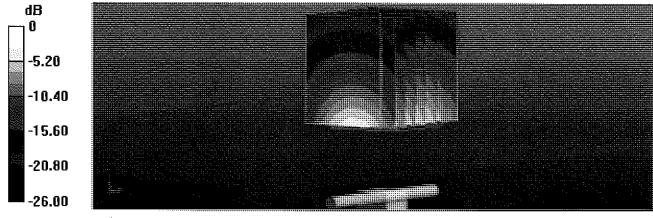
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz; σ = 2.19 S/m; ϵ_r = 52.1; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

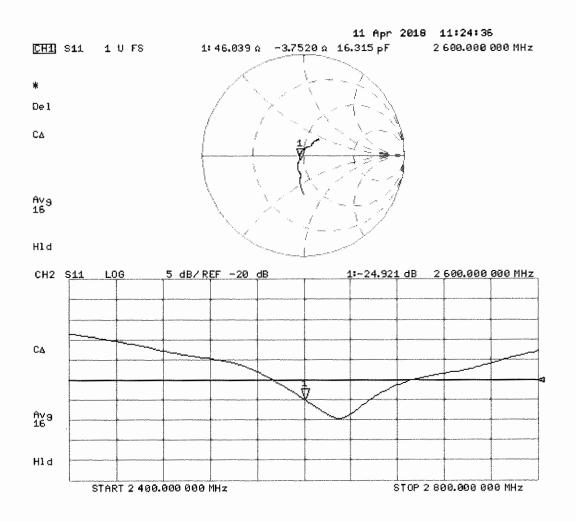
- Probe: EX3DV4 SN7349; ConvF(7.81, 7.81, 7.81); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

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



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





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Certification of Calibration

Object

D2600V2 - SN: 1004

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

Extension Calibration date: 4/11/2019

Description:

SAR Validation Dipole at 2600 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	3/11/2019	Annual	3/11/2020	US39170122
Agilent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1027293
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1126066
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647811
Control Company 4352		Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Keysight 772D		Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	ts BW-N20W5+ DC to 18 GHz Precision Fixed 20		CBT	N/A	CBT	N/A
Narda 4772-3 Attenuator (3dB)		Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091

Measurement Uncertainty = $\pm 23\%$ (k=2)

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

Object:	Date Issued:	Page 1 of 4
D2600V2 – SN: 1004	04/11/2019	Fage 1014

DIPOLE CALIBRATION EXTENSION

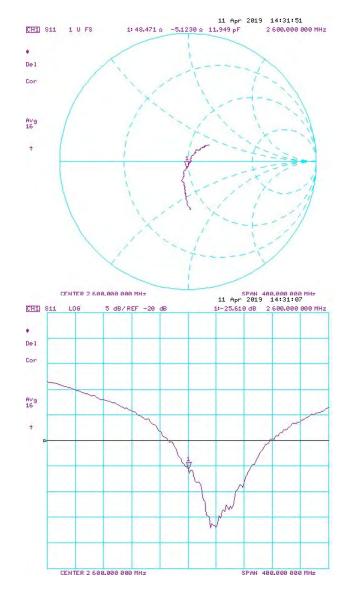
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

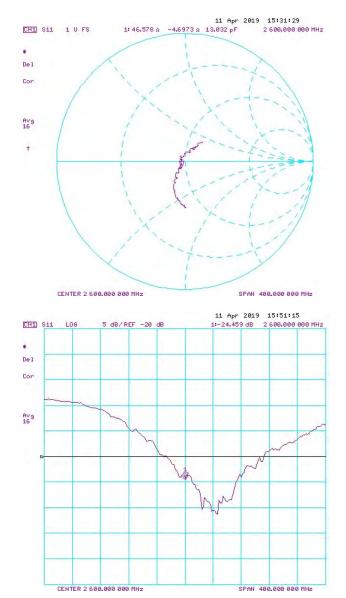
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
4/11/2018	4/11/2019	1.149	5.59	5.51	-1.43%	2.51	2.47	-1.59%	47.7	48.5	0.8	-5.7	-5.1	0.6	-24.1	-25.6	-6.30%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
4/11/2018	4/11/2019	1.149	5.48	5.65	3.10%	2.47	2.48	0.40%	46	46.6	0.6	-3.8	-4.7	0.9	-24.9	-24.5	1.80%	PASS

Object:	Date Issued:	Page 2 of 4
D2600V2 – SN: 1004	04/11/2019	



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Page 3 of 4
D2600V2 – SN: 1004	04/11/2019	



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
D2600V2 – SN: 1004	04/11/2019	

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Client

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Accreditation No.: SCS 0108

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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

Certificate No: D2600V2-1064_Jun19

CALIBRATION CERTIFICATE

Object	D2600V2 - SN:10)E/	
	D200072-011.11		
			BNV 07/81/2019
Calibration procedure(s)	QA CAL-05.v11		17/81/2014
		dure for SAR Validation Source	
	Culibration 11000	Care for CAIT validation bedice.	S Detween 0.7-0 On Z
	L		
Calibration date:	June 14, 2019		
		onal standards, which realize the physical u	
The measurements and the uncerta	ainties with confidence p	robability are given on the following pages a	nd are part of the certificate.
All calibrations have been conducte	ed in the closed laborator	ry facility: environment temperature (22 \pm 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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	1111 -
			MINE
			Milling The second seco
Approved by:	Katja Pokovic	Technical Manager	2111
		.	tell-
	an a		
			Issued: June 20, 2019
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The canonation centricate shall not	se reproduced except in	nui minoui whiten appioval of the laborator	y.

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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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

Glossarv:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.3 ± 6 %	2.03 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	14.9 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	58.1 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.59 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	26.0 W/kg ± 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.5 ± 6 %	2.22 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	14.2 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	55.6 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.33 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	25.0 W/kg ± 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.8 Ω - 6.9 jΩ
Return Loss	- 23.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.6 Ω - 4.4 jΩ
Return Loss	- 24.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.151 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
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DASY5 Validation Report for Head TSL

Date: 14.06.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1064

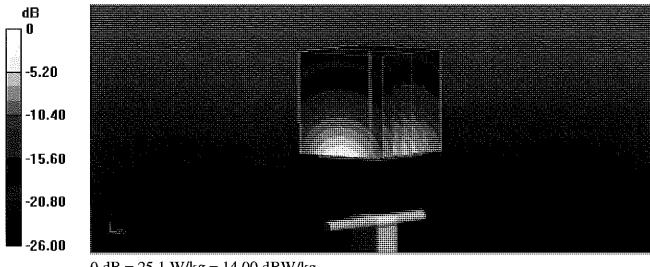
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz; σ = 2.03 S/m; ϵ_r = 37.3; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.69, 7.69, 7.69) @ 2600 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 120.9 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 30.2 W/kg **SAR(1 g) = 14.9 W/kg; SAR(10 g) = 6.59 W/kg** Maximum value of SAR (measured) = 25.1 W/kg



Impedance Measurement Plot for Head TSL

File View	<u>C</u> hannel Sw <u>e</u> ep	o Ca <u>l</u> ibration <u>T</u>	race <u>S</u> cale I	M <u>a</u> rker S <u>y</u> stem	<u>W</u> indow <u>H</u> elp		
			X		A)0000 GHz 8.8630 pF)0000 GHz	49.847 Ω -6.9066 Ω 69.025 mU -87.316 °
Chi:S	Ch 1 Avg = 20 Start 2.40000 GHz						Stop 2.80000 GHz
10.00 5.00 -5.00 -10.00 -15.00 -20.00 -25.00 -35.00 -35.00 -40.00 -Ch1: S	Ch 1 Avg = 20 Start 2,40000 GHz =						-23.220 dB
Status	CH 1: 511	C	1-Port	Avg=20 [)elay		LCL

DASY5 Validation Report for Body TSL

Date: 14.06.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1064

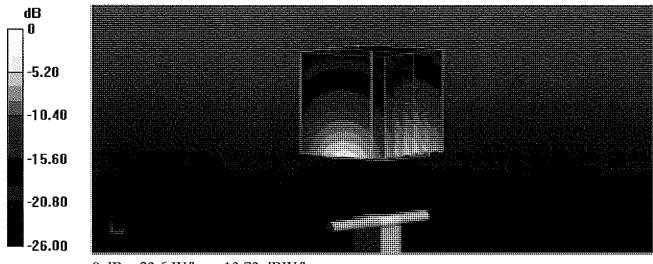
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz; $\sigma = 2.22$ S/m; $\varepsilon_r = 50.5$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.8, 7.8, 7.8) @ 2600 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 110.6 V/m; Power Drift = -0.05 dB Peak SAR (extrapolated) = 28.9 W/kg SAR(1 g) = 14.2 W/kg; SAR(10 g) = 6.33 W/kg Maximum value of SAR (measured) = 23.6 W/kg



0 dB = 23.6 W/kg = 13.73 dBW/kg

Impedance Measurement Plot for Body TSL

File	View	<u>C</u> hannel	Sw <u>e</u> ep	Calibration	<u>T</u> race <u>S</u> cal	e M <u>a</u> rker	S <u>v</u> stem <u>W</u> ir	ndow <u>H</u>	elp		
		Ch 1 Avg =	20						600000 GHz 14.009 pF 600000 GHz	-4.3 56.9	645 Ω 1696 Ω 44 mU 24.93 °
	Ch1: St	art 2.40000								Stop 2.8	80000 GHz
10. 5.0		ALE AND					> 1;	2.	\$00000 dHz	-74 (391 dB
-30 -35 -40	00 00. 00. 00. 00. 00.	<u>Ch 1 Avg =</u> art 2.40000	20 3Hz —								

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S Swiss Calibration Service

Accreditation No.: SCS 0108

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Client PC Test

Certificate No: D3500V2-1059_Jan18

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CALIBRATION CERTIFICATE

Calibration procedure(s) QA CAL-22.v2 Calibration procedure for dipole validation kits between 3-6 GHz Calibration date: January 11, 2018 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 OHIZT Power meter NRP SN: 104778 94-Apr-17 (No. 217-02521/02522) Apr-18
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 OI 1124
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
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 (11/2/2 Power meter NRP SN: 104778 04-Apr-17 (No. 217-0521) Apr-18
Calibration Equipment used (M&TE critical for calibration) HAC Primary Standards ID # Cal Date (Certificate No.) Scheduled Calibration Power meter NBP SN: 104778 04-Apr-17 (No. 217-052) (M2522) Apr-18
Primary Standards ID # Cal Date (Certificate No.) Scheduled Calibration
Power meter NBP SN: 104778 04-Apr-77 (No. 217-0521/02523) Apr-19
Power sensor NRP-Z91 SN: 103244 04-Apr-17 (No. 217-02521) Apr-18
Power sensor NRP-Z91 SN: 103245 04-Apr-17 (No. 217-02522) Apr-18
Reference 20 dB Atlenuator SN: 5058 (20k) 07-Apr-17 (No. 217-02528) Apr-18
Type-N mismatch combination SN: 5047.2 / 06327 07-Apr-17 (No. 217-02529) Apr-18
Reference Probe EX3DV4 SN: 3503 30-Dec-17 (No. EX3-3503 Dec17) Dec-18
DAE4 SN: 601 26-Oct-17 (No. DAE4-601_Oct17) Oct-18
Secondary Standards ID # Check Date (in house) Scheduled Check
Power meter EPM-442A SN: GB37460704 07-Oct-15 (in house check Oct-16) In house check: Oct-18
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-16) In house check: Oct-18
Power sensor HP 8481A SN: MY41092317 07-Oct-15 (in house check Oct-16) In house check: Oct-18
RF generator R&S SMT-06 SN: 100972 15-Jun-15 (in house check Oct-16) In house check: Oct-18
Network Analyzer HP 8753E SN: US37390585 18-Oct-01 (in house check Oct-17) In house check: Oct-18
Name Function Signature
Calibrated by: Michael Weber Laboratory Technician
Approved by: Kalja Pokovic Technical Manager
Issued: January 16, 2018 This calibration certificate shalf not be reproduced except in full without written approval of the laboratory.

Certificate No: D3500V2-1059_Jan18

Page 1 of 8

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 - 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

Glossarv:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3500 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	37.9	2.91 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.5 ± 6 %	2.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.44 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	64.6 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.4 W/kg ± 19.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	51.3	3.31 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.0 ± 6 %	3.32 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	100 mW input power	6.55 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	65.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.43 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.2 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.2 Ω - 7.1 jΩ
Return Loss	- 22.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	53.4 Ω - 4.5 jΩ
Return Loss	- 25.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.136 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 20, 2017

DASY5 Validation Report for Head TSL

Date: 11.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

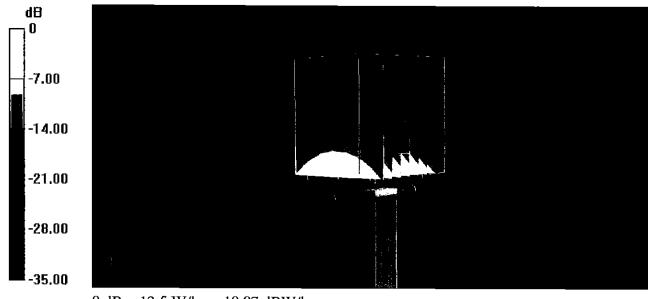
DUT: Dipole 3500 MHz; Type: D3500V2; Serial: D3500V2 - SN:1059

Communication System: UID 0 - CW; Frequency: 3500 MHz Medium parameters used: f = 3500 MHz; $\sigma = 2.91$ S/m; $\varepsilon_r = 38.5$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

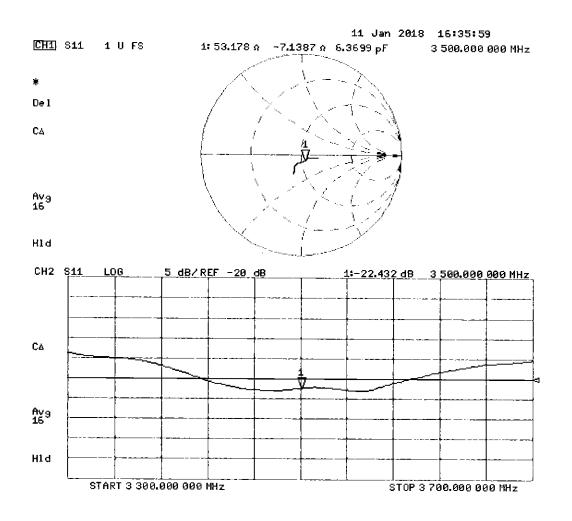
DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.8, 7.8, 7.8); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 69.59 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 17.6 W/kg SAR(1 g) = 6.44 W/kg; SAR(10 g) = 2.43 W/kg Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg



DASY5 Validation Report for Body TSL

Date: 10.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

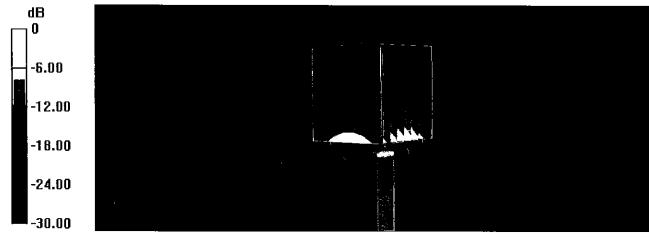
DUT: Dipole 3500 MHz; Type: D3500V2; Serial: D3500V2 - SN:1059

Communication System: UID 0 - CW; Frequency: 3500 MHz Medium parameters used: f = 3500 MHz; $\sigma = 3.32$ S/m; $\varepsilon_r = 50$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

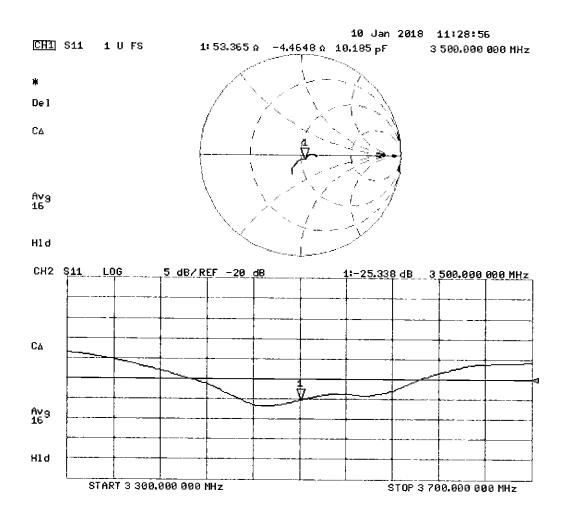
DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.43, 7.43, 7.43); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=100 mW, d=10mm/Zoom Scan , dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 66.18 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 17.9 W/kg SAR(1 g) = 6.55 W/kg; SAR(10 g) = 2.43 W/kg Maximum value of SAR (measured) = 12.6 W/kg



0 dB = 12.6 W/kg = 11.00 dBW/kg





PCTEST ENGINEERING LABORATORY, INC. 7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. +1.410.290.6652 / Fax +1.410.290.6654

http://www.pctest.com



Certification of Calibration

Object

D3500V2 - SN: 1059

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/11/2019

Extension Calibration date:

Description:

SAR Validation Dipole at 3500 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	2/8/2018	Annual	2/8/2019	US39170122
Agilent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Biennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/3/2018	Annual	10/3/2019	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091
SPEAG	EX3DV4	SAR Probe	2/14/2018	Annual	2/14/2019	3914
SPEAG	EX3DV4	SAR Probe	8/24/2018	Annual	8/24/2019	3949

Measurement Uncertainty = $\pm 23\%$ (k=2)

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

Object:	Date Issued:	Page 1 of 5
D3500V2 – SN: 1059	01/11/2019	Page 1 of 5

DIPOLE CALIBRATION EXTENSION

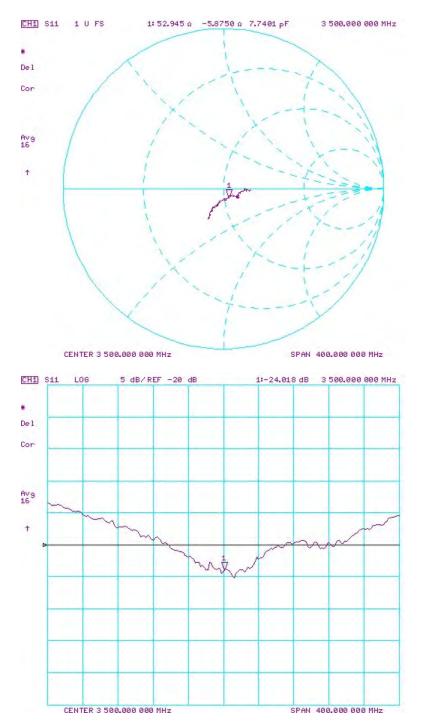
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

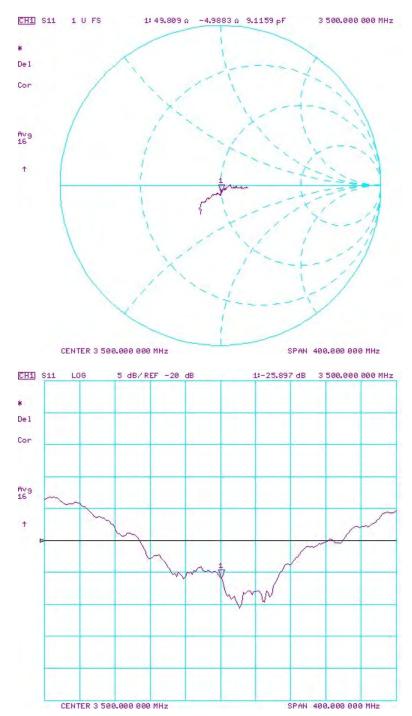
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(%)	W/kg @ 20.0 dBm	(10g) W/kg @ 20.0 dBm		Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Head (dB)	Deviation (%)	
1/11/2018	1/16/2019	1.136	6.46	6.23	-3.56%	2.44	2.34	-4.10%	53.2	52.9	0.3	-7.1	-5.9	1.2	-22.4	-24	-7.20%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm	(9()	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	(10a) W/ka @	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/16/2019	1.136	6.51	6	-7.83%	2.42	2.26	-6.61%	53.4	49.8	3.6	-4.5	-5	0.5	-25.3	-25.9	-2.40%	PASS

Object:	Date Issued:	Page 2 of 5
D3500V2 – SN: 1059	01/11/2019	Faye 2 01 5



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Page 3 of 5
D3500V2 – SN: 1059	01/11/2019	Fage 5 01 5



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Dago 4 of 5
D3500V2 – SN: 1059	01/11/2019	Page 4 of 5





Certification of Calibration

Object

D3500V2 - SN: 1059

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/11/2020

Extension Calibration date:

Description:

SAR Validation Dipole at 3500 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAKS-3.5	Portable DAK	9/10/2019	Annual	9/10/2020	1045
Anritsu	MA2411B	Pulse Power Sensor	8/14/2019	Annual	8/14/2020	1315051
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Agilent	N5182A	MXG Vector Signal Generator	8/19/2019	Annual	8/19/2020	MY47420837
Seekonk	NC-100	Torque Wrench	5/9/2018	Biennial	5/9/2020	22217
MiniCircuits	ZHDC-16-63-S+	Bidirectional Coupler	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272

Measurement Uncertainty = ±23% (k=2)

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

Object:	Date Issued:	Page 1 of 4	
D3500V2 – SN: 1059	01/11/2020	Fage 1014	

DIPOLE CALIBRATION EXTENSION

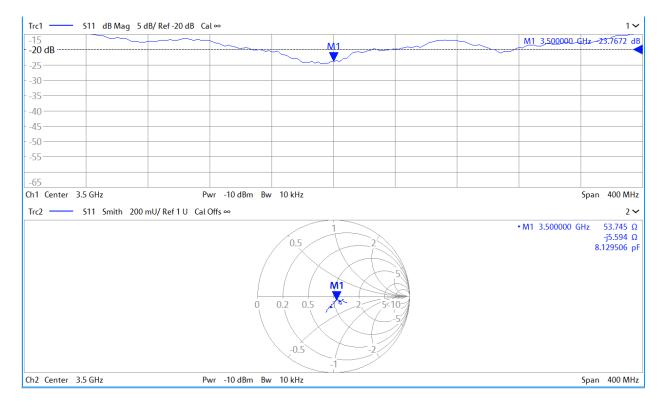
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

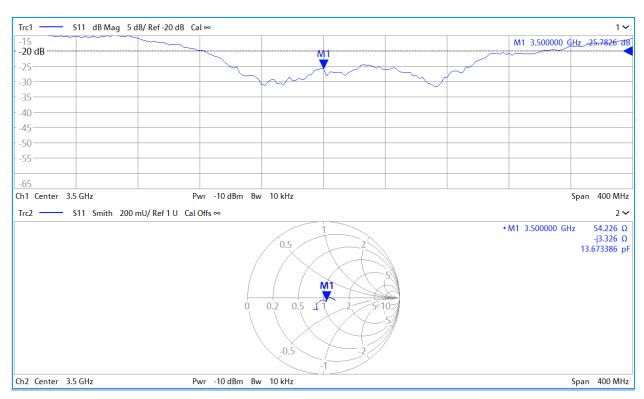
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Head SAR (1g) W/kg @ 20.0 dBm	(96)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(10a) W/ka @	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/11/2020	1.136	6.46	6.73	4.18%	2.44	2.56	4.92%	53.2	53.7	0.5	-7.1	-5.6	1.5	-22.4	-23.8	-6.10%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/11/2020	1.136	6.51	6.53	0.31%	2.42	2.4	-0.83%	53.4	54.2	0.8	-4.5	-3.3	1.2	-25.3	-25.8	-1.90%	PASS

Object:	Date Issued:	Dogo 2 of 4
D3500V2 – SN: 1059	01/11/2020	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Dage 2 of 4
D3500V2 – SN: 1059	01/11/2020	Page 3 of 4



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Daga 4 of 4
D3500V2 – SN: 1059	01/11/2020	Page 4 of 4

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





S Schweizerischer Kalibrierdienst

C Service suisse d'étaionnage

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

ALIBRATION C	ERTIFICATE		
zject	D3700V2 - SN:10	18	:
allbration procedure(s)	QA CAL-22.v2 Calibration process	iure for dipole validation kits betw	een 3-6 GHz
alibration date:	January 11, 2018		BN 01-26-2018
he measurements and the unc	entainties with confidence p	onal standards, which realize the physical unit robability are given on the following pages and p facility: environment temperature (22 ± 3)°C	1 are part of the centricate. 02/06/2 02/06/2
Calibration Equipment used (M8			01/12/
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18 ·
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2/06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 3503	30-Dec-17 (No. EX3-3503_Dec17)	Dec-18
	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
DAE4			Scheduled Check
	lin #	Check Date (in house)	
Secondary Standards	ID #	Check Date (in house) 07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Secondary Standards Power mater EPM-442A	SN: GB37480704	07-Oct-15 (In house check Oct-16)	In house check: Oct-18 In house check: Oct-18
Secondary Standards Power meter EPM-442A Power sensor HP 8481A	SN: GB37480704 SN: US37292783	07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	
Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A	SN: GB37480704 SN: US37292783 SN: MY41092317	07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	In house check: Oct-18
	SN: GB37480704 SN: US37292783	07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	In house check: Oct-18 In house check: Oct-18
Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972	07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16) 18-Oct-01 (in house check Oct-17) Function	In house check: Oct-18 In house check: Oct-18 In house check: Oct-18
Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US37390585	07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16) 18-Oct-01 (in house check Oct-17)	In house check: Oct-18 In house check: Oct-18 In house check: Oct-18 In house check: Oct-18
Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer HP 8753E	SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US37390585 Name	07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16) 18-Oct-01 (in house check Oct-17) Function	In house check: Oct-18 In house check: Oct-18 In house check: Oct-18 In house check: Oct-18

Certificate No; D3700V2-1018_Jan18

Page 1 of 8

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst

- S Service suisse d'étalonnage С
 - Servizio svizzero di taratura
- S **Swiss Calibration Service**

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

Glossarv:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Accreditation No.: SCS 0108

Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3700 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	37.7	3.12 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.3 ± 6 %	3.07 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	100 mW input power	6.54 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	65.8 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.41 W/kg

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	51.0	3.55 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	49.7 ± 6 %	3.53 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	100 mW input power	6.46 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	64.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.32 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	23.1 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.0 Ω - 8.3 jΩ				
Return Loss	- 21.4 dB				

Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.5 Ω - 6.3 jΩ
Return Loss	- 23.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.144 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 18, 2015

DASY5 Validation Report for Head TSL

Date: 11.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

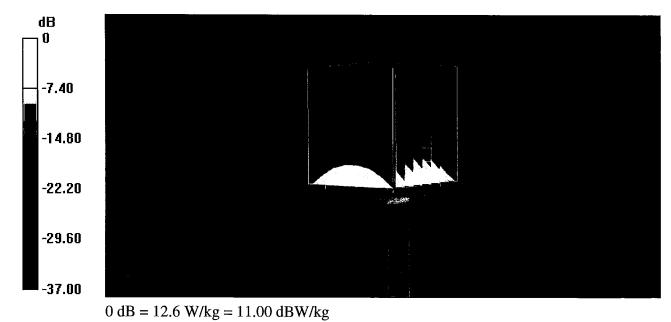
DUT: Dipole 3700 MHz; Type: D3700V2; Serial: D3700V2 - SN:1018

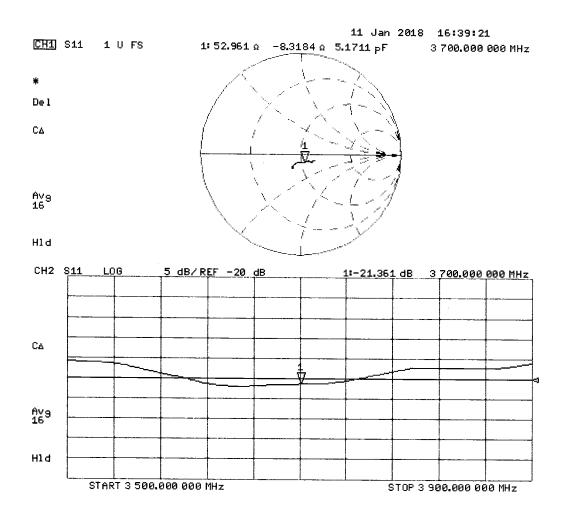
Communication System: UID 0 - CW; Frequency: 3700 MHz Medium parameters used: f = 3700 MHz; $\sigma = 3.07$ S/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.5, 7.5, 7.5); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 69.40 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 18.5 W/kg SAR(1 g) = 6.54 W/kg; SAR(10 g) = 2.41 W/kg Maximum value of SAR (measured) = 12.6 W/kg





DASY5 Validation Report for Body TSL

Date: 10.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 3700 MHz; Type: D3700V2; Serial: D3700V2 - SN:1018

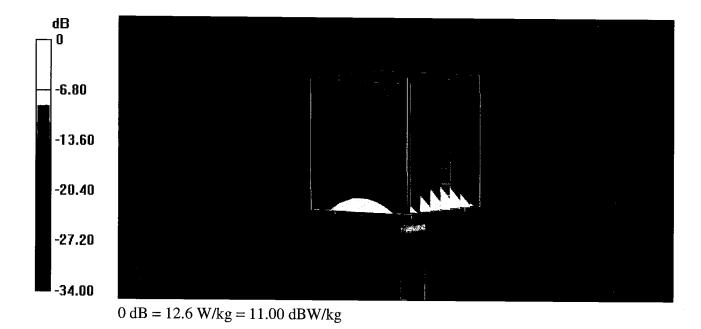
Communication System: UID 0 - CW; Frequency: 3700 MHz Medium parameters used: f = 3700 MHz; $\sigma = 3.53$ S/m; $\epsilon_r = 49.7$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

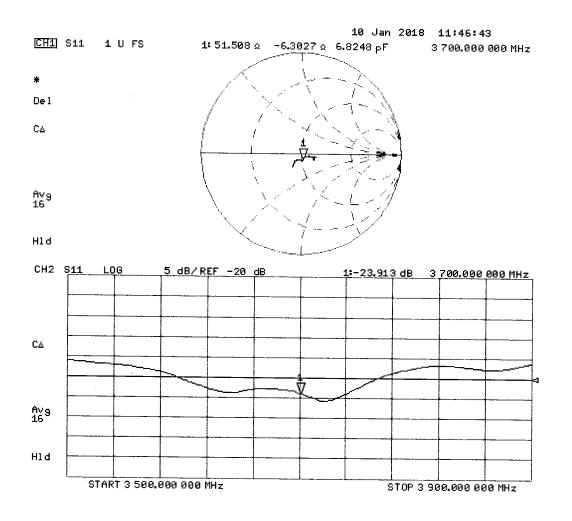
DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.28, 7.28, 7.28); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=100 mW, d=10mm/Zoom Scan , dist=1.4mm

(8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mmReference Value = 64.16 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 18.4 W/kg SAR(1 g) = 6.46 W/kg; SAR(10 g) = 2.32 W/kg Maximum value of SAR (measured) = 12.6 W/kg







PCTEST ENGINEERING LABORATORY, INC. 7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. +1.410.290.6652 / Fax +1.410.290.6654

http://www.pctest.com



Certification of Calibration

Object

D3700V2 - SN: 1018

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/11/2019

Extension Calibration date:

Description:

SAR Validation Dipole at 3500 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer		Annual	2/8/2019	US39170122
Agilent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Biennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/3/2018	Annual	10/3/2019	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091
SPEAG	EX3DV4	SAR Probe	2/14/2018	Annual	2/14/2019	3914
SPEAG	EX3DV4	SAR Probe	8/24/2018	Annual	8/24/2019	3949

Measurement Uncertainty = $\pm 23\%$ (k=2)

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

Object:	Date Issued:	Page 1 of 4
D3700V2 – SN: 1018	01/11/2019	raye 1014

DIPOLE CALIBRATION EXTENSION

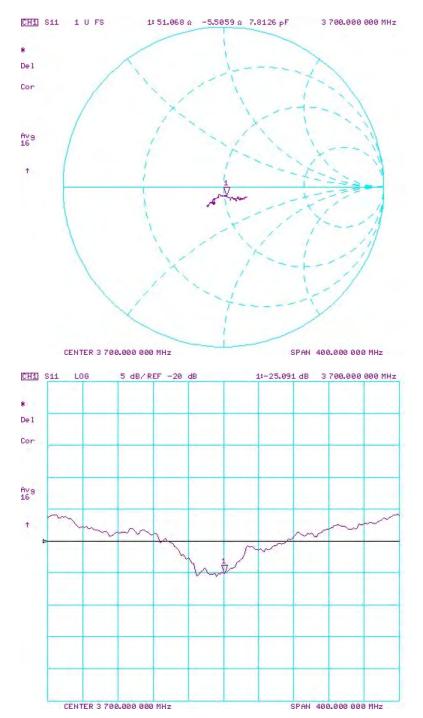
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

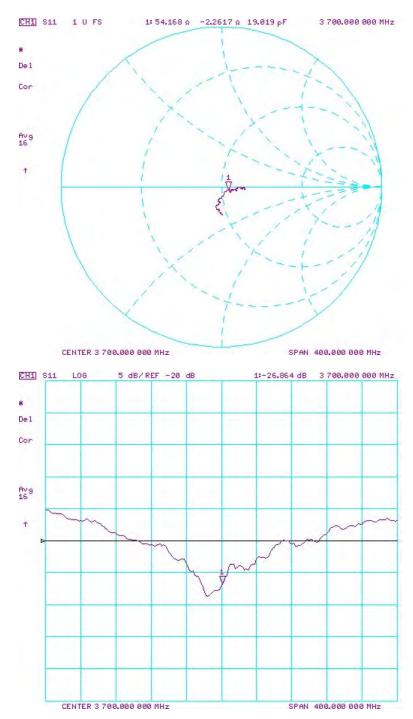
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Head SAR (1g) W/kg @ 20.0 dBm	(96)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(10a) W/ka @	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/11/2019	1.144	6.58	6.22	-5.47%	2.42	2.27	-6.20%	53	51.1	1.9	-8.3	-5.5	2.8	-21.4	-25.1	-17.20%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/11/2019	1.144	6.43	6.08	-5.44%	2.31	2.21	-4.33%	51.5	54.2	2.7	-6.3	-2.3	4	-23.9	-26.9	-12.40%	PASS

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Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Page 3 of 4	
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Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
D3700V2 – SN: 1018	01/11/2019	Page 4 of 4





Certification of Calibration

Object

D3700V2 - SN: 1018

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/11/2020

Extension Calibration date:

Description:

SAR Validation Dipole at 3700 MHz.

Calibration Equipment used:

Manufacturer	Model	Description		Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAKS-3.5	Portable DAK	9/10/2019	Annual	9/10/2020	1045
Anritsu	MA2411B	Pulse Power Sensor	8/14/2019	Annual	8/14/2020	1315051
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Agilent	N5182A	MXG Vector Signal Generator	8/19/2019	Annual	8/19/2020	MY47420837
Seekonk	NC-100	Torque Wrench	5/9/2018	Biennial	5/9/2020	22217
MiniCircuits	ZHDC-16-63-S+	Bidirectional Coupler	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272

Measurement Uncertainty = ±23% (k=2)

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

Object:	Date Issued:	Dere 1 of 4	
D3700V2 – SN: 1018	01/11/2020	Page 1 of 4	

DIPOLE CALIBRATION EXTENSION

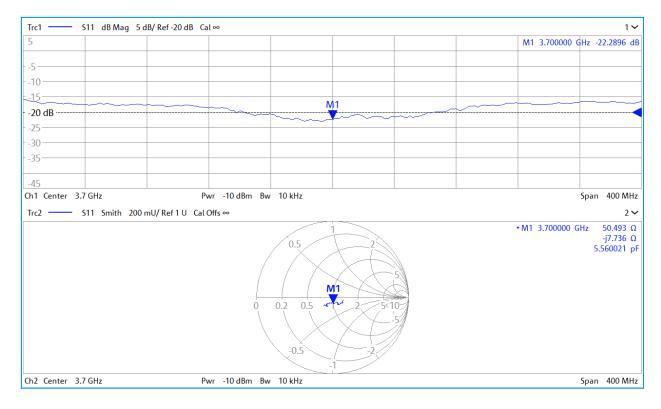
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

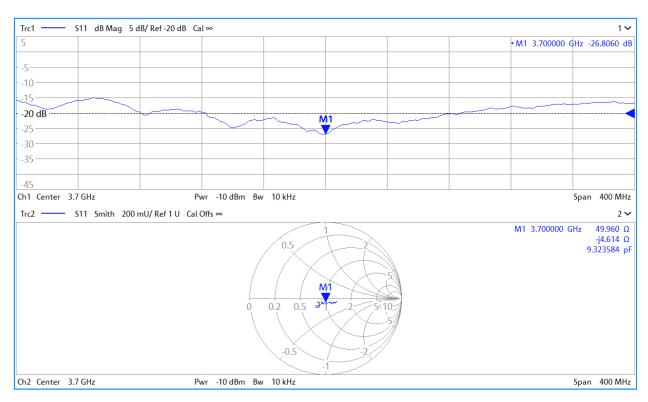
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Head SAR (1g) W/kg @ 20.0 dBm		Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(40-) 10/0	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/11/2020	1.144	6.58	7.08	7.60%	2.42	2.6	7.44%	53	50.5	2.5	-8.3	-7.7	0.6	-21.4	-22.3	-4.20%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm			(10a) W/ka @	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
1/11/2018	1/11/2020	1.144	6.43	6.6	2.64%	2.31	2.36	2.16%	51.5	50	1.5	-6.3	-4.6	1.7	-23.9	-26.8	-12.20%	PASS

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Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Page 3 of 4	
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Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Dogo 4 of 4
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 6004 Zurich, Switzerland





S

Schweizertscher Kalibrierdienst Service suisse d'étalonnage

C Service suisse d'etaionnage 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 PC Test

Certificate No: D5GHzV2-1057_Jan18

Objeci	D5GHzV2 - SN:1	057	
Calibration procedure(s)	QA CAL-22.v2 Calibration proce	dure for dipole validation kits be	tween 3-6 GHz
			RN
Calibration date:	January 16, 2018	3	BN 01-25-2018
This calibration certificate docum	onis the traceshilling to not	ional standards, which realize the physical ur	
The measurements and the unce	rtaintles with confidence p	nonal standards, which realize the physical up probability are given on the following pages a	
Au calidrations have deen conque	xed in the closed laborato	ry facility: environment temperature (22 \pm 3)°	³ C and humidity < 70% BN
Calibration Equipment used (M&1	E critical for calibration)		nilití
	1.		
Primary Standards	[D #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Atlenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2/06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 3503	30-Dec-17 (No. EX3-3503_Dec17)	Dec-16
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
Secondary Standards	ID #	Check Date (in house)	Schedulec Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (In house check Oct-16)	in house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check; Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18
	Name	Function	Signature
	Leif Kivsner	Laboratory Technician	Sollyn
Calibrated by:		•	
Callbrated by: Approved by:	Katja Pokovic	Technical Manager	66KS

Certificate No: D5GHzV2-1057_Jan18

Calibration Laboratory of

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





Schweizerischer Kalibrierdienst

- S Service sulsse d'étalonnage
- С Servizio svizzero di taratura
- S Swiss Calibration Service

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Accreditation No.: SCS 0108

Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.2 ± 6 %	4.55 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	79.2 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.8 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.8 ± 6 %	4.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	84.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.0 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5750 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.5 ± 6 %	5.06 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.5 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.0 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

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

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.36 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	73.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.06 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.4 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.2 ± 6 %	5.48 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.64 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.9 W/kg ± 19.9 % (k=2)

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

Body TSL parameters at 5600 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.6 ± 6 %	5.94 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	79.9 W/kg ± 19.9 % (k=2)
	1	

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.3 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.3 ± 6 %	6.15 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.72 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.7 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.2 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5800 MHz The following parameters and calculations were applied.

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

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.3 W/kg ± 19.9 % (k=2)

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

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	50.0 Ω - 5.5 jΩ
Return Loss	- 25.2 dB

Antenna Parameters with Head TSL at 5600 MHz

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

Antenna Parameters with Head TSL at 5750 MHz

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

Antenna Parameters with Body TSL at 5200 MHz

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

Antenna Parameters with Body TSL at 5250 MHz

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

Antenna Parameters with Body TSL at 5600 MHz

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

Antenna Parameters with Body TSL at 5750 MHz

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

Antenna Parameters with Body TSL at 5800 MHz

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

General Antenna Parameters and Design

Electrical Delay (one direction) 1.203 ns	Electrical Delay (one direction)	1.203 ns
---	----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions (f=5200 MHz)

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

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

SAR result with SAM Head (Top)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.24 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.6 W/kg ± 20.3 % (k=2)
CAD successed over 10 cm ³ (10 s) of Head TCI	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.35 W/kg

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.54 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	85.6 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.7 W/kg ± 19.9 % (k=2)

SAR result with SAM Head (Neck)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.14 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.6 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg

SAR result with SAM Head (Ear)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	5.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.7 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	1.76 W/kg

Measurement Conditions (f=5800 MHz)

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

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L
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SAR result with SAM Head (Top)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.62 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	86.3 W/kg ± 20.3 % (k=2)
SAR averaged over 10 $ m cm^3$ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	

SAR result with SAM Head (Mouth)

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

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

SAR result with SAM Head (Neck)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	83.4 W/kg ± 20.3 % (k=2)
SAB averaged over 10 cm ³ (10 g) of Head TSI	condition	

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

SAR result with SAM Head (Ear)

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	5.68 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	56.8 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	1.89 W/kg

DASY5 Validation Report for Head TSL

Date: 11.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz Medium parameters used: f = 5250 MHz; $\sigma = 4.55$ S/m; $\varepsilon_r = 36.2$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5600 MHz; $\sigma = 4.9$ S/m; $\varepsilon_r = 35.8$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5750 MHz; $\sigma = 5.06$ S/m; $\varepsilon_r = 35.5$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

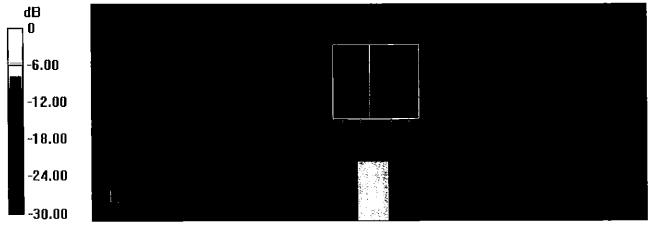
DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.51, 5.51, 5.51); Calibrated: 30.12.2017, ConvF(5.05, 5.05, 5.05); Calibrated: 30.12.2017, ConvF(4.98, 4.98, 4.98); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601 modified; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

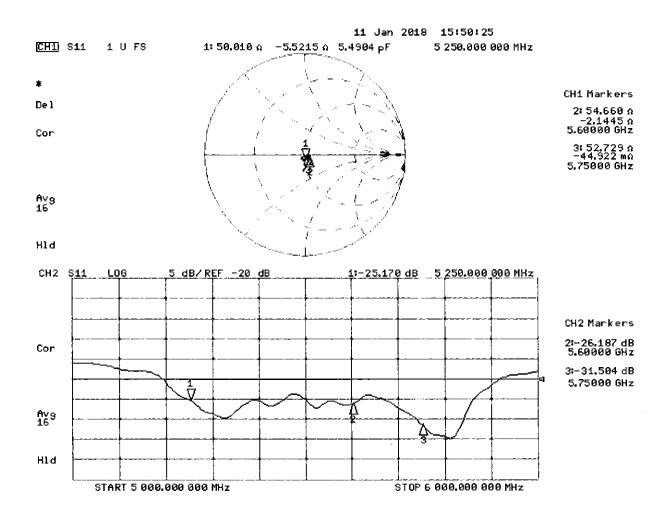
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 72.54 V/m; Power Drift = -0.02 dB Peak SAR (extrapolated) = 27.5 W/kg SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.28 W/kg Maximum value of SAR (measured) = 17.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 72.77 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 32.2 W/kg SAR(1 g) = 8.41 W/kg; SAR(10 g) = 2.4 W/kg Maximum value of SAR (measured) = 19.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 70.93 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 31.4 W/kg SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.3 W/kg Maximum value of SAR (measured) = 18.9 W/kg



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



DASY5 Validation Report for Body TSL

Date: 10.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz, Frequency: 5800 MHz Medium parameters used: f = 5200 MHz; $\sigma = 5.41$ S/m; $\varepsilon_r = 47.3$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5250 MHz; $\sigma = 5.48$ S/m; $\varepsilon_r = 47.2$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5600 MHz; $\sigma = 5.94$ S/m; $\varepsilon_r = 46.6$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5750 MHz; $\sigma = 6.15$ S/m; $\varepsilon_r = 46.3$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5800 MHz; $\sigma = 6.22$ S/m; $\varepsilon_r = 46.2$; $\rho = 1000$ kg/m³ Medium parameters used: f = 5800 MHz; $\sigma = 6.22$ S/m; $\varepsilon_r = 46.2$; $\rho = 1000$ kg/m³

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.35, 5.35, 5.35); Calibrated: 30.12.2017, ConvF(5.26, 5.26, 5.26); Calibrated: 30.12.2017, ConvF(4.65, 4.65, 4.65); Calibrated: 30.12.2017, ConvF(4.57, 4.57, 4.57); Calibrated: 30.12.2017, ConvF(4.53, 4.53, 4.53); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 64.53 V/m; Power Drift = -0.02 dB Peak SAR (extrapolated) = 29.4 W/kg SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.13 W/kg Maximum value of SAR (measured) = 17.9 W/kg

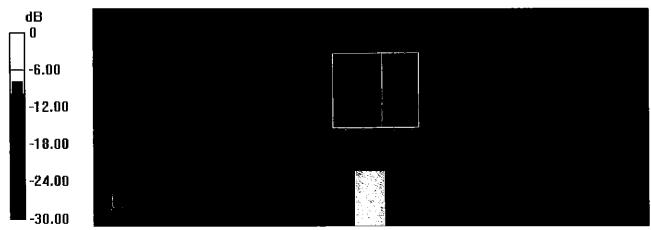
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 65.09 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 34.0 W/kg SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.25 W/kg Maximum value of SAR (measured) = 19.5 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan,

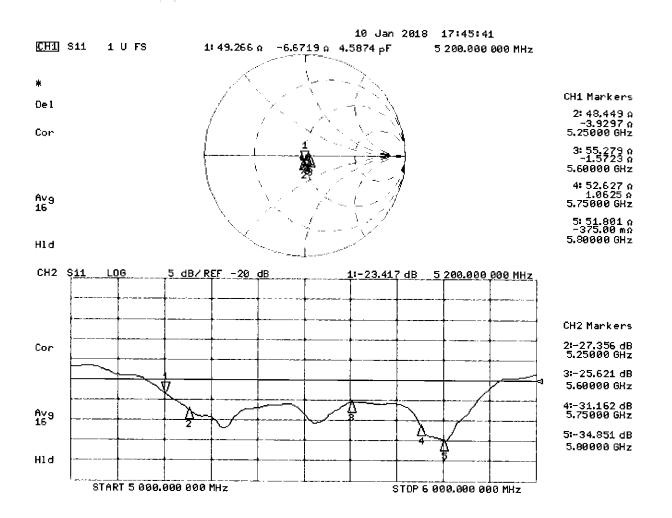
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 63.45 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 32.9 W/kg SAR(1 g) = 7.72 W/kg; SAR(10 g) = 2.14 W/kg Maximum value of SAR (measured) = 18.9 W/kg

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



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

Impedance Measurement Plot for Body TSL



DASY5 Validation Report for SAM Head

Date: 16.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

DASY52 Configuration:

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

SAM Head/Top - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

dz=1.4mm Reference Value = 72.99 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 30.6 W/kg SAR(1 g) = 8.24 W/kg; SAR(10 g) = 2.35 W/kg Maximum value of SAR (measured) = 19.7 W/kg

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

SAM Head/Mouth - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 72.79 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 29.5 W/kg SAR(1 g) = 8.54 W/kg; SAR(10 g) = 2.37 W/kg Maximum value of SAR (measured) = 20.7 W/kg SAM Head/Mouth - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 71.69 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 34.9 W/kg

SAR(1 g) = 8.88 W/kg; SAR(10 g) = 2.44 W/kgMaximum value of SAR (measured) = 23.0 W/kg

SAM Head/Neck - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

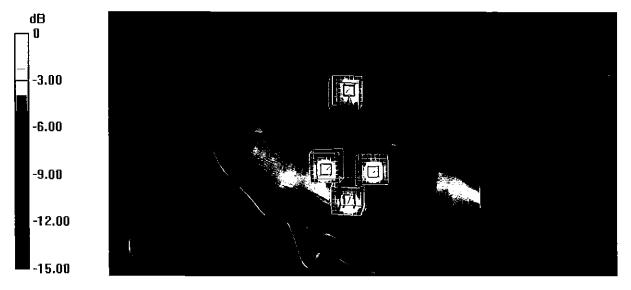
dz=1.4mm Reference Value = 72.48 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 27.9 W/kg SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.37 W/kg Maximum value of SAR (measured) = 19.3 W/kg

SAM Head/Neck - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 72.90 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 33.4 W/kg SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.35 W/kg Maximum value of SAR (measured) = 21.8 W/kg

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

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



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



PCTEST ENGINEERING LABORATORY, INC. 7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. +1.410.290.6652 / Fax +1.410.290.6654

http://www.pctest.com



Certification of Calibration

Object

D5GHzV2 - SN: 1057

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/16/2019

Extension Calibration date:

Description:

SAR Validation Dipole at 5250, 5600, and 5750 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	2/8/2018	Annual	2/8/2019	US39170122
Agilent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Biennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/3/2018	Annual	10/3/2019	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091
SPEAG	EX3DV4	SAR Probe	8/23/2018	Annual	8/23/2019	7308
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409

Measurement Uncertainty = ±23% (k=2)

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

Object:	Date Issued:	Page 1 of 4
D5GHzV2 – SN: 1057	01/16/2019	Fage 1014

DIPOLE CALIBRATION EXTENSION

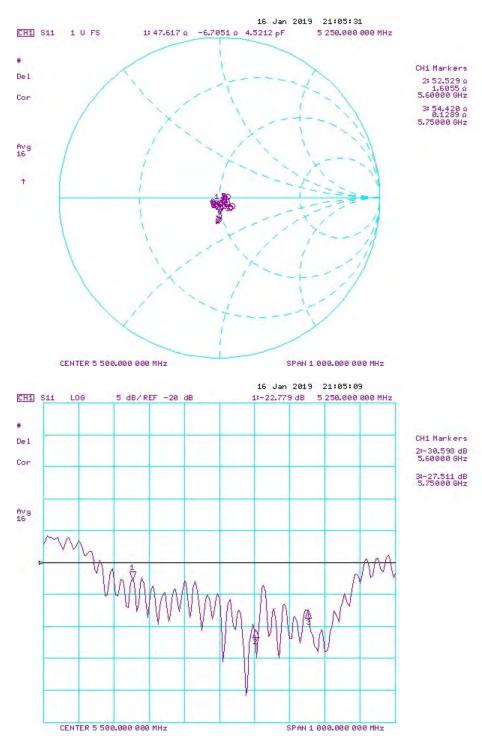
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

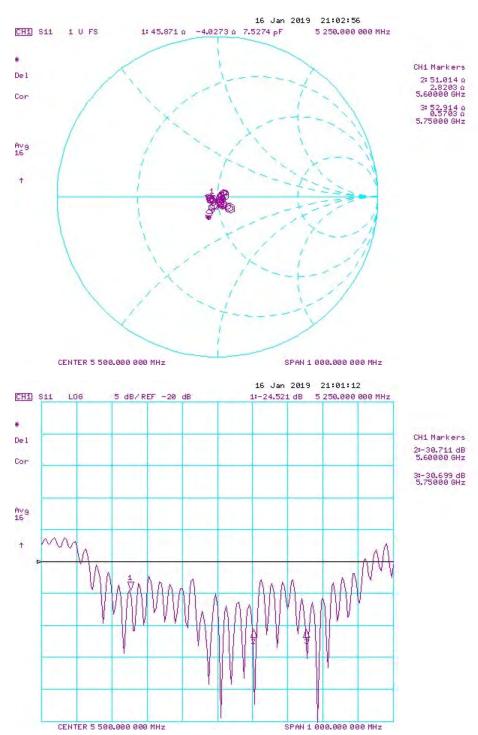
Frequency (MHz)	Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 17.0 dBm	Measured Head SAR (1g) W/kg @ 17.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 17.0 dBm	Measured Head SAR (10g) W/kg @ 17.0 dBm	Deviation 10g (%)		Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
5250	1/16/2018	1/16/2019	1.203	3.96	3.63	-8.33%	1.14	1.04	-8.77%	50	47.6	2.4	-5.5	-6.7	1.2	-25.2	-22.8	9.60%	PASS
5600	1/16/2018	1/16/2019	1.203	4.205	3.84	-8.68%	1.2	1.09	-9.17%	54.7	52.5	2.2	-2.1	1.6	3.7	-26.2	-30.6	-16.80%	PASS
5750	1/16/2018	1/16/2019	1.203	4.025	3.76	-6.58%	1.15	1.07	-6.96%	52.7	54.4	1.7	0	0.1	0.1	-31.5	-27.5	12.70%	PASS
Frequency (MHz)	Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 17.0 dBm	Measured Body SAR (1g) W/kg @ 17.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 17.0 dBm	Measured Body SAR (10g) W/kg @ 17.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
5250	1/16/2018	1/16/2019	1.203	3.795	3.73	-1.71%	1.06	1.03	-2.37%	48.4	45.9	2.5	-3.9	-4	0.1	-27.4	-24.5	10.50%	PASS
5600	1/16/2018	1/16/2019	1.203	3.995	4.06	1.63%	1.12	1.12	0.45%	55.3	51	4.3	-1.6	2.8	4.4	-25.6	-30.7	-20.00%	PASS
5750	1/16/2018	1/16/2019	1.203	3.835	3.65	-4.82%	1.06	1.02	-3.77%	52.6	52.9	0.3	1.1	0.6	0.5	-31.2	-30.7	1.60%	PASS

Object:	Date Issued:	Dogo 2 of 4
D5GHzV2 – SN: 1057	01/16/2019	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Dage 2 of 4
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Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
D5GHzV2 – SN: 1057	01/16/2019	Page 4 of 4





Certification of Calibration

Object

D5GHzV2 – SN: 1057

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/16/2020

Extension Calibration date:

Description:

SAR Validation Dipole at 5250, 5600, and 5750 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAKS-3.5	Portable DAK	9/10/2019	Annual	9/10/2020	1045
Anritsu	MA2411B	Pulse Power Sensor	8/14/2019	Annual	8/14/2020	1315051
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	ML2495A	Power Meter	1/15/2020	Annual	1/15/2021	1328004
Agilent	N5182A	MXG Vector Signal Generator	8/19/2019	Annual	8/19/2020	MY47420837
Seekonk	NC-100	Torque Wrench	5/9/2018	Biennial	5/9/2020	22217
MiniCircuits	ZHDC-16-63-S+	Bidirectional Coupler	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728

Measurement Uncertainty = $\pm 23\%$ (k=2)

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

Object:	Date Issued:	Page 1 of 4
D5GHzV2 – SN: 1057	01/16/2020	Fage 1014

DIPOLE CALIBRATION EXTENSION

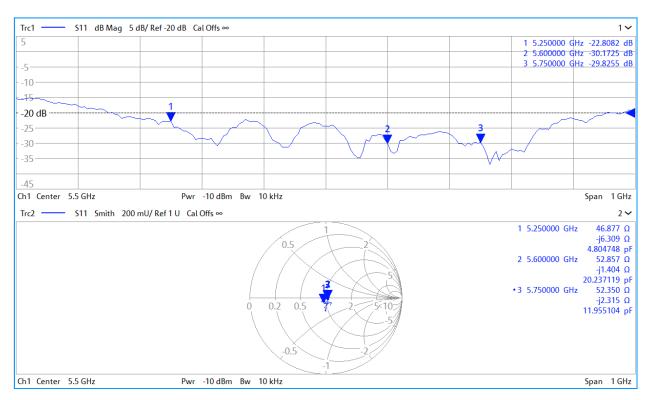
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

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

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

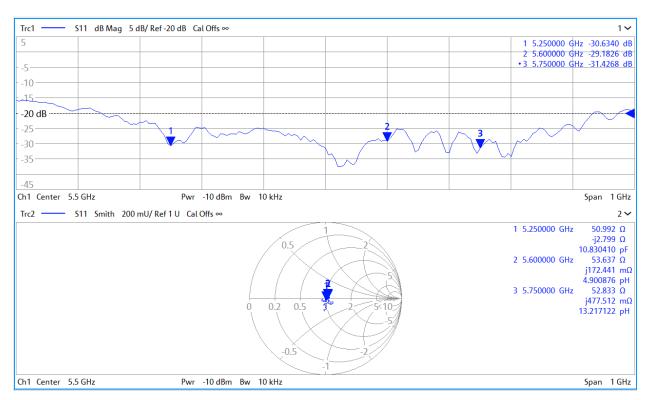
Frequency (MHz)	Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 17.0 dBm	Measured Head SAR (1g) W/kg @ 17.0 dBm		Certificate SAR Target Head (10g) W/kg @ 17.0 dBm	Measured Head SAR (10g) W/kg @ 17.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
5250	1/16/2018	1/16/2020	1.203	3.96	3.72	-6.06%	1.14	1.05	-7.89%	50	46.9	3.1	-5.5	-6.3	0.8	-25.2	-22.8	9.50%	PASS
5600	1/16/2018	1/16/2020	1.203	4.205	3.91	-7.02%	1.2	1.11	-7.50%	54.7	52.9	1.8	-2.1	-1.4	0.7	-26.2	-30.2	-15.20%	PASS
5750	1/16/2018	1/16/2020	1.203	4.025	3.72	-7.58%	1.15	1.05	-8.70%	52.7	52.4	0.4	0	-2.3	2.3	-31.5	-29.8	5.30%	PASS
Frequency (MHz)	Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 17.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 17.0 dBm	Measured Body SAR (10g) W/kg @ 17.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
5250	1/16/2018	1/16/2020	1.203	3.795	3.75	-1.19%	1.06	1.04	-1.42%	48.4	51	2.6	-3.9	-2.8	1.1	-27.4	-30.6	-11.80%	PASS
5600	1/16/2018	1/16/2020	1.203	3.995	3.98	-0.38%	1.12	1.1	-1.35%	55.3	53.6	1.7	-1.6	0.2	1.8	-25.6	-29.2	-14.00%	PASS
5750	1/16/2018	1/16/2020	1.203	3.835	3.87	0.91%	1.06	1.06	0.00%	52.6	52.8	0.2	1.1	0.5	0.6	-31.2	-31.4	-0.20%	PASS

Object:	Date Issued:	Page 2 of 4
D5GHzV2 – SN: 1057	01/16/2020	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Dege 2 of 4
D5GHzV2 – SN: 1057	01/16/2020	Page 3 of 4



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
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Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

Client





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Schweizerischer Kalibrierdienst Service suisse 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

PC Test

Certificate No: D5GHzV2-1191_Sep19

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CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN:1	191	
Calibration procedure(s)	QA CAL-22.v4 Calibration Proce	dure for SAR Validation Sources be	otween 3-6 GHz BN Q126 / 2019
Calibration date:	September 17, 20	019	
	•	onal standards, which realize the physical units o robability are given on the following pages and ar	
All calibrations have been conducte	ed in the closed laborator	y facility: environment temperature (22 \pm 3)°C an	nd humidity < 70%.
Calibration Equipment used (M&TE	critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 3503	25-Mar-19 (No. EX3-3503_Mar19)	Mar-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	And
Approved by:	Katja Pokovic	Technical Manager	alle
T 111	ha manadara di seria		Issued: September 18, 2019
This calibration certificate shall not	be reproduced except in	full without written approval of the laboratory.	

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst S

Service suisse d'étalonnage С

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.1 ± 6 %	4.53 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.8 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.32 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.0 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.6 ± 6 %	4.88 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	144 S.S. 100 S.S.	

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.7 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.4 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5750 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.03 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.08 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.2 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.29 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.7 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

, la rener	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.44 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.55 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	74.9 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.11 W/kg

normalized to 1W

20.9 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5250 MHz

SAR for nominal Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.76 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	77.0 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.16 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.4 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.2 ± 6 %	5.98 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.93 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	78.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.9 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5750 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.0 ± 6 %	6.19 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	1 1 1 1	

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.75 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.9 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	·
SAR measured	100 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.3 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5800 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	45.9 ± 6 %	6.26 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5800 MHz

SAR for nominal Body TSL parameters

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.66 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.0 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.12 W/kg

normalized to 1W

21.0 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	53.5 Ω - 6.2 jΩ
Return Loss	- 23.2 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	56.4 Ω - 4.3 jΩ
Return Loss	- 22.8 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	59.1 Ω + 1.9 jΩ
Return Loss	- 21.4 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	50.9 Ω - 8.6 jΩ
Return Loss	- 21.3 dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	53.2 Ω - 4.1 jΩ
Return Loss	- 26.0 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	58.1 Ω - 4.2 ϳΩ
Return Loss	- 21.4 dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	60.3 Ω + 2.3 jΩ
Return Loss	- 20.4 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	57.5 Ω + 2.3 jΩ
Return Loss	- 22.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.202 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

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions (f=5200 MHz)

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

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L
1 man.om		

SAR result with SAM Head (Top)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.4 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.4 W/kg ± 19.9 % (k=2)

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	83.8 W/kg ± 20.3 % (k=2)
	······································	
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	······································
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.36 W/kg

SAR result with SAM Head (Neck)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.4 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.6W/kg ± 19.9 % (k=2)

SAR result with SAM Head (Ear)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	5.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.1 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	1.78 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	17.8 W/kg ± 19.9 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Measurement Conditions (f=5800 MHz)

DASY system configuration, as far as not given on page 1 and 3.				
Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L		

SAR result with SAM Head (Top)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.7 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg

normalized to 1W

normalized to 1W

23.3 W/kg ± 19.9 % (k=2)

23.6 W/kg ± 19.9 % (k=2)

SAR result with SAM Head (Mouth)

SAR for nominal Head TSL parameters

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	85.5 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg

SAR result with SAM Head (Neck)

SAR for nominal Head TSL parameters

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	78.9 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.5 W/kg ± 19.9 % (k=2)

SAR result with SAM Head (Ear)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	5.60 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	55.9 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	1.92 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.1 W/kg ± 19.9 % (k=2)

DASY5 Validation Report for Head TSL

Date: 13.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1191

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz Medium parameters used: f = 5250 MHz; σ = 4.53 S/m; ϵ_r = 35.1; ρ = 1000 kg/m³, Medium parameters used: f = 5600 MHz; σ = 4.88 S/m; ϵ_r = 34.6; ρ = 1000 kg/m³, Medium parameters used: f = 5750 MHz; σ = 5.03 S/m; ϵ_r = 34.4; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

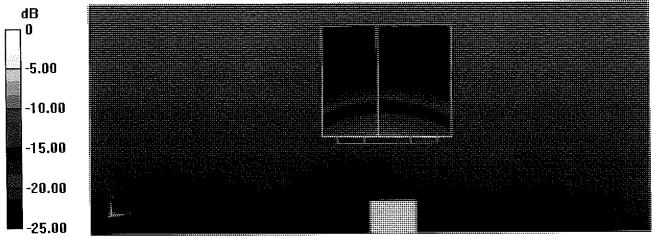
DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.4, 5.4, 5.4) @ 5250 MHz, ConvF(4.95, 4.95, 4.95) @ 5600 MHz, ConvF(4.98, 4.98, 4.98) @ 5750 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 76.95 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 28.0 W/kg SAR(1 g) = 8.13 W/kg; SAR(10 g) = 2.32 W/kg Maximum value of SAR (measured) = 18.2 W/kg

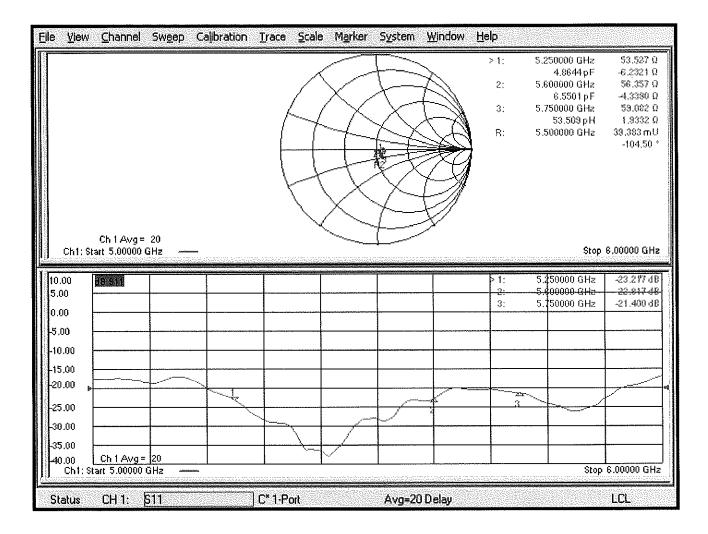
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 76.89 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 30.9 W/kg SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.36 W/kg Maximum value of SAR (measured) = 19.2 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 74.20 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 31.6 W/kg SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.29 W/kg Maximum value of SAR (measured) = 18.9 W/kg



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

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 16.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1191

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz, Frequency: 5800 MHz Medium parameters used: f = 5200 MHz; $\sigma = 5.44$ S/m; $\varepsilon_r = 46.9$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5250 MHz; $\sigma = 5.51$ S/m; $\varepsilon_r = 46.9$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5600 MHz; $\sigma = 5.98$ S/m; $\varepsilon_r = 46.2$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5750 MHz; $\sigma = 6.19$ S/m; $\varepsilon_r = 46$; $\rho = 1000$ kg/m³, Medium parameters used: f = 5800 MHz; $\sigma = 6.26$ S/m; $\varepsilon_r = 45.9$; $\rho = 1000$ kg/m³ Medium parameters used: f = 5800 MHz; $\sigma = 6.26$ S/m; $\varepsilon_r = 45.9$; $\rho = 1000$ kg/m³

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.14, 5.14, 5.14) @ 5200 MHz, ConvF(5.26, 5.26, 5.26) @ 5250 MHz, ConvF(4.74, 4.74, 4.74) @ 5600 MHz, ConvF(4.62, 4.62, 4.62) @ 5750 MHz, ConvF(4.62, 4.62, 4.62) @ 5800 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

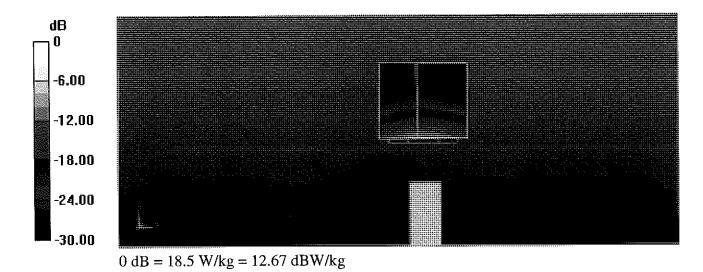
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 68.78 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 28.7 W/kg SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.11 W/kg Maximum value of SAR (measured) = 17.3 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 69.09 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 30.3 W/kg SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.16 W/kg Maximum value of SAR (measured) = 18.1 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 68.19 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 34.3 W/kg SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.22 W/kg Maximum value of SAR (measured) = 19.0 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 66.80 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 35.1 W/kg SAR(1 g) = 7.75 W/kg; SAR(10 g) = 2.15 W/kg Maximum value of SAR (measured) = 18.9 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 67.13 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 33.8 W/kg SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.12 W/kg Maximum value of SAR (measured) = 18.5 W/kg



Impedance Measurement Plot for Body TSL

<u>File Vie</u> v	v <u>C</u> hannel Sw <u>e</u> ep	Calibration	<u>Trace Scale Marker</u>	System <u>W</u> in	ndow <u>H</u> eip		
	*********				1;	5.200000 GHz	50,932 Ω
				$T \rightarrow \lambda$	2:	3.5474pF 5.250000 GHz	-8.6279 Ω 53.213 Ω
			-/X	イエ		7.4556 pF	-4.0661 Ω
			$- h/ \lambda$		- 34 3:	5.600000 GHz 6.7035 pF	58.125 Ω -4.2397 Ω
			17-4-	X	A 4	5,750000 GHz	60.292 Ω
			[]		>5:	64.987 pH 5.800008 GHz	2.3479 0 57.493 0
				1-57		5.800008 GH2 64.232 pH	2,3408 Ω
				~~ 7-	A		
			$ \land \checkmark $	$\sqrt{-1}$	//		
			\sim	\int	/		
	Ch 1 Avg = 20		and the second s	F			
Ch1:	Start 5.00000 GHz 🐭	2010.000		-		Stop	6.00000 GHz
1			1		1:	5. ≵ 00000 GH≥	-21.344 d8
5.00							25.981-48
0.00					3:	5.600000 GHz	-21.443 dB
				1	4:	5.750000 GHz	-20.383 d8
-5.00					4: 25:	5.750000 GHz 5 300000 GHz_	-20.383 dB -22 732 dB
-5.00							
-10.00							
					2.5	5300000 GHz_	
-10.00 -15.00 -20.00	Pr				2.5		
-10.00 -15.00 -20.00 -25.00	Be				2.5°	5300000 GHz_	
-10.00 -15.00 -20.00 -25.00 -30.00	Be				2.5°	5300000 GHz_	
-10.00 -15.00 -20.00 -25.00 -30.00 -35.00	P → → → → → → → → → → → → → → → → → → →				2.5°	5300000 GHz_	
-10.00 -15.00 -20.00 -25.00 -30.00 -35.00 -40.00	Ch 1 Avg = 20 Start 5.00000 GHz -				2.5°	5 \$00000 GH2	

DASY5 Validation Report for SAM Head

Date: 17.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1191

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5800 MHz Medium parameters used: f = 5200 MHz; σ = 4.55 S/m; ϵ_r = 36.2; ρ = 1000 kg/m³, Medium parameters used: f = 5800 MHz; σ = 5.28 S/m; ϵ_r = 34.9; ρ = 1000 kg/m³ Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.64, 5.64, 5.64) @ 5200 MHz, ConvF(4.96, 4.96, 4.96) @ 5800 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: SAM Head
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

SAM/Head/Top - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

dz=1.4mm Reference Value = 74.84 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 27.5 W/kg SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.34 W/kg Maximum value of SAR (measured) = 18.5 W/kg

SAM/Head/Top - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

dz=1.4mm Reference Value = 70.45 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 32.3 W/kg SAR(1 g) = 8.18 W/kg; SAR(10 g) = 2.33 W/kg Maximum value of SAR (measured) = 20.2 W/kg

SAM/Head/Mouth - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 76.86 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 29.3 W/kg SAR(1 g) = 8.37 W/kg; SAR(10 g) = 2.36 W/kg Maximum value of SAR (measured) = 19.8 W/kg

SAM/Head/Mouth - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 71.46 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 34.0 W/kg SAR(1 g) = 8.56 W/kg; SAR(10 g) = 2.37 W/kg

Maximum value of SAR (measured) = 21.3 W/kg

SAM/Head/Neck - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 74.71 V/m; Power Drift = 0.09 dB Peak SAR (extrapolated) = 28.8 W/kg

SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.36 W/kgMaximum value of SAR (measured) = 19.2 W/kg

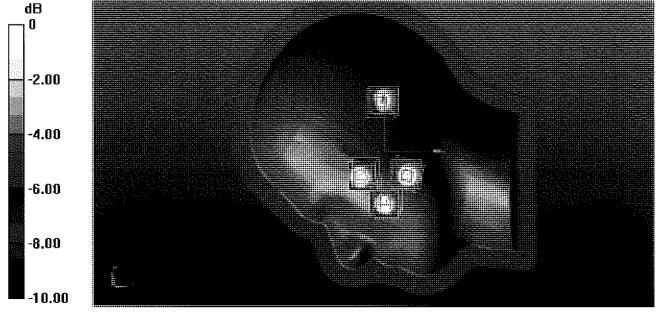
SAM/Head/Neck - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

dz=1.4mm Reference Value = 71.62 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 32.1 W/kg SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.26 W/kg Maximum value of SAR (measured) = 20.2 W/kg

SAM/Head/Ear - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 57.89 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 16.7 W/kg SAR(1 g) = 5.11 W/kg; SAR(10 g) = 1.78 W/kg Maximum value of SAR (measured) = 11.4 W/kg

SAM/Head/Ear - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 58.22 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 21.0 W/kg SAR(1 g) = 5.6 W/kg; SAR(10 g) = 1.92 W/kg Maximum value of SAR (measured) = 13.4 W/kg



0 dB = 11.4 W/kg = 10.57 dBW/kg

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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- Swiss Calibration Service

Accreditation No.: SCS 0108

Certificate No: EX3-3914_Feb19

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	PC Test

CALIBRATION	CERTIFICATE
Object	EX3DV4 - SN:3914
Calibration procedure(s)	QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7 Calibration procedure for dosimetric E-field probes
Calibration date:	February 19, 2019 02-26-2019
2	suments the traceability to national standards, which realize the physical units of measurements (SI). ncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been co	inducted in the closed laboratory facility: environment temperature (22 \pm 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	D	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
		L.	
Approved by:	Katja Pokovic	Technical Manager	A.K.
			Issued: February 20, 2019
This calibration certificate	e shall not be reproduced except in fu	ull without written approval of the labo	pratory.

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Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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- Swiss Calibration Service

Accreditation No.: SCS 0108

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Glossary: tissue simulating liquid TSL sensitivity in free space NORMx,y,z sensitivity in TSL / NORMx,y,z ConvF diode compression point DCP crest factor (1/duty_cycle) of the RF signal CF A, B, C, D modulation dependent linearization parameters φ rotation around probe axis Polarization ϕ 9 rotation around an axis that is in the plane normal to probe axis (at measurement center), Polarization 9 i.e., $\vartheta = 0$ is normal to probe axis

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 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 ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	0.46	0.41	0.44	± 10.1 %
DCP (mV) ^B	98.0	104.4	100.8	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	135.8	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		149.1		
		Z	0.00	0.00	1.00		130.4		
10352-	Pulse Waveform (200Hz, 10%)	X	11.50	82.25	17.46	10.00	60.0	±2.9 %	± 9.6 %
AAA		Y	13.06	84.85	18.88		60.0		
		Z	15.00	85.74	19.04		60.0		
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	85.61	17.12	6.99	80.0	± 1.7 %	± 9.6 %
AAA		Y	15.00	87.20	18.40		80.0		
		Z	15.00	86.88	18.11		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	85.07	15.18	3.98	95.0	± 1.1 %	± 9.6 %
AAA		Y	15.00	89.57	18.09		95.0		
		Z	15.00	87.22	16.52		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	0.82	65.05	7.38	2.22	120.0	± 1.2 %	± 9.6 %
AAA		Y	15.00	94.17	19.03		120.0		
		Z	15.00	84.14	13.59		120.0		
10387-	QPSK Waveform, 1 MHz	Х	0.56	60.35	7.26	0.00	150.0	± 2.8 %	± 9.6 %
AAA		Y	0.80	64.04	10.54		150.0]	
		Z	0.51	60.00	6.79		150.0		
10388-	QPSK Waveform, 10 MHz	Х	2.18	68.24	15.67	0.00	150.0	± 1.2 %	± 9.6 %
AAA		Y	2.41	70.06	16.91		150.0		
		Z	2.04	67.38	15.28		150.0		
10396-	64-QAM Waveform, 100 kHz	X	2.71	69.05	18.06	3.01	150.0	± 0.7 %	± 9.6 %
AAA		Y	3.50	74.05	20.22		150.0		
		Z	2.76	69.32	18.16		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.50	67.38	15.86	0.00	150.0	± 2.2 %	± 9.6 %
AAA		Υ	3.57	67.89	16.25		150.0]	
		Z	3.38	66.82	15.58		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.87	65.94	15.72	0.00	150.0	± 4.2 %	± 9.6 %
AAA		Y	4.84	65.99	15.74		150.0	1	
		Z	4.71	65.47	15.46		150.0		

Note: For details on UID parameters see Appendix

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

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

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	Т6
Х	42.5	324.17	36.82	9.95	0.55	5.06	0.00	0.49	1.01
Y	42.9	310.45	33.81	12.34	0.63	5.02	2.00	0.15	1.01
Z	39.7	301.66	36.55	9.75	0.75	5.05	0.45	0.44	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	0.5
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
	1

f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
6	55.5	0.75	21.24	21.24	21.24	0.00	1.00	± 13.3 %
13	55.5	0.75	18.06	18.06	18.06	0.00	1.00	± 13.3 %
750	41.9	0.89	10.00	10.00	10.00	0.54	0.82	± 12.0 %
835	41.5	0.90	9.50	9.50	9.50	0.50	0.86	± 12.0 %
1750	40.1	1.37	8.16	8.16	8.16	0.41	0.80	± 12.0 %
1900	40.0	1.40	7.80	7.80	7.80	0.40	0.84	± 12.0 %
2300	39.5	1.67	7.44	7.44	7.44	0.37	0.84	± 12.0 %
2450	39.2	1.80	7.13	7.13	7.13	0.39	0.86	± 12.0 %
2600	39.0	1.96	7.11	7.11	7.11	0.39	0.89	± 12.0 %
3500	37.9	2.91	6.99	6.99	6.99	0.25	1.20	± 13.1 %
3700	37.7	3.12	6.75	6.75	6.75	0.25	1.20	± 13.1 %
5250	35.9	4.71	5.19	5.19	5.19	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.73	4.73	4.73	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.90	4.90	4.90	0.40	1.80	± 13.1 %

Calibration Parameter Determined in Head Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

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

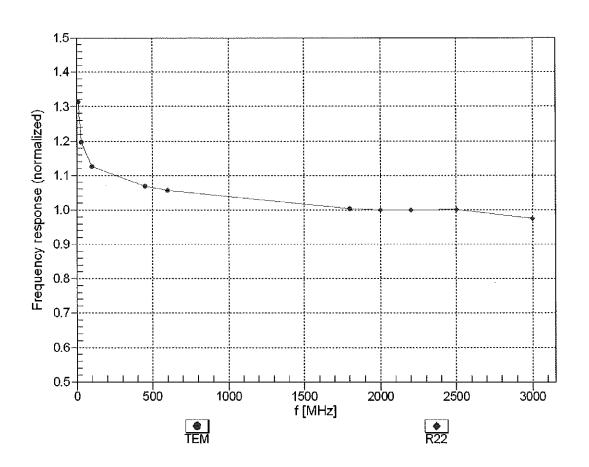
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	55.5	0.96	9.73	9.73	9.73	0.54	0.84	± 12.0 %
835	55.2	0.97	9.46	9.46	9.46	0.50	0.80	± 12.0 %
1750	53.4	1.49	7.89	7.89	7.89	0.38	0.84	± 12.0 %
1900	53.3	1.52	7.60	7.60	7.60	0.29	1.03	± 12.0 %
2300	52.9	1.81	7.43	7.43	7.43	0.38	0.84	± 12.0 %
2450	52.7	1.95	7.34	7.34	7.34	0.33	0.87	± 12.0 %
2600	52.5	2.16	7.15	7.15	7.15	0.26	0.97	± 12.0 %
3500	51.3	3.31	6.88	6.88	6.88	0.25	1.15	± 13.1 %
3700	51.0	3.55	6.58	6.58	6.58	0.30	1.15	± 13.1 %
5250	48.9	5.36	4.61	4.61	4.61	0.50	1,90	± 13.1 %
5600	48.5	5.77	3.92	3.92	3.92	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.05	4.05	4.05	0.50	1,90	± 13.1 %

Calibration Parameter Determined in Body Tissue Simulating Media

^c Frequency validity above 300 MHz of \pm 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to \pm 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 \pm 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to \pm 110 MHz.

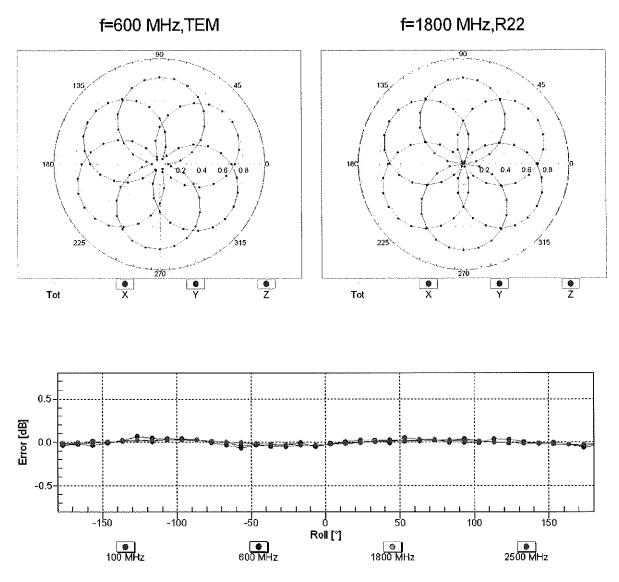
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to \pm 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. ^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

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



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

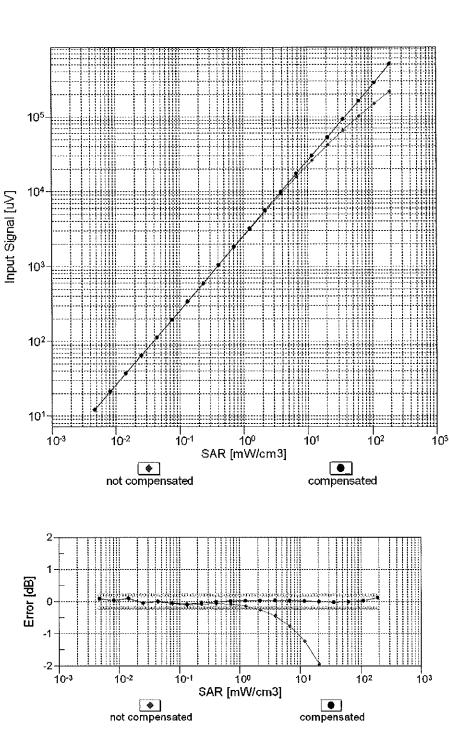
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)



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

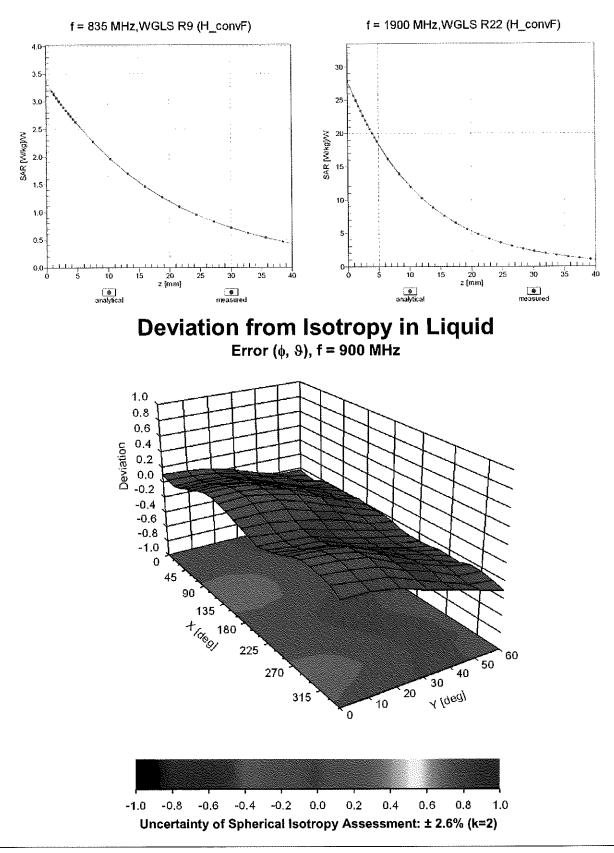
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

February 19, 2019



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

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



Conversion Factor Assessment

EX3DV4-SN:3914

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E (k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	±9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9,55	±9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	±9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	±9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	$\pm 9.6\%$
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10000	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10042	CAB	IS-91/EIA/TIA-553 FDD (FDMA, FMA-DQF3K, Flamate)	AMPS	0.00	$\pm 9.6\%$
10044	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10048		DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10049		UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	$\pm 9.6\%$
10058	DAC				
10058		EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM WLAN	6.52	±9.6%
10059		IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)		2.12	± 9.6 %
	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6%
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	±9.6%
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	±9.6%
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	±9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	±9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	±9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10105					

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10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	±9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	±9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	±9.6%
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±9.6%
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8,46	±9.6%
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	±9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	±9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	±9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	±9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	±9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	±9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	±9.6%
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	±9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	±9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	±9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	±9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	±9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	±9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	±9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG		LTE-FDD	5.72	±9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	$\pm 9.6\%$
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9,6%
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185		LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	$\pm 9.6\%$
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194		IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	±9.6%
10196		IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	$\pm 9.6\%$
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %

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10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	±9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	±9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	±9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	±9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	±9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	±9.6%
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6%
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10241		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6 %
10243		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6 %
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	±9.6 %
10252	CAF CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253		LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	±9.6 %
10255	CAF CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAA	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.20	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 10-QAM)	LTE-TDD	9.96	±9.6 % ±9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD LTE-TDD	10.08 9.34	± 9.6 % ± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.94	$\pm 9.6\%$ $\pm 9.6\%$
10255	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.96	±9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.97	$\pm 9.6\%$
10261	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD		
10202	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83 10.16	±9.6 % ±9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	$\pm 9.6\%$
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.00	± 9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	±9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	±9.6 %
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %
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10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	±9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	±9.6%
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	± 9.6 %
10303	ААА	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	± 9.6 %
10306	ААА	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WIMAX	14.67	± 9.6 %
10307	ААА	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WIMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WIMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	±9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	iDEN 1:6	IDEN	13.48	±9.6%
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	±9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	±9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	±9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	±9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426		IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)		8.41 8.28	$\pm 9.6\%$
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD		± 9.6 % ± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38 8.34	± 9.6 %
10432 10433	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
	AAC	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10434 10435	AAA AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
<u>10459</u> 10460		CDMA2000 (1xEV-DO, Rev. B, 3 carriers) UMTS-FDD (WCDMA, AMR)	CDMA2000	8.25	± 9.6 %
10460	AAA AAA	LTE-TDD (WCDMA, AMR)	UCDMA	2.39 7.82	± 9.6 %
10401		Subframe=2,3,4,7,8,9)	LIE-IDD	1.02	± 9.6 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.30	± 9.6 %
10463	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
10464	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10465	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
10466	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10467	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10474	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2.3,4,7,8,0)	LTE-TDD	8.32	± 9.6 %
10475	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10477	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
10478	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10479	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7,74	± 9.6 %
10480	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.18	± 9.6 %
10481	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	± 9.6 %
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	± 9.6 %
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	± 9.6 %
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.60	± 9.6 %
10488	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL	LTE-TDD	7.70	± 9.6 %
10489	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
10490	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
10.404		Subframe=2,3,4,7,8,9)			
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %

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10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	±9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.55	±9.6 %
		Subframe=2,3,4,7,8,9)			
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
40405		Subframe=2,3,4,7,8,9)		0.07	1000
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
10100		Subframe=2,3,4,7,8,9)		0.01	,.
10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.67	±9.6 %
	<u> </u>	Subframe=2,3,4,7,8,9)		0.40	
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.40	± 9.6 %
10499	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.68	± 9.6 %
10400		Subframe=2,3,4,7,8,9)		0.00	
10500	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL	LTE-TDD	7.67	± 9.6 %
	ļ	Subframe=2,3,4,7,8,9)			
10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.44	±9.6 %
10502	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.52	± 9.6 %
10502	AND	Subframe=2,3,4,7,8,9)		0.02	1 0.0 70
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL	LTE-TDD	7.72	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
10505	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
10505		Subframe=2,3,4,7,8,9)		0.04	± 9.0 %
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10507	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.36	±9.6 %
40500		Subframe=2,3,4,7,8,9)		0.55	
10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL	LTE-TDD	7.99	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.49	±9.6 %
40544		Subframe=2,3,4,7,8,9)	LTE-TDD	0.54	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)		8.51	I9.0 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10012		Subframe=2,3,4,7,8,9)			
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.42	± 9.6 %
		Subframe=2,3,4,7,8,9)		0.45	100%
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	±9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN WLAN	8,45 8.08	± 9.6 % ± 9.6 %
10523 10524	AAB AAB	IEEE 802.11a/h WIFI 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	± 9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10532 10533	AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN WLAN	8.29 8.38	<u>± 9.6 %</u> ± 9.6 %
10533	AAB	IEEE 802.11ac WiFI (20MHz, MCS8, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10034	I MAD			0.40	1 1 0.0 /0

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10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6%
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6 %
10540	AAB	IEEE 802.11ac WiFI (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	±9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	±9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	******	±9.6%
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)		8.49	±9.6%
10550	AAB		WLAN	8.37	± 9.6 %
10550		IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	± 9.6 %
	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±96%
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	±9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	±9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	±9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	±9.6%
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WIFI (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
10001	1.001	cycle)		0.25	
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
10000	/ / / /		W LAIN	0.45	1 9.0 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	
10000		cycle)	VVLAN	0.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty			100%
10007		cycle)	WLAN	8.00	± 9.6 %
10568		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	14/1 4 4 1		100%
10000	AAA		WLAN	8.37	± 9.6 %
40500					
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
40570					
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	±9.6 %
10774		cycle)			+ .
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6%
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9,6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty	WLAN	8.59	±9.6 %
	1	cycle)			
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	±96%
		cycle)	-		
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN	8.70	± 9.6 %
		cycle)			
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN	8.49	± 9.6 %
	1.2.2.1		* 1 km7 11 W	0.40	
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN	8.36	± 9.6 %
10010	1000	cycle)	** L./~\! N	0.00	
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN	8.76	± 9.6 %
10000	1000	cvcle)	¥¥ ⊑/*\IN	0.70	1 9.0 /0
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN	8.35	± 9.6 %
10301	10004		WLAN	0.30	19.0 %
10500		Cycle)	10/1 0.51		1000
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN	8.67	± 9.6 %
40500	+				
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	±9.6 %
	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10585					
10585 10586 10587	AAB AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN WLAN	8.49	± 9.6 % ± 9.6 %

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10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	±9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	<u>± 9.6 %</u>
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	±9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	±9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	±9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac Will (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10612	AAB	IEEE 802.11ac Will (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	± 9.6 %
		IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10614	AAB		WLAN	8.82	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616		IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)			
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	$\pm 9.6\%$
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	±9.6%
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±9.6%
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	±9.6 %
	1	IFFF 000 44 as MUEL (00Mile MCCO, 00pp duty ovoid)	JAREA NE	8.81	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN		
10635 10636	AAB	IEEE 802.11ac WIFI (80WIH2, MCS9, 90pc duty cycle)	WLAN	8.83	± 9.6 %
		IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle) IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN WLAN		± 9.6 % ± 9.6 %
10636 10637	AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle) IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.83	
10636 10637 10638	AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle) IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle) IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN WLAN	8.83 8.79	± 9.6 %
10636 10637 10638 10639	AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN WLAN WLAN	8.83 8.79 8.86	± 9.6 % ± 9.6 %
10636 10637 10638 10639 10640	AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85	± 9.6 % ± 9.6 % ± 9.6 %
10636 10637 10638 10639 10640 10641	AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 8.98 9.06	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10636 10637 10638 10639 10640 10641 10642	AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 8.98 9.06 9.06	$\begin{array}{c} \pm \ 9.6 \ \% \\ \pm \ 9.6 \ \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643	AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 8.98 9.06 9.06 8.89	$\begin{array}{c} \pm \ 9.6 \ \% \\ \pm \ 9.6 \ \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643 10643	AAC AAC AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 8.98 9.06 9.06 8.89 9.05	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643 10644 10645	AAC AAC AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 8.98 9.06 9.06 8.89 9.05 9.11	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643 10643 10645	AAC AAC AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 8.98 9.06 9.06 8.89 9.05 9.11 11.96	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643 10644 10645 10646	AAC AAC AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN ULAN WLAN ULAN	8.83 8.79 8.86 8.85 9.06 9.06 8.89 9.05 9.11 11.96	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643 10644 10645 10646 10647 10648	AAC AAC AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle) <td>WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN</td> <td>8.83 8.79 8.86 8.85 9.06 9.06 8.89 9.05 9.11 11.96 11.96 3.45</td> <td>$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$</td>	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.83 8.79 8.86 8.85 9.06 9.06 8.89 9.05 9.11 11.96 11.96 3.45	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10636 10637 10638 10639 10640 10641 10642 10643 10644 10645 10646	AAC AAC AAC AAC AAC AAC AAC AAC AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN ULAN WLAN ULAN ULAN	8.83 8.79 8.86 8.85 9.06 9.06 8.89 9.05 9.11 11.96	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$

EX3DV4-- SN:3914

February 19, 2019

10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %

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

Calibration Laboratory of Schmid & Partner

Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland BC MRA



S Schweizerischer Kalibrierdienst C Service suisse 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

Client PC Test

Certificate No: EX3-7357_Apr19

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7357	
Calibration procedure(s)	QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7 Calibration procedure for dosimetric E-field probes	۹
Calibration date:	April 24, 2019	
	nents the traceability to national standards, which realize the physical units of measurements (SI). ertainties 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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	AV K (-
			10 16 30
			Issued: April 24, 2019
This calibration certificate	e shall not be reproduced except in full	without written approval of the labo	pratory.

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst

- C Service suisse 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
NORMx,y,z	sensitivity in free space
ConvF	sensitivitý in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization 9	9 rotation around an axis that is in the plane normal to probe axis (at measurement center),
_	i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DACV surface to all a surplus surplus to the later of the later

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 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 ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) ²) ^A	0.37	0.48	0.41	± 10.1 %
DCP (mV) ^B	87.5	101.0	95.2	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	Х	0.00	0.00	1.00	0.00	175.5	± 2.7 %	± 4.7 %
		Y	0.00	0.00	1.00		162.7		
		Z	0.00	0.00	1.00		160.1	1	
10352-	Pulse Waveform (200Hz, 10%)	X	1.63	60.99	8.59	10.00	60.0	± 3.2 %	± 9.6 %
AAA		Y	15.00	88.78	20,10		60.0	1	
		Z	1.92	62,77	9.39	1	60.0	1	
10353-	Pulse Waveform (200Hz, 20%)	X	1.28	62.05	7.66	6.99	80.0	± 2,1 %	± 9.6 %
AAA		Y	15.00	92.12	20,60		80.0	1	
		Z	1.44	63.37	8.24		80.0	1	
10354-	Pulse Waveform (200Hz, 40%)	X	0.53	60.00	5.08	3.98	95.0	± 1.2 %	± 9.6 %
AAA		Y	15.00	98.74	22,38		95.0	1	
		Z	0.50	60.00	4.96		95.0	1	
10355-	Pulse Waveform (200Hz, 60%)	X	0.34	60.00	3.46	2.22	120.0	± 1.3 %	± 9.6 %
AAA		Y	15.00	122.09	31.59		120.0	1	
		Z	0.32	60.00	3.17		120.0		
10387-	QPSK Waveform, 1 MHz	X	0.47	60.00	5.85	0.00	150.0	± 3.4 %	± 9.6 %
AAA		Y	0.84	63.60	10,73		150.0	1	
		Z	0.47	60.00	5.64		150.0	1	
10388-	QPSK Waveform, 10 MHz	X	2.22	69.17	16.45	0.00	150.0	± 1.2 %	± 9.6 %
AAA		Y	2.39	69.28	16.48		150.0	1	
		Z	2.05	67.86	15.44		150.0	1	
10396-	64-QAM Waveform, 100 kHz	X	1.74	66.32	18.65	3.01	150.0	± 6.4 %	±9.6 %
AAA		Y	3.21	72.13	19.45		150.0	1	
		Z	2.50	68.64	18.00		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.50	67.46	16.21	0.00	150.0	± 2.5 %	± 9.6 %
AAA		Y	3.59	67.57	16.11		150.0		
		Z	3.40	67.11	15.75		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.79	65.80	15.93	0.00	150.0	±4.6 %	± 9.6 %
AAA		Y	4.92	65.80	15.71		150.0		
		Z	4.73	65.72	15.66	1	150.0	Ì]

Note: For details on UID parameters see Appendix

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

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

	C1 fF	C2 fF	α V ⁻¹	T1 ms.V ⁻²	T2 ms.V⁻¹	T3 ms	T4 V⁻²	T5 V ⁻¹	Т6
Х	37.3	299.85	40.64	5.98	0.77	5.00	0.00	0.00	1.02
Y	48.9	366.83	35.90	10.43	0.11	5.09	1.58	0.24	1.01
Z	37.8	294.77	38.42	5.12	0.55	5.04	0.00	0.43	1.01

Sensor Model Parameters

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	14.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
64	54.2	0.75	14.77	14.77	14.77	0.00	1.00	± 13.3 %
750	41.9	0.89	10.26	10.26	10.26	0.45	0.95	± 12.0 %
835	41.5	0.90	9.91	9.91	9.91	0.53	0.85	± 12.0 %
1750	40.1	1.37	8.69	8.69	8.69	0.35	0.80	± 12.0 %
1900	40.0	1.40	8.26	8.26	8.26	0.33	0.84	± 12.0 %
2300	39.5	1.67	7.70	7.70	7.70	0.33	0.85	± 12.0 %
2450	39.2	1.80	7.57	7.57	7.57	0.39	0.85	± 12.0 %
2600	39.0	1.96	7.31	7.31	7.31	0.40	0.80	± 12.0 %
5250	35.9	4.71	5.45	5.45	5.45	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.06	5.06	5.06	0.40	1.80	± 13.1 %

Calibration Parameter Determined in Head Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz. ^F At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to

⁶ At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. ⁶ Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

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

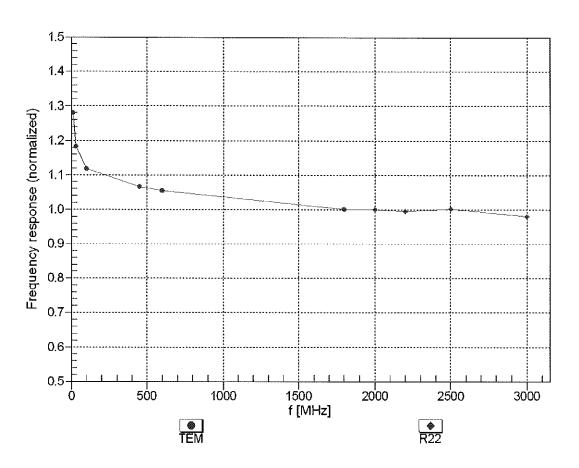
f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	55.5	0.96	10.19	10.19	10.19	0.37	0.96	± 12.0 %
835	55.2	0.97	9.95	9.95	9.95	0.47	0.80	± 12.0 %
1750	53.4	1.49	8.26	8.26	8.26	0.35	0.85	± 12.0 %
1900	53.3	1.52	7.93	7.93	7.93	0.32	0.90	± 12.0 %
2300	52.9	1.81	7.72	7.72	7.72	0.30	0.85	± 12.0 %
2450	52.7	1.95	7.59	7.59	7.59	0.35	0.86	± 12.0 %
2600	52.5	2.16	7.39	7.39	7.39	0.32	0.89	± 12.0 %
5250	48.9	5.36	4.61	4.61	4.61	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.03	4.03	4.03	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.15	4.15	4.15	0.50	1.90	± 13.1 %

Calibration Parameter Determined in Body Tissue Simulating Media

^c Frequency validity above 300 MHz of \pm 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to \pm 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 \pm 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to \pm 110 MHz.

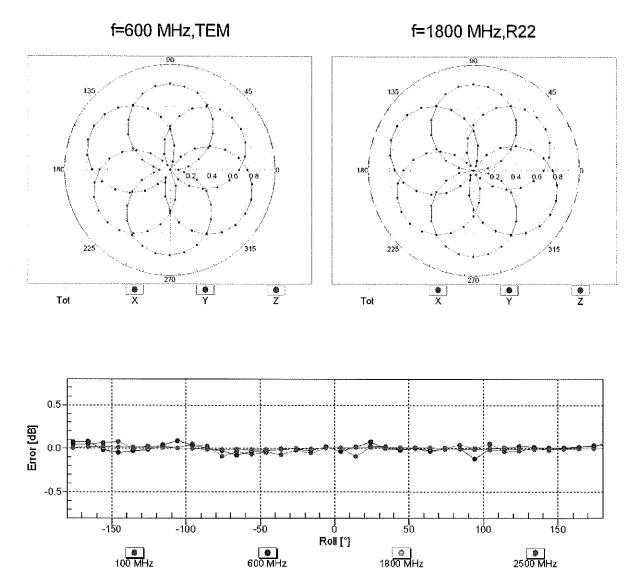
At frequencies below 3 GHz, the validity of tissue parameters (c and o) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (c and o) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. ^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



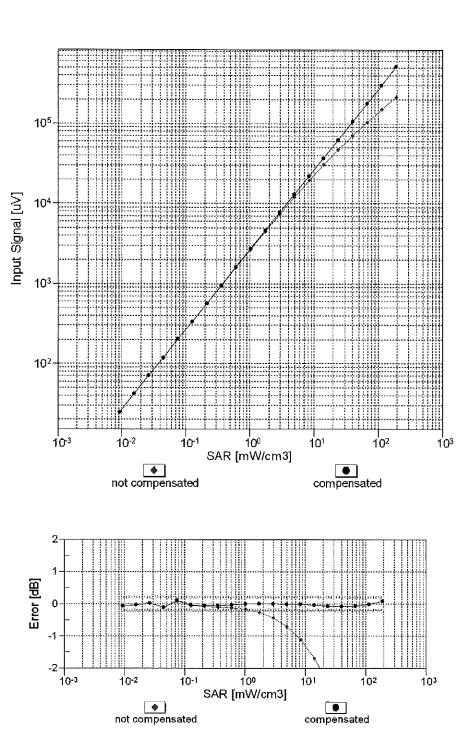
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

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



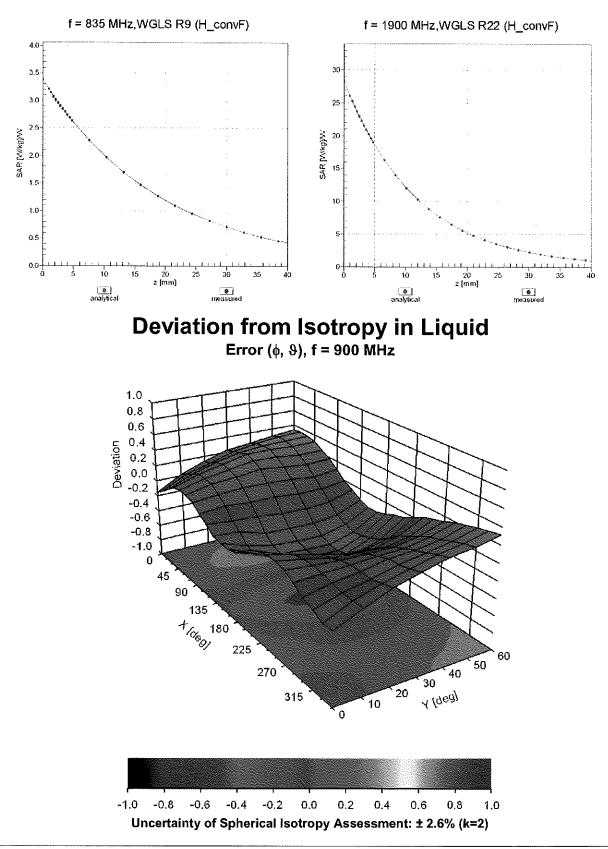
Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$

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



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

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



Conversion Factor Assessment

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR	Unc ^E
				(dB)	(k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA WLAN	2.91 1.87	± 9.6 % ± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	9.46	
10013 10021	CAB DAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps) GSM-FDD (TDMA, GMSK)	GSM	9.46	±9.6 % ±9.6 %
10021	DAC	GPRS-FDD (TDMA, GMSK) GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.59	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0) GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10024	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	±9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	±9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037		IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	±9.6%
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth CDMA2000	4.10	±9.6 % ±9.6 %
10039 10042	CAB CAB	CDMA2000 (1xRTT, RC1) IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	4.57 7.78	±9.6 %
10042	CAB	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10044	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	±9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	±9.6%
10069		IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)		10.56	$\pm 9.6\%$
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps) IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN WLAN	9.83 9.62	±9.6 % ±9.6 %
10072	CAB CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	10.30	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	±9.6 %
	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

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10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	±9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD		
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	6.53	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)		5.73	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 10-QAM)	LTE-FDD	6.35	± 9.6 %
10145	CAE	LTE-FDD (SC-FDMA, 100% RD, 3 MHZ, 04-QAM)	LTE-FDD	6.65	±9.6 %
10145		LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	±9.6 %
		LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	±9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6%
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	±9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	±9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9,6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)			± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.21	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	9.48	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	10.25	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	5.72	± 9.6 %
10170	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM) LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	6.52	± 9.6 %
10177	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 10-QAM)	LTE-FDD	5.73	±9.6%
10178	CAG		LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
		LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	±9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.6%
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.10	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	±9.6 %
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN		
		service, in the service of the servi		8.03	± 9.6 %

10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	±9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	±9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	±9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	±9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA ·	5.97	±9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9,48	±9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9,19	± 9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6%
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6%
10235					± 9.6 %
	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6 %
10243	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6%
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	±9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 10-QAM)	LTE-TDD	10.08	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 04-0400)	LTE-TDD	9.34	± 9.6 %
			LTE-TDD	9.98	± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)			
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	<u>±9.6%</u>
10262	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	$\pm 9.6\%$
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	±9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	±9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10291	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.50	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Pull Rate CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	$\pm 9.6\%$
			LTE-FDD	5.81	$\pm 9.6\%$
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)			
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	$\pm 9.6\%$
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

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10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL	WIMAX	12.57	± 9.6 %
		symbols)		12.01	1 3.0 %
10303	AAA	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15	WIMAX	15.24	± 9.6 %
		symbols)		13.24	1 9.0 %
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WIMAX	14.67	± 9.6 %
	1	symbols)	V V 11 V 1/ / / /	14.07	1. 5.0 %
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WIMAX	14.49	± 9.6 %
	1	symbols)		14.43	1.5.0 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18	WIMAX	14.58	± 9.6 %
10000		symbols)		14.00	± 9.0 %
10310		IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18	WIMAX	14.57	± 9.6 %
		symbols)		14.57	± 9.0 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	+06%
10313	AAA	IDEN 1:3	IDEN	6.06	± 9.6 %
10314	AAA	iDEN 1:6		10.51	± 9.6 %
10315	AAB		IDEN	13.48	± 9.6 %
10315		IEEE 802.11b WIFI 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz			
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10399	AAD		Generic	6.27	± 9.6 %
		IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	±9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	±9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9, Subframe Conf=4)			
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	±9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.14	± 9.6 %
		Long preambule)	**	0.14	1 3.0 78
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.19	± 9.6 %
		Short preambule)	** == / \ \	0,19	
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	0 22	+060/
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)		8.32	±9.6%
10424	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424		EEE 902.110 (IT Oreenlield, 72.2 Wops, 04-QAW)	WLAN	8.40	±9.6%
	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	±9.6%
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	±9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8,41	±9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	±9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	±9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)	_,_,00	1.52	10.070
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9,6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)			
10449	AAC	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD LTE-FDD	7.53	±9.6%
				7.51	±9.6 %
10449	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10451	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	±96%
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.82	±9.6 %
		Subframe=2,3,4,7,8,9)			
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.30	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.56	±9.6 %
		Subframe=2,3,4,7,8,9)			
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
40405		Subframe=2,3,4,7,8,9)		0.00	± 9.6 %
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	19.0%
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10400		Subframe=2,3,4,7,8,9)	C1C-100	0.07	10.0 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
	/	Subframe=2,3,4,7,8,9)			
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.56	±9.6 %
		Subframe=2,3,4,7,8,9)			
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
40.470		Subframe=2,3,4,7,8,9)		0.57	100%
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10473	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10475		Subframe=2,3,4,7,8,9)		1.02	1 0.0 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
10-11-1	1,0,0	Subframe=2,3,4,7,8,9)			
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
	ļ	Subframe=2,3,4,7,8,9)			
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
	+	Subframe=2,3,4,7,8,9)			100%
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.74	±9.6 %
10480		Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.18	± 9.6 %
10460	AAA	Subframe=2,3,4,7,8,9)		0.10	1 9.0 %
10481		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
10401		Subframe=2,3,4,7,8,9)			
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL	LTE-TDD	7.71	± 9.6 %
	1	Subframe=2,3,4,7,8,9)			
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.39	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.47	±9.6 %
		Subframe=2,3,4,7,8,9)			
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL	LTE-TDD	7.59	± 9.6 %
10400		Subframe=2,3,4,7,8,9)		0.00	± 9.6 %
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.38	I 9.0 %
40407		Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.60	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHZ, 64-QAM, 0L Subframe=2,3,4,7,8,9)		0.00	± 9.0 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL	LTE-TDD	7.70	± 9.6 %
10400	,~~L	Subframe=2,3,4,7,8,9)			_ 0.0 /0
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
	1	Subframe=2,3,4,7,8,9)	1	1	1

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10492 AVE LIFE-TDD 8.41 ± 9.6 % 10493 AAE LIFE-TDD 8.51 347.8 % 10444 AAF LIFE-TDD 8.55 ± 9.6 % 10444 AAF LIFE-TDD 8.57 ± 9.6 % 10444 AAF LIFE-TDD 8.57 ± 9.6 % 10445 AAF LIFE-TDD 8.52 ± 9.6 % 10446 AAF LIFE-TDD 8.52 ± 9.6 % 10447 AAA LIFE-TDD 8.54 ± 9.6 % 10447 AAA LIFE-TDD 8.54 ± 9.6 % 10448 AAA LIFE-TDD 8.64 HHz, 20-QAM, UL LIFE-TDD 8.64 10449 AAA LIFE-TDD 8.64 ± 9.6 % ± 9.6 % 10500 AAE LIFE-TDD 8.64 ± 9.6 % ± 9.6 % 10501 AAE LIFE-TDD 6.62 ± 9.6 % ± 9.6 % 10502 AAE LIFE-TDD 6.62 ± 9.6 % ± 9.6 %						
10483 AAE LITE-TDD 8.56 ± 9.6 % 10494 AAF LITE-TDD 8.56 ± 9.6 % 10494 AAF LITE-TDD 7.74 ± 9.6 % 10495 AAF LITE-TDD 8.77 ± 9.6 % 10495 AAF LITE-TDD 8.37 ± 9.6 % 10496 AAF LITE-TDD 8.37 ± 9.6 % 10497 AAA LITE-TDD 8.64 ± 9.6 % 10497 AAA LITE-TDD 8.64 ± 9.6 % 10498 AAA LITE-TDD 8.64 ± 9.6 % 10499 AAA LITE-TDD 8.66 ± 9.6 % 10499 AAA LITE-TDD 8.66 ± 9.6 % 10491 AAB LITE-TDD 8.66 ± 9.6 % 10501 AAB LITE-TDD 8.67 ± 9.6 % 10502 AAB LITE-TDD 8.74 ± 9.6 % 10502 AAB LITE-TDD 8.74 ± 9.6 %	10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.41	± 9.6 %
Subframe-2,3,4,7,8,9) LTE-TDD 7.74 4.9.6 % 10494 AF LTE-TDD 6,7.74 4.9.6 % 10495 AF LTE-TDD 6,7.74 4.9.6 % 10495 AF LTE-TDD 6,7.74 4.9.6 % 10496 AF LTE-TDD 6,5.74 1.9.6 % 10497 AA LTE-TDD 6,5.74 1.9.6 % 10498 AA LTE-TDD 6,5.74 1.9.6 % 10498 AA LTE-TDD 6,5.64 1.9.6 % 10498 AA LTE-TDD 6,6.67 1.9.6 % 10499 AA LTE-TDD 6,6.67 1.9.6 % 10500 AAB LTE-TDD 6,6.67 1.9.6 % 10501 AAB LTE-TDD 6,6.7 1.9.6 % 10502 AAB LTE-TDD 6,7.67 1.9.6 % 10503 AAE LTE-TDD 6,7.67 1.9.6 % 10504 AAE LTE-TDD 6,7.67 1.9.6 % <t< td=""><td>10493</td><td>AAE</td><td>LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL</td><td>LTE-TDD</td><td>8.55</td><td>± 9.6 %</td></t<>	10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.55	± 9.6 %
Subframe=2,3,4,7,8,9 Number 2,3,4,7,8,9 10495 AAF TE-TDD (Sc-FDMA, 50% RB, 20 MHz, 16-QAM, UL LTE-TDD (Sc-FDMA, 50% RB, 20 MHz, 64-QAM, UL LTE-TDD (Sc-FDMA, 100% RB, 14 MHz, 0FSK, UL LTE-TDD (Sc-FDMA, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD (Sc-FDMA, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD (Sc-FDMA, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD (Sc-FDMA, 100% RB, 34 MHz, QPSK, UL LTE-TDD (Sc-FDMA, 100% RB, 54 MHz, QPSK, UL LTE-TDD (Sc-FDMA, 100% RB, 10 MHz, 16-QAM, UL<						
10486 AAF LTE-TDD 8.37 ± 9.6 % 10486 AAF LTE-TDD 8.57 ± 9.6 % 10486 AAF LTE-TDD 8.54 ± 9.6 % 10487 AAA LTE-TDD 8.54 ± 9.6 % 10487 AAA LTE-TDD 8.54 ± 9.6 % 10488 AAA LTE-TDD 7.67 ± 9.6 % 10489 AAA LTE-TDD 8.40 ± 9.6 % 10499 AAA LTE-TDD 8.60 ± 9.6 % 10499 AAA LTE-TDD 8.64 ± 9.6 % 10499 AAA LTE-TDD 8.64 ± 9.6 % 10491 AAA LTE-TDD (5C-FDMA, 100% RB, 3 MHz, 64-QAM, UL LTE-TDD 7.67 ± 9.6 % 10501 AAB LTE-TDD (5C-FDMA, 100% RB, 3 MHz, 64-QAM, UL LTE-TDD 8.62 ± 9.6 % 10504 AAB LTE-TDD (5C-FDMA, 100% RB, 5 MHz, 64-QAM, UL LTE-TDD 7.72 ± 9.6 % 10505 AAE LTE-TDD (5C-FDMA, 100% RB, 5 MHz, 64-Q	10494			LTE-TDD	7.74	± 9.6 %
Subframe=2,3,4,7,9.9 LTE-TDD 6.54 29.6 % 10496 AF LTE-TDD (SC-FDM, 50% RB, 20 MHz, 64-0AM, UL LTE-TDD 7.67 29.6 % 10497 AA LTE-TDD (SC-FDM, 100% RB, 14 MHz, QPSK, UL LTE-TDD 7.67 29.6 % 10498 AA LTE-TDD (SC-FDM, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD 8.66 29.6 % 10499 AA LTE-TDD (SC-FDM, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD 7.67 29.6 % 10500 AB LTE-TDD (SC-FDM, 100% RB, 3 MHz, QPSK, UL LTE-TDD 7.67 29.6 % 10501 AB LTE-TDD (SC-FDM, 100% RB, 3 MHz, GA-QAM, UL LTE-TDD 8.44 29.6 % 10502 AB LTE-TDD (SC-FDM, 100% RB, 3 MHz, GA-QAM, UL LTE-TDD 7.72 2.9.6 % 10503 AE LTE-TDD (SC-FDM, 100% RB, 5 MHz, GPSK, UL LTE-TDD 7.72 2.9.6 % 10504 AE LTE-TDD (SC-FDM, 100% RB, 5 MHz, GA-QAM, UL LTE-TDD 8.51 ± 9.6 % 10505 AE LTE-TDD (SC-FDM, 100% RB, 5 MHz, GA-QAM, UL LTE-TDD 8.54 ± 9.6 %	10495	AAF		I TE-TDD	8.37	+96%
Studierame:2,3,4,7,8,9 Number of the second se			Subframe=2,3,4,7,8,9)			
10447 AAA LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK, UL LTE-TDD 7.67 ± 9.6 % 10488 AAA LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD 8.40 ± 9.6 % 10499 AAA LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 04-QAM, UL LTE-TDD 8.68 ± 9.6 % 10500 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL LTE-TDD 7.67 ± 9.6 % 10501 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL LTE-TDD 8.44 ± 9.6 % 10502 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL LTE-TDD 8.52 ± 9.6 % 10503 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL LTE-TDD 8.31 ± 9.6 % 10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL LTE-TDD 8.54 ± 9.6 % 10505 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 8.54 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 04-QAM, UL LTE-TDD 8.54 ± 9.6 % 10507 AAE LTE-TDD (SC-FDMA,	10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
Subframe23.47.8.9) The Top Car FDMA, 100% RB, 14 MHz, 16-QAM, UL LTE-TDD 8.40 ± 9.6 % 10499 AAA LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM, UL LTE-TDD 8.68 ± 9.6 % 10500 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 0PSK, UL LTE-TDD 8.68 ± 9.6 % 10500 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 0PSK, UL LTE-TDD 8.44 ± 9.6 % 10501 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL LTE-TDD 8.42 ± 9.6 % 10502 AAB LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL LTE-TDD 8.52 ± 9.6 % 10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL LTE-TDD 7.72 ± 9.6 % 10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL LTE-TDD 8.31 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 8.54 ± 9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 7.74 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100	10497				7.67	+96%
Image: Subframe:2,3,4,7,8,9) Image: Subframe:2,3,4,7,8,9) 10499 AAA LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM, UL LTE-TDD 8.68 ±9.6 % 10500 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL LTE-TDD 8.44 ±9.6 % 10501 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL LTE-TDD 8.44 ±9.6 % 10502 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 44-QAM, UL LTE-TDD 8.42 ±9.6 % 10503 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 20-SK, UL LTE-TDD 7.72 ±9.6 % 10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL LTE-TDD 8.31 ±9.6 % 10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL LTE-TDD 8.54 ±9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 0PSK, UL LTE-TDD 7.74 ±9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 0PSK, UL LTE-TDD 8.55 ±9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL LTE-TDD 8.55			Subframe=2,3,4,7,8,9)		1.01	. 3.0 /0
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Subframe=2,34,7,8,9 Charlenge Charlenge <thcharlenge< th=""></thcharlenge<>	10499				8.68	+96%
Subframe=2,3,4,7,8,9 Term of the state of t			Subframe=2,3,4,7,8,9)	LIL-IDD	0.00	1 3.0 70
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10502 AAB LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL LTE-TDD 8.52 ± 9.6 % 10503 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL LTE-TDD 7.72 ± 9.6 % 10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL LTE-TDD 8.31 ± 9.6 % 10505 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL LTE-TDD 8.54 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 8.36 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL LTE-TDD 8.36 ± 9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL LTE-TDD 8.36 ± 9.6 % 10508 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0PSK, UL LTE-TDD 8.55 ± 9.6 % 10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL LTE-TDD 8.56 ± 9.6 % 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL LTE-TDD 8.51 ± 9.6 % 10511 AAE LTE-TDD (10001	1000			8.44	±9.0 %
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10504 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL LTE-TDD 8.31 ± 9.6 % 10505 AAE LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL LTE-TDD 8.54 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 7.74 ± 9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 8.36 ± 9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL LTE-TDD 8.36 ± 9.6 % 10508 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL LTE-TDD 8.55 ± 9.6 % 10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL LTE-TDD 7.99 ± 9.6 % 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL LTE-TDD 8.51 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL LTE-TDD 8.51 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.45 ± 9.6 % 10511 AAF LTE-TDD	10505		Subframe=2,3,4,7,8,9)	LIE-IDD	1.12	±9.6 %
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Subframe=2,3,4,7,8,9) LTE-TDD C.7.4 ± 9.6 % 10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL LTE-TDD 7.74 ± 9.6 % 10507 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL LTE-TDD 8.36 ± 9.6 % 10508 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL LTE-TDD 8.55 ± 9.6 % 10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL LTE-TDD 8.55 ± 9.6 % 10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL LTE-TDD 7.99 ± 9.6 % 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL LTE-TDD 8.49 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.51 ± 9.6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.42 ± 9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD <td>10505</td> <td></td> <td></td> <td></td> <td>0.54</td> <td></td>	10505				0.54	
10506 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 0PSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 0PSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 0PSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 0PSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-Q	10000				8.54	±9.6%
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Subframe=2,3,4,7,8,9) LTE-TDD Stab LTE-TDD Stab 10508 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL LTE-TDD 8.55 ±9.6 % 10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL LTE-TDD 7.99 ±9.6 % 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL LTE-TDD 8.49 ±9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL LTE-TDD 8.49 ±9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL LTE-TDD 8.51 ±9.6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 0PSK, UL LTE-TDD 7.74 ±9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL LTE-TDD 8.42 ±9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.45 ±9.6 % 10515 AAA LEE 802.11b WiF1 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ±9.6 % 10516 AAA LEE 802.11b WiF1 2.4 GHz (DSSS, 5.5 Mbps, 99pc dut	10507					
10508 AAE LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 6.55 ± 9.6 % 10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.49 ± 9.6 % 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.49 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.51 ± 9.6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11a/h WiFi 5 GHz (O	10007		Subframe=2,3,4,7,8,9)	LIE-IDD	8.36	±9.6%
10509 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 7.99 ± 9.6 % 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.49 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.51 ± 9.6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 7.74 ± 9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 M	10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.55	±9.6 %
Subframe=2,3,4,7,8,9 LTE-TDD R.0 LTE-TDD R.0 LTE-TDD 10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL LTE-TDD 8.49 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL LTE-TDD 8.51 ± 9.6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL LTE-TDD 7.74 ± 9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL LTE-TDD 7.74 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.45 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL LTE-TDD 8.45 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802	10500				7.00	
10510 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.49 ± 9.6 % 10511 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.51 ± 9.6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 7.74 ± 9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA LEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.32 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 14 Mbps, 99pc duty	10000		Subframe=2,3,4,7,8,9)		7.99	± 9.6 %
10511 AAE LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.51 ± 9,6 % 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 7.74 ± 9,6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9,6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9,6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9,6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.58 ± 9,6 % 10517 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mpps, 99pc duty cycle) WLAN 1.58 ± 9,6 % 10516 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.23 ± 9,6 % 10517 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 14 Mbps, 99pc duty cycle) WLAN 8.23 ± 9,6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) <td>10510</td> <td>AAE</td> <td>LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL</td> <td>LTE-TDD</td> <td>8.49</td> <td>±9.6 %</td>	10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.49	±9.6 %
Subframe=2,3,4,7,8,9) LTE-TDD Control 10512 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD 7.74 ± 9.6 % 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAB IEEE 802.11a/n WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.33 ± 9.6 % 10520 AAB IEEE 802.11a/n WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/n WiFi 5 GHz (OFDM, 34 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 <td>10511</td> <td></td> <td></td> <td></td> <td>0.54</td> <td></td>	10511				0.54	
Subframe=2,3,4,7,8,9) Interaction Interaction Interaction 10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 44 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % <	10011				8.51	±9.6%
10513 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.42 ± 9.6 % 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10517 AAA IEEE 802.11a/h WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.06 ½ ± 9.6 % 10524 AAB <td>10512</td> <td>AAF</td> <td></td> <td>LTE-TDD</td> <td>7.74</td> <td>± 9.6 %</td>	10512	AAF		LTE-TDD	7.74	± 9.6 %
Subframe=2,3,4,7,8,9) LTE-TDD LTE-TDD LTE-TDD 10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.57 ± 9.6 % 10517 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 34 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10524 </td <td>10513</td> <td></td> <td></td> <td></td> <td>0.40</td> <td></td>	10513				0.40	
10514 AAF LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD 8.45 ± 9.6 % 10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.57 ± 9.6 % 10517 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10510 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10524 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN <t< td=""><td>10010</td><td>1 / 1 / 1</td><td></td><td></td><td>8.42</td><td>± 9.6 %</td></t<>	10010	1 / 1 / 1			8.42	± 9.6 %
10515 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.57 ± 9.6 % 10517 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10519 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10524 AAB IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) WLAN 8.27 <	10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
10516 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) WLAN 1.57 ± 9.6 % 10517 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10519 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10524 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.27 ± 9.6 % 10526 AAB IEEE 802.11ac W	10515				1.50	
10517 AAA IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) WLAN 1.58 ± 9.6 % 10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10519 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10524 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.27 ± 9.6 % 10525 AAB IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10526 AAB IEEE 802.11ac WiFi (20MHz			IEEE 802.110 WIFI 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)			
10518 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) WLAN 8.23 ± 9.6 % 10519 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) WLAN 8.39 ± 9.6 % 10520 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) WLAN 8.12 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10524 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10525 AAB IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10526 AAB IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) WLAN 8.42 ± 9.6 % 10527 AAB IEEE 802.11ac WiFi (20MHz, MCS3, 9			IEEE 802.11b Wir 12.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)		·	j
10519AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)WLAN8.12 $\pm 9.6 \%$ 10520AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)WLAN8.12 $\pm 9.6 \%$ 10521AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)WLAN8.12 $\pm 9.6 \%$ 10522AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)WLAN8.45 $\pm 9.6 \%$ 10522AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)WLAN8.45 $\pm 9.6 \%$ 10523AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)WLAN8.08 $\pm 9.6 \%$ 10524AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)WLAN8.27 $\pm 9.6 \%$ 10525AABIEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)WLAN8.36 $\pm 9.6 \%$ 10526AABIEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)WLAN8.42 $\pm 9.6 \%$ 10527AABIEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)WLAN8.42 $\pm 9.6 \%$ 10528AABIEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)WLAN8.36 $\pm 9.6 \%$ 10529AABIEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)WLAN8.36 $\pm 9.6 \%$ 10531AABIEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)WLAN8.43 $\pm 9.6 \%$ 10532AABIEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)WLAN8.43 $\pm 9.6 \%$ 10533AABIEEE 802.11ac WiFi (20						
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10521 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) WLAN 7.97 ± 9.6 % 10522 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) WLAN 8.45 ± 9.6 % 10523 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) WLAN 8.08 ± 9.6 % 10524 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.27 ± 9.6 % 10525 AAB IEEE 802.11a/h WiFi 20MHz, MCS0, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10526 AAB IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) WLAN 8.42 ± 9.6 % 10527 AAB IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) WLAN 8.21 ± 9.6 % 10528 AAB IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10529 AAB IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)			IEEE 802.11a/II WIFI 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)			
10522AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)WLAN7.511.5110523AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)WLAN 8.45 ± 9.6 %10524AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)WLAN 8.08 ± 9.6 %10524AABIEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)WLAN 8.27 ± 9.6 %10525AABIEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)WLAN 8.36 ± 9.6 %10526AABIEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)WLAN 8.42 ± 9.6 %10527AABIEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)WLAN 8.42 ± 9.6 %10528AABIEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)WLAN 8.36 ± 9.6 %10529AABIEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)WLAN 8.36 ± 9.6 %10529AABIEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)WLAN 8.36 ± 9.6 %10531AABIEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)WLAN 8.43 ± 9.6 %10532AABIEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)WLAN 8.43 ± 9.6 %10533AABIEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)WLAN 8.29 ± 9.6 %10533AABIEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)WLAN 8.38 ± 9.6 %			IEEE 802 11 a/1 WIFI 5 GHz (OFDIM, 16 Wibps, 99pc duty cycle)			
10523AABIEEE 802.11a/n WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)WLAN8.08 $\pm 9.6\%$ 10524AABIEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)WLAN8.08 $\pm 9.6\%$ 10525AABIEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)WLAN8.27 $\pm 9.6\%$ 10526AABIEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)WLAN8.36 $\pm 9.6\%$ 10526AABIEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)WLAN8.42 $\pm 9.6\%$ 10527AABIEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)WLAN8.21 $\pm 9.6\%$ 10528AABIEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)WLAN8.36 $\pm 9.6\%$ 10529AABIEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)WLAN8.36 $\pm 9.6\%$ 10531AABIEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)WLAN8.43 $\pm 9.6\%$ 10532AABIEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)WLAN8.43 $\pm 9.6\%$ 10533AABIEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)WLAN8.29 $\pm 9.6\%$ 10533AABIEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)WLAN8.38 $\pm 9.6\%$			IEEE 802.11a/it WIFLS GHZ (OFDM, 24 Mbps, 99pc duty cycle)			
10524 AAB IEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) WLAN 8.27 ± 9.6 % 10525 AAB IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) WLAN 8.27 ± 9.6 % 10526 AAB IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10526 AAB IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) WLAN 8.42 ± 9.6 % 10527 AAB IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) WLAN 8.21 ± 9.6 % 10528 AAB IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10529 AAB IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 A						
10525AABIEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)WLAN 8.36 ± 9.6 %10526AABIEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)WLAN 8.42 ± 9.6 %10527AABIEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)WLAN 8.42 ± 9.6 %10528AABIEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)WLAN 8.21 ± 9.6 %10529AABIEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)WLAN 8.36 ± 9.6 %10529AABIEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)WLAN 8.36 ± 9.6 %10531AABIEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)WLAN 8.43 ± 9.6 %10532AABIEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)WLAN 8.43 ± 9.6 %10533AABIEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)WLAN 8.38 ± 9.6 %10533AABIEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)WLAN 8.38 ± 9.6 %			IEEE 802.11a/h WIEE 5 CHT (OFDM, 48 Mbps, 9900 duty cycle)			
10526 AAB IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) WLAN 8.42 ± 9.6 % 10527 AAB IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) WLAN 8.42 ± 9.6 % 10528 AAB IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) WLAN 8.21 ± 9.6 % 10529 AAB IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %						
10527 AAB IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) WLAN 8.21 ± 9.6 % 10528 AAB IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10529 AAB IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %						
10528 AAB IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10529 AAB IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %			IEEE 802 11ac WiFi (20MHz, MCS2, 90pc duty cycle)			
10529 AAB IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) WLAN 8.36 ± 9.6 % 10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %			IFEE 802.11ac Will (20MHz, WOS2, 9900 duty cycle)			
10531 AAB IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) WLAN 8.43 ± 9.6 % 10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %						
10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 % 10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %						
10533 AAB IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) WLAN 8.38 ± 9.6 %			IFEE 802 11ac WiFi (20MHz, MCS7, 99pc duty cycle)			· · · · · · · · · · · · · · · · · · ·
			IEEE 802.11ac WiFi (20MHz, MCOS, 99pc duty cycle)			
		1				
		1	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.38	±9.6 %

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10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6 %
10536	AAB	IEEE 802.11ac WIFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6 %
10537	AAB	IEEE 802.11ac WIFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	±9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	±9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.49	±9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	±9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	±9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	±9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	±9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	±9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WIFI (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
10004		cycle)	VVL/KIN	0.25	1 9.0 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
10000	1 1111	cvcle)	VVLAIN	0.45	1 5.0 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	± 9.6 %
10000	1000	cycle)	VVL/AIN	0.15	1 5.0 %
10567		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
10007			VVLAN	0.00	19.0 %
10568		cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	± 9.6 %
10000			WLAN	0.37	I 9.0 %
40500		cycle)		0.10	+069/
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
40570					1069
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
40574			WLAN	1.00	100%
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)			
10572				1.99	± 9.6 %
	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN WLAN	1.99 1.98	± 9.6 % ± 9.6 %
10574	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN WLAN WLAN	1.99 1.98 1.98	± 9.6 % ± 9.6 % ± 9.6 %
	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty	WLAN WLAN	1.99 1.98	± 9.6 % ± 9.6 %
10574 10575	AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59	$\begin{array}{r} \pm \ 9.6 \ \% \\ \pm \ 9.6 \ \% \end{array}$
10574	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN WLAN WLAN	1.99 1.98 1.98	± 9.6 % ± 9.6 % ± 9.6 %
10574 10575 10576	AAA AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60	$\begin{array}{c} \pm 9.6 \% \\ \end{array}$
10574 10575	AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59	$\begin{array}{r} \pm \ 9.6 \ \% \\ \pm \ 9.6 \ \% \end{array}$
10574 10575 10576 10577	AAA AAA AAA AAA AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576	AAA AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60	$\begin{array}{c} \pm 9.6 \% \\ \end{array}$
10574 10575 10576 10577 10578	AAA AAA AAA AAA AAA AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577	AAA AAA AAA AAA AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578	AAA AAA AAA AAA AAA AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580 10581	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76 8.35	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580 10581	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76 8.35	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580 10581	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76 8.35	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580 10581	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76 8.35 8.67	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580 10581 10582 10583	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76 8.35 8.67 8.59	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10574 10575 10576 10577 10578 10579 10580 10581 10582 10583	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59 8.60 8.70 8.49 8.36 8.76 8.35 8.67 8.59	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$

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10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFI (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFI (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9,6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFI (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WIFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WIFI (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8,98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN		±9.6%
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	9.11	$\pm 9.6\%$
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)		11.96	$\pm 9.6\%$
10648	AAA	CDMA2000 (1x Advanced)	LTE-TDD	11.96	±9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	CDMA2000	3.45	±9.6%
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±96%
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	±9.6%
	r + 15-2		LTE-TDD	6.96	± 9.6 %

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10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	±9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	±9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	±9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	±9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	±9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	±9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	±9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	±9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	±9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	± 9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.83	±9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)	WLAN	8.26	± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)	WLAN	8.28	±9.6%
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10689	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)	WLAN	8.55	±9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	WLAN	8.25	±9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)	WLAN	8.29	±9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)	WLAN	8.25	±9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)	WLAN	8.57	±96%
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN	8.78	±9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)	WLAN	8.91	±9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	WLAN	8.56	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)	WLAN	8.69	± 9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)	WLAN	8.66	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.67	± 9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10714	AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.26	$\pm 9.6\%$
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)	WLAN	8.30	±9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)	WLAN	8.48	$\pm 9.6\%$
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)	WLAN	8.24	$\pm 9.6\%$
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS0, 30pc duty cycle)	WLAN	8.87	± 9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)	WLAN		
10722	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)		8.55	±9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	$\pm 9.6\%$
10724	AAA	IEEE 802.11ax (80MHz, MCSS, 90pc duty cycle)	WLAN MILAN	8.90	± 9.6 %
10725	AAA		WLAN	8.74	±9.6%
10726	AAA	IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle)	WLAN	8.72	±9.6%
10/2/	A	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	±9.6 %

10729 AAA IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle) WLAN 8.64 ± 10730 AAA IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle) WLAN 8.67 ± 10731 AAA IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle) WLAN 8.42 ± 10732 AAA IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle) WLAN 8.46 ±	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10730 AAA IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle) WLAN 8.67 ± 10731 AAA IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle) WLAN 8.42 ± 10732 AAA IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle) WLAN 8.46 ±	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10731 AAA IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle) WLAN 8.42 1 10732 AAA IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle) WLAN 8.46 1	29.6 % 29.6 % 29.6 % 29.6 %
10732 AAA IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle) WLAN 8.46 ±	± 9.6 % ± 9.6 % ± 9.6 %
	± 9.6 % ± 9.6 %
	:9.6 %
10733 AAA IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle) WLAN 8.40 ±	
10734 AAA IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle) WLAN 8.25 ±	
10735 AAA IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle) WLAN 8.33 ±	±9.6 %)
10736 AAA IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle) WLAN 8.27 d	£ 9.6 %
10737 AAA IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle) WLAN 8.36 ±	t 9.6 %
	£ 9.6 %
10739 AAA IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle) WLAN 8.29	£ 9.6 %
	£ 9.6 %
10741 AAA IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle) WLAN 8.40 d	£ 9.6 %
10742 AAA IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle) WLAN 8.43 4	£9.6 %
10743 AAA IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle) WLAN 8.94 ±	£ 9.6 %
10744 AAA IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle) WLAN 9.16	£ 9.6 %
10745 AAA IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle) WLAN 8.93 ±	£ 9.6 %
	£9.6 %
10747 AAA IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle) WLAN 9.04 ±	£ 9.6 %
10748 AAA IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle) WLAN 8.93 4	£9.6 %
10749 AAA IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle) WLAN 8.90 ±	£ 9.6 %
10750 AAA IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle) WLAN 8.79 ±	£ 9.6 %
10751 AAA IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle) WLAN 8.82 ±	£ 9.6 %
10752 AAA IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle) WLAN 8.81 4	£ 9.6 %
10753 AAA IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle) WLAN 9.00 3	£ 9.6 %
10754 AAA IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle) WLAN 8.94 4	£9.6 %
10755 AAA IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle) WLAN 8.64 ±	£9.6 %
10756 AAA IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle) WLAN 8.77 ±	±9.6 %
10757 AAA IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle) WLAN 8.77 4	± 9.6 %
10758 AAA IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle) WLAN 8.69 3	£ 9.6 %
	± 9.6 %
10760 AAA IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle) WLAN 8.49	± 9.6 %
10761 AAA IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle) WLAN 8.58	± 9.6 %
10762 AAA IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle) WLAN 8.49	± 9.6 %
10763 AAA IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle) WLAN 8.53	± 9.6 %
10764 AAA IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle) WLAN 8.54 ±	± 9.6 %
	± 9.6 %
10766 AAA IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle) WLAN 8.51	± 9.6 %

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

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





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

BN 2019

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

PC Test Client

Certif						

CALIBRATION CERTIFICATE

Object

EX3DV4 - SN:7406

Calibration procedure(s)

QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7 Calibration procedure for dosimetric E-field probes

Calibration date:

May 16, 2019

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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check; Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
:			Millese
Approved by:	Katja Pokovic	Technical Manager	Carra
			Aut
			Issued: May 16, 2019
This calibration certificate	shall not be reproduced except in full	without written approval of the lab	oratory.

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





Schweizerischer Kalibrierdienst S

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Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: SCS 0108

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

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization 9	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

- 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 IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from handb) held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices C) 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 $\vartheta = 0$ (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 ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	0.46	0.43	0.45	± 10.1 %
DCP (mV) ^B	102.8	102.2	100.4	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	C	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	182.0	± 2.7 %	± 4.7 %
		Y	0.00	0.00	1.00	0.00	172.4	- 2.1 70	1 4.1 70
		Z	0.00	0.00	1.00		174.6	1	
10352-	Pulse Waveform (200Hz, 10%)	X	6.76	76.02	14.93	10.00	60.0	± 2,7 %	± 9.6 %
AAA		Y	6.25	75.48	14.76		60.0		1 2 0.0 70
		Z	15.00	84.32	17.62		60.0	-	
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	85.05	16.36	6.99	80.0	± 1.9 %	± 9.6 %
AAA		Y	15.00	85.57	16.70		80.0		± 0.0 /0
		Z	15.00	85.96	16.90	1	80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	83.48	13.87	3.98	95.0	± 1.3 %	± 9.6 %
AAA		Y	15.00	88.48	16.53		95.0		- 0.0 %
		Z	15.00	85.80	15.05		95.0	1	
10355-	Pulse Waveform (200Hz, 60%)	Х	0.28	60.00	4.49	2.22	120.0	± 1.3 %	± 9.6 %
AAA		Y	15.00	95.23	18.20		120.0	,•	
		Z	0.39	62.12	5.82	ĺ	120.0		
10387-	QPSK Waveform, 1 MHz	X	0.46	60.00	5.77	0.00	150.0	± 3.7 %	± 9.6 %
AAA		Y	14.25	443.18	61,66		150.0		
		Z	0.48	60.00	6.06	1	150.0		
10388-	QPSK Waveform, 10 MHz	Х	2.03	67.70	15.44	0.00	150.0	± 1.2 %	± 9.6 %
AAA		Y	2.30	72.35	18.27		150.0		
		Z	2.07	67.89	15.68		150.0		
10396-	64-QAM Waveform, 100 kHz	X	2.49	68.06	17.57	3.01	150.0	± 1.6 %	± 9.6 %
AAA		Y	1.98	66.67	17.49		150.0		
		Z	2.52	68.32	17.86		150.0		
10399-	64-QAM Waveform, 40 MHz	Х	3.39	67.06	15.71	0.00	150.0	± 2.2 %	±9.6 %
AAA		Y	3.39	68.23	16.67		150.0		
1		Z	3.40	67.01	15.79		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	Х	4.70	65.74	15.61	0.00	150.0	± 4.1 %	± 9.6 %
AAA		Υ	4.47	66.54	16.20		150.0		
		Z	4.70	65.63	15.63		150.0		

Note: For details on UID parameters see Appendix

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

^A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required. ^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the

	C1 fF	C2 fF	α V ¹	T1 ms.V ⁻²	T2 ms.V ^{~1}	T3 ms	T4 V⁻²	T5 V ⁻¹	T6
<u>X</u>	34.8	265.14	36.82	6.17	0.37	5.06	0.00	0.44	1.01
Υ	19.8	147.90	35.69	7.11	0.37	5.03	0.00	0.19	1.00
Ζ	35.4	271.85	37.42	5.60	0.38	5.06	0.15	0.41	1.00

Sensor Model Parameters

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	27.5
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

f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
30	55.0	0.75	16.10	16.10	16.10	0.00	1.00	± 13.3 %
750	41.9	0.89	10.26	10.26	10.26	0.44	0.93	± 12.0 %
835	41.5	0.90	9.78	9.78	9.78	0.44	0.91	± 12.0 %
1750	40.1	1.37	8.57	8.57	8.57	0.39	0.80	± 12.0 %
1900	40.0	1.40	8.18	8.18	8.18	0.39	0.80	± 12.0 %
2300	39.5	1.67	8.06	8.06	8.06	0.33	0.87	± 12.0 %
2450	39.2	1.80	7.67	7.67	7.67	0.37	0.87	± 12.0 %
2600	39.0	1.96	7.44	7.44	7.44	0.40	0.88	± 12.0 %
5250	35.9	4.71	5.54	5.54	5.54	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.94	4.94	4.94	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.23	5.23	5.23	0.40	1.80	± 13.1 %

Calibration Parameter Determined in Head Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to \pm 110 MHz. ^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to

measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of

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

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	55.5	0.96	10.05	10.05	10.05	0.50	0.80	± 12.0 %
835	55.2	0.97	9.78	9.78	9.78	0.40	0.93	± 12.0 %
1750	53.4	1.49	8.13	8.13	8.13	0.43	0.80	± 12.0 %
1900	53.3	1.52	7.95	7.95	7.95	0.38	0.85	± 12.0 %
2300	52.9	1.81	7.76	7.76	7.76	0.44	0.85	± 12.0 %
2450	52.7	1.95	7.54	7.54	7.54	0.37	0.88	± 12.0 %
2600	52.5	2.16	7.47	7.47	7.47	0.25	1.05	± 12.0 %
5250	48.9	5.36	5.08	5.08	5.08	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.37	4.37	4.37	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.53	4.53	4.53	0.50	1.90	± 13.1 %

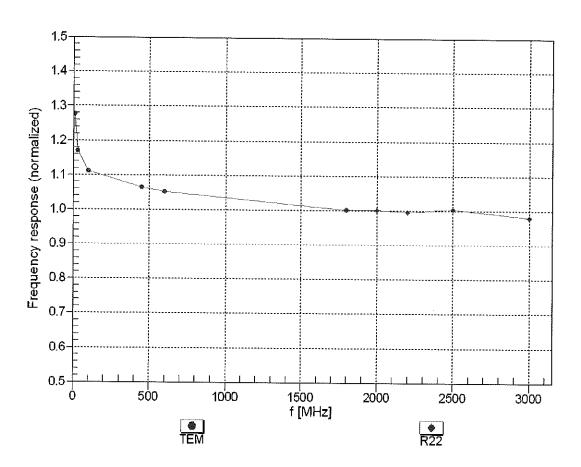
Calibration Parameter Determined in Body Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

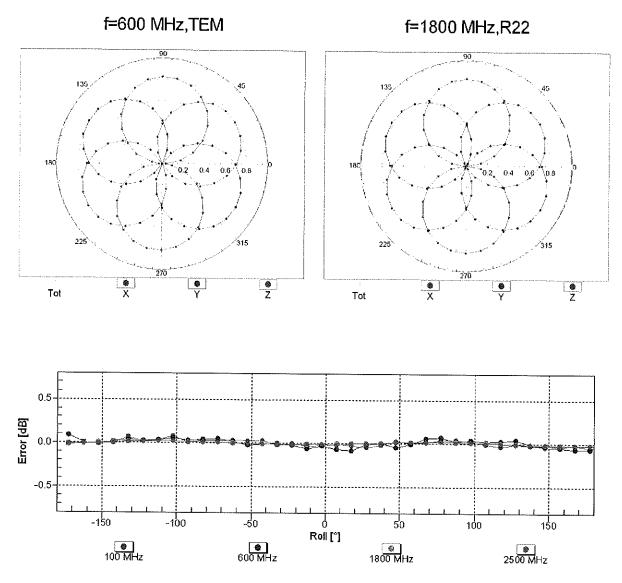
the ConvF uncertainty for indicated target tissue parameters. ⁶ Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than \pm 1% for frequencies below 3 GHz and below \pm 2% for frequencies between 3-6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

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

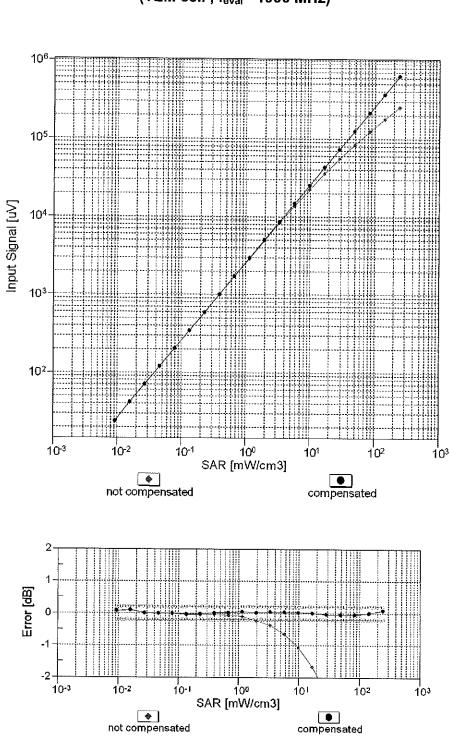
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)



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

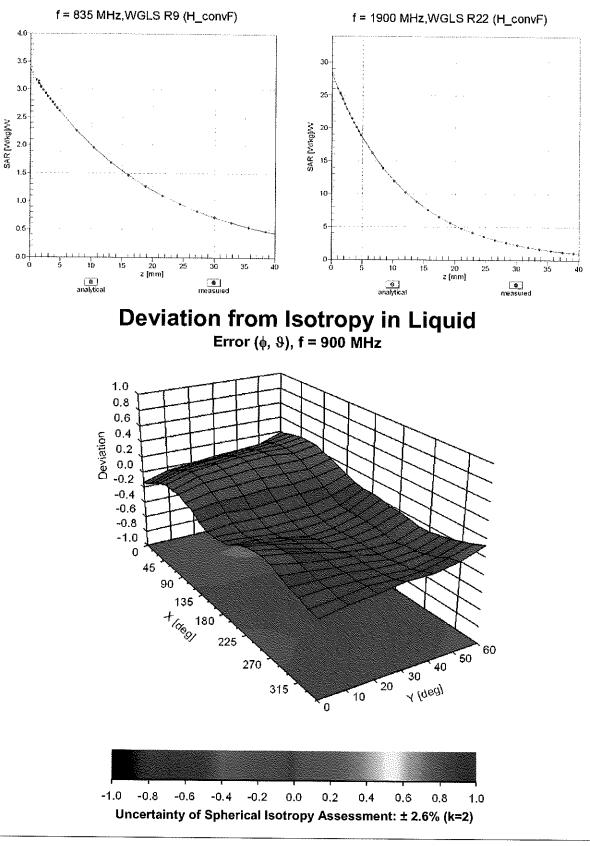
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

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



Conversion Factor Assessment

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR	Unc ^t
				(dB)	(k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth Bluetooth	5.30 1.87	± 9.6 % ± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3) IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.07	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10033 10034		IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	4.53	± 9.6 %
10034	CAA CAA	IEEE 802.15.1 Bluetooth (Pl/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10033	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10042	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	±9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)		10.56	± 9.6 %
10071	CAB	IEEE 802.11g WIFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83 9.62	±9.6 % ±9.6 %
10072		IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps) IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN WLAN	9.02	$\pm 9.6\%$
10073	CAB CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	10.30	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10071	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	$\pm 9.6\%$
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN		
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)		8.46	± 9.6 %
10117	CAC	LEE 002.1 m (HT Greenneid, 155 Mpps, 64-QAM)	WLAN	8.15	± 9.6 %
10118		IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)			
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.42	± 9.6 %
10151	CAG		LTE-FDD	6.60	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
		LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	±9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	±9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)		and the second se	±9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	5.46	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.21	± 9.6 %
10169	CAE		LTE-FDD	6.79	±9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	·	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	±9.6 %
	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10175		LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	±9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)			
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	5.72	±9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.52	± 9.6 %
10184	CAE	TE-FDD (SC-FDMA 1 PR 2 ML- OPOK)	LTE-FDD	6.50	±9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10185		LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.6 %
	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	±9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10193		IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10193 10194	CAC				20.070
	CAC CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-OAM)	and the second sec		
10194	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10194 10195 10196	CAC CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM) IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN WLAN	8.21 8.10	± 9.6 % ± 9.6 %
10194 10195 10196 10197	CAC CAC CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM) IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK) IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN WLAN WLAN	8.21 8.10 8.13	± 9.6 % ± 9.6 % ± 9.6 %
10194 10195 10196	CAC CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM) IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN WLAN	8.21 8.10	± 9.6 % ± 9.6 %

			1		
10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	±9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10240		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10243		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QF3R)	LTE-TDD	10.06	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 10-QAM)	LTE-TDD	10.06	± 9.6 %
		LTE-TDD (SC-FDMA, 30% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10246	CAC		LTE-TDD	9.91	± 9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	10.09	± 9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)			$\pm 9.6\%$
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257		LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	±9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	±9.6 %
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	±9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	± 9,6 %
10277	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10279	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10291		CDMA2000, RC3, SO35, Full Rate	CDMA2000	3.39	± 9.6 %
10292	AAB				
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	$\pm 9.6\%$
	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49 5.81	± 9.6 % ± 9.6 %
10295				< 5 X 1	.
10295 10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD		
10295		LTE-FDD (SC-FDMA, 50% RB, 20 MHZ, QPSK) LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD LTE-FDD	5.72 6.39	± 9.6 % ± 9.6 %

10200					
10300 10301	AAD AAA	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10302		IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX		± 9.6 %
10002	1 ~~~~	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	10/04 A X	40.50	
10304	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX WIMAX		± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15	WIMAX	12.03 12.57 12.52 11.86 15.24 14.67 14.49 14.46 14.57 6.06 10.51 13.48 1.71 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 8.36 0 3.76 0 3.77 0 5.22 7.82 8.54 1.54 8.23 8.54 1.54 8.23 8.41 8.42 8.41 8.42 8.41 8.42 8.38 8.34	± 9.6 %
		symbols)			± 9.6 %
10306	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WIMAX	14.67	± 9.6 %
		symbols)		14.07	1 9.0 %
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WIMAX	14 49	± 9.6 %
		symbols)			± 0.0 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	±9.6 %
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18	WIMAX		± 9.6 %
10010		symbols)			
10310	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18	WIMAX	14.57	± 9.6 %
10044		symbols)			
10311 10313	AAD AAA	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD		± 9.6 %
10313		iDEN 1:3 iDEN 1:6	IDEN	***	± 9.6 %
10314	AAA		IDEN		±9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN		± 9.6 %
10317	AAC	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle) IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN		± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	WLAN		± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic		± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic		± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic		± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic		± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic Generic		± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic		± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic		±9.6 % ±9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic		
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN		<u>±9.6 %</u> ±9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN		± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN		± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000		± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000		± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000		± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD		±9.6 %
		Subframe=2,3,4,7,8,9, Subframe Conf=4)			
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.14	± 9.6 %
10419	AAA	Long preambule)			
10415	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	±9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)			
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN		± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN		± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN		± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN		± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN		± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	WLAN LTE-FDD		± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD		± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD		$\pm 9.6\%$
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD		±9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	<u>±9.6 %</u>
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)		1.02	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10448					
10448 10449 10450	AAC AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.51	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63 6.62 6.55 8.25 2.39 7.82 8.30 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.74 8.18 8.45 7.71 8.39 8.47 7.59 8.38	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA		± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000		± 9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000		± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA		± 9.6 %
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
40460		Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8 30	± 9.6 %
10462	AAA	Subframe=2,3,4,7,8,9)		8.63 6.62 6.55 8.25 2.39 7.82 8.30 8.56 7.82 8.32 8.57 7.82 8.32 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.74 8.18 8.45 7.71 8.39 8.47 7.59	19.0 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8 56	± 9.6 %
10400		Subframe=2,3,4,7,8,9)		0.00	2 0.0 /0
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10404	1,0,00	Subframe=2,3,4,7,8,9)			,
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
10100		Subframe=2,3,4,7,8,9)			
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
		Subframe=2,3,4,7,8,9)		1	
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL	LTE-TDD	7.82	±9.6 %
		Subframe=2,3,4,7,8,9)			
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.63 6.62 6.55 8.25 2.39 7.82 8.30 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.74 8.18 8.45 7.71 8.39 8.47 7.59 8.38 8.60	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10.1001	<u> </u>	Subframe=2,3,4,7,8,9)		0.00	1000
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.63 6.62 6.55 8.25 2.39 7.82 8.30 8.56 7.82 8.32 8.57 7.82 8.32 8.56 7.82 8.32 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.74 8.39 8.45 7.71 8.39 8.47 7.59 8.31	± 9.6 %
40470	-	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL	LTE-TDD	0 5 7	± 9.6 %
10472	AAE	Subframe=2,3,4,7,8,9)		0,07	1 9.0 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10475		Subframe=2,3,4,7,8,9)		1.02	1 2 0.0 70
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			1
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10.100		Subframe=2,3,4,7,8,9)		0.40	<u> </u>
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.18	± 9.6 %
10494	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8 4 5	± 9.6 %
10481		Subframe=2,3,4,7,8,9)		0.40	± 9.0 %
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL	LTE-TDD	7 71	± 9.6 %
10402	700	Subframe=2,3,4,7,8,9)			
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL	LTE-TDD	6.55 8.25 2.39 7.82 8.30 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.74 8.18 8.45 7.71 8.39 8.47 7.59 8.38 8.60	± 9.6 %
		Subframe=2,3,4,7,8,9)		8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.56 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.82 8.32 8.57 7.74 8.18 8.45 7.71 8.39 8.47	
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.47	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL	LTE-TDD	7.59	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.38	± 9.6 %
	_	Subframe=2,3,4,7,8,9)			
	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.60	± 9.6 %
10487	1	Subframe=2,3,4,7,8,9)			10.0.0/
		LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL	LTE-TDD	1.70	± 9.6 %
10487	AAE				,
10488		Subframe=2,3,4,7,8,9)		0.24	+060
	AAE AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
10488 10489	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)			
10488		Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.31 8.54	± 9.6 % ± 9.6 %
10488 10489	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)			

10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	± 9.6 %
10499	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.68	± 9.6 %
10500	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6 %
10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	± 9.6 %
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	± 9.6 %
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6 %
10505	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10507	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.36	± 9.6 %
10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8,42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	±9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	± 9.6 %
10528	AAB	IEEE 802.11ac WIFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	± 9.6 %
		IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)			
10532	AAB		I WLAN	<u> 8.29 </u>	+96%
10532 10533 10534	AAB AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN WLAN	8.29 8.38	<u>±9.6 %</u> ±9.6 %

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10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6%
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN WLAN	8.54 8.39	± 9.6 % ± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle) IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	±9.6 %
10544	AAB		WLAN	8.55	± 9.6 %
10545 10546	AAB AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10555	AAD	IEEE 802.11ac WiFI (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8,47	± 9.6 %
10556		IEEE 802.11ac WiFI (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10555	AAC AAC	IEEE 802.11ac WIFI (160MHz, MCS2, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562		IEEE 802.11ac WiFI (160MHz, MCS7, 99pc duty cycle)	WLAN	8.69	± 9.6 %
	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10563	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
10564	AAA	cvcle)	VVL/AIN	0.25	1 0.0 /0
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
10505		cycle)	, TE at	0.10	20.0 /0
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	± 9.6 %
10000		cycle)		0.10	2010 /0
10567	AAA	IEEE 802.11g WIFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
10001	1441				
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	± 9.6 %
10000	1.000	cycle)			
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
10000		cycle)			
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
		cycle)			
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty	WLAN	8.59	± 9.6 %
		cycle)			
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	± 9.6 %
		cycle)			
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN	8.70	± 9.6 %
		cycle)			
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN	8.49	± 9.6 %
		cycle)			
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN	8.36	± 9.6 %
		cycle)			
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN	8.76	± 9.6 %
		cycle)			1
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN	8.35	± 9.6 %
		cycle)			
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN	8.67	± 9.6 %
		cycle)			+
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	± 9.6 %

40500					
10588		IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 % ± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN		± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)		8.59	±9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10618	AAB	IEEE 802.11ac WiFI (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	± 9.6 %
10620	AAB	IEEE 802.11ac WiFI (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	±9.6 %
10620	AAB	IEEE 802.11ac WiFI (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10622	AAB	IEEE 802.11ac WiFI (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFI (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB		WLAN	8.82	±9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10620	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10628		IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
	AAB	IEEE 802.11ac WIFI (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	±9.6%
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WIFI (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	9.08 8.89	
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN		± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)		9.05	± 9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)		9.11	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	LTE-TDD	11.96	± 9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	CDMA2000	3.45	± 9.6 %
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD LTE-TDD	7.42 6.96	± 9.6 % ± 9.6 %
10654					

10055		LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)		7.04	1060/
10655 10658	AAE AAA	Pulse Waveform (200Hz, 10%)	LTE-TDD Test	7.21	± 9.6 % ± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 20%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	± 9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	±9.6 %
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	±9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)	WLAN	8.26	± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)	WLAN	8.28	±9.6 %
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10689	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)	WLAN	8.57	± 9.6 %
10695		IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)		8.91	$\pm 9.6\%$
10697 10698		IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle) IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN WLAN	8.61 8.89	± 9.6 % ± 9.6 %
10698	AAA AAA	IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10099	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10700		IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10703		IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	WLAN	8.56	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)	WLAN	8.69	± 9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)	WLAN	8.66	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.67	± 9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10714	AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.26	± 9.6 %
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)	WLAN	8.30	± 9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)	WLAN	8.24	± 9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10721	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)	WLAN	8.55	± 9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
			1 18/1 6 61	8.90	± 9.6 %
10724	AAA	IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)	WLAN		
10724 10725	AAA	IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10724					

40700					
10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	± 9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10733	AAA	IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10734	AAA	IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10735	AAA	IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10744	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	± 9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	± 9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN	9.00	± 9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.64	± 9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	± 9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	± 9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	± 9.6 %

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

Calibration Laboratory of

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S Schweizerischer Kalibrierdienst

- C Service suisse 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

mannateral Agreement for the recognition of calibration of the

PC Test Client

Certificate No: EX3-7409_Jun19

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7409
Calibration procedure(s)	QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7 Calibration procedure for dosimetric E-field probes
Calibration date:	June 19, 2019
	uments the traceability to national standards, which realize the physical units of measurements (SI). ncertainties 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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	Carall
			sig plg-
Approved by:	Katja Pokovic	Technical Manager	ANK .
			100 15
			Issued: June 20, 2019
This calibration certificate	e shall not be reproduced except in fu	II without written approval of the labo	pratory.

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst

- C Service suisse d'étalonnage
- Servizio svizzero di taratura
- Swiss Calibration Service

Accreditation No.: SCS 0108

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization 9	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 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 ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	0.38	0.33	0.38	± 10.1 %
DCP (mV) ^B	95.8	101.8	100.3	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	135.5	± 3.5 %	±4.7 %
-		Y	0.00	0.00	1.00		129.2		
		Z	0.00	0.00	1.00		130.6		
10352-	Pulse Waveform (200Hz, 10%)	X	1.32	60.00	6.76	10.00	60.0	± 2.3 %	± 9.6 %
AAA		Y	2.29	64.91	9.64		60.0		
		Z	1,81	63.07	9.49		60.0	1	
10353-	Pulse Waveform (200Hz, 20%)	X	0.80	60.00	5.37	6.99	80.0	± 1.9 %	± 9.6 %
AAA		Y	1.45	64.56	8.47		80.0		
		Z	1.57	65.00	8.98		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	0.42	60.00	3.77	3.98	95.0	± 1.3 %	± 9.6 %
AAA		Y	0.88	64.90	7.60		95.0]	
		Z	0.42	60.00	5.26		95.0		
10355- Pulse Waveform	Pulse Waveform (200Hz, 60%)	X	0,16	179.15	25.80	2.22	120.0	± 1.4 %	± 9.6 %
AAA		Y	15.00	80.71	11.05		120.0		
		Z	0.26	60.00	3.66	1	120.0		
10387-	QPSK Waveform, 1 MHz	X	0.00	60.00	1.00	0.00	150.0	± 3.7 %	± 9.6 %
AAA		Y	0.42	60.00	5.25	1	150.0]	
		Z	0.44	60.00	5.03		150.0		
10388-	QPSK Waveform, 10 MHz	X	1.68	67.97	15.54	0.00	150.0	± 1.2 %	± 9.6 %
AAA		Y	2.15	69.30	16.63		150.0		
		Z	1.92	66.86	15.11		150.0		
10396-	64-QAM Waveform, 100 kHz	X	1.88	65.71	16.62	3.01	150.0	± 3.3 %	± 9.6 %
AAA		Y	2.51	70.30	18.83		150.0		
		Z	1.94	66.57	18.18]	150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.08	66.90	15.71	0.00	150.0	± 2.7 %	± 9.6 %
AAA		Y	3.43	67.58	16.15]	150.0		
		Z	3.31	66.58	15.55		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.19	66.11	15.73	0.00	150.0	± 4.7 %	± 9.6 %
AAA		Y	4.64	66.08	15.84		150.0	_	
		Z	4.60	65.42	15.52	1	150.0	1	

Note: For details on UID parameters see Appendix

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%.

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^A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6). ^B Numerical linearization parameter: uncertainty not required.

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

	C1 fF	C2 fF	α V ⁻¹	T1 ms.V⁻²	T2 ms.V ⁻¹	T3 ms	T4 V⁻²	T5 V⁻¹	Т6
X	15.1	114.89	36.52	2.59	0.12	4.98	0.18	0.16	1.00
- <u>Y</u>	27.6	203.75	34,94	3.93	0.05	4.99	1.59	0.00	1.00
Z	31.2	243.42	38.43	3.81	0.30	5.03	0.00	0.11	1.02

Sensor Model Parameters

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	40.5
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

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	41.9	0.89	9.96	9.96	9.96	0.50	0.81	± 12.0 %
835	41.5	0.90	9.70	9.70	9.70	0.40	0.94	± 12.0 %
1750	40.1	1.37	8.32	8.32	8.32	0.37	0.85	± 12.0 %
1900	40.0	1.40	8.01	8.01	8.01	0.35	0.85	± 12.0 %
2300	39.5	1.67	7.55	7.55	7.55	0.32	0.90	± 12.0 %
2450	39.2	1.80	7.30	7.30	7.30	0.39	0.90	± 12.0 %
2600	39.0	1.96	7.12	7.12	7.12	0.36	0.90	± 12.0 %
5250	35.9	4.71	5.20	5.20	5.20	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.80	4.80	4.80	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.78	4.78	4.78	0.40	1.80	± 13.1 %

Calibration Parameter Determined in Head Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to \pm 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. ⁶ Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

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

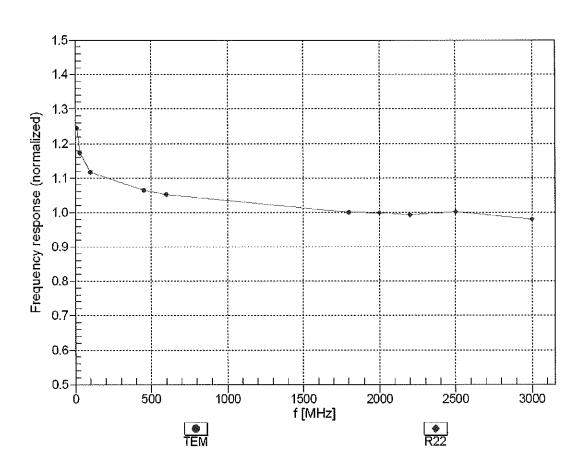
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	55.5	0.96	9.96	9.96	9.96	0.48	0.80	± 12.0 %
835	55.2	0.97	9.74	9.74	9.74	0.52	0.81	± 12.0 %
1750	53.4	1.49	7.85	7.85	7.85	0.35	0.85	± 12.0 %
1900	53.3	1.52	7.67	7.67	7.67	0.43	0.85	± 12.0 %
2300	52.9	1.81	7.41	7.41	7.41	0.39	0.90	± 12.0 %
2450	52.7	1.95	7.18	7.18	7.18	0.37	0.90	± 12.0 %
2600	52.5	2.16	7.18	7.18	7.18	0.38	0.90	± 12.0 %
5250	48.9	5.36	4.70	4.70	4.70	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.22	4.22	4.22	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.23	4.23	4.23	0.50	1.90	± 13.1 %

Calibration Parameter Determ	nined in Body	y Tissue Simulating N	/ledia
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^c Frequency validity above 300 MHz of \pm 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to \pm 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 \pm 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to \pm 110 MHz. ^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to

⁶ At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to \pm 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. ⁶ Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

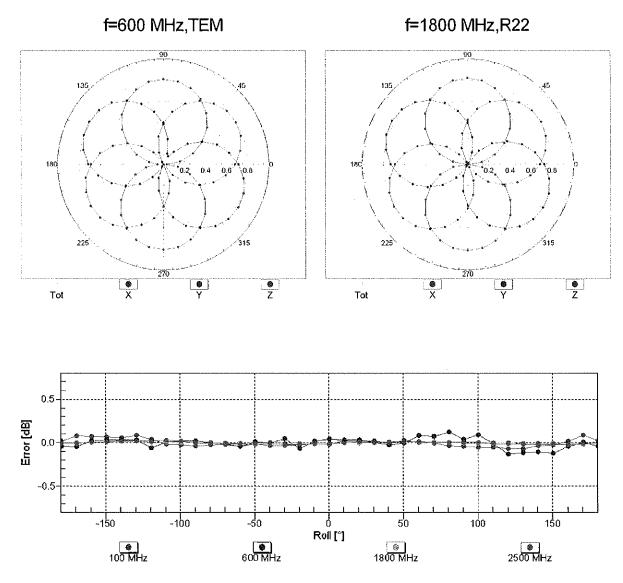
³ Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than \pm 1% for frequencies below 3 GHz and below \pm 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from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



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

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

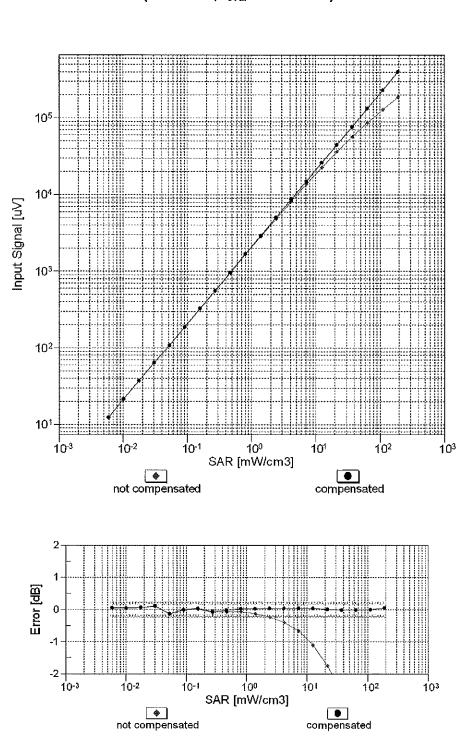
Certificate No: EX3-7409_Jun19



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

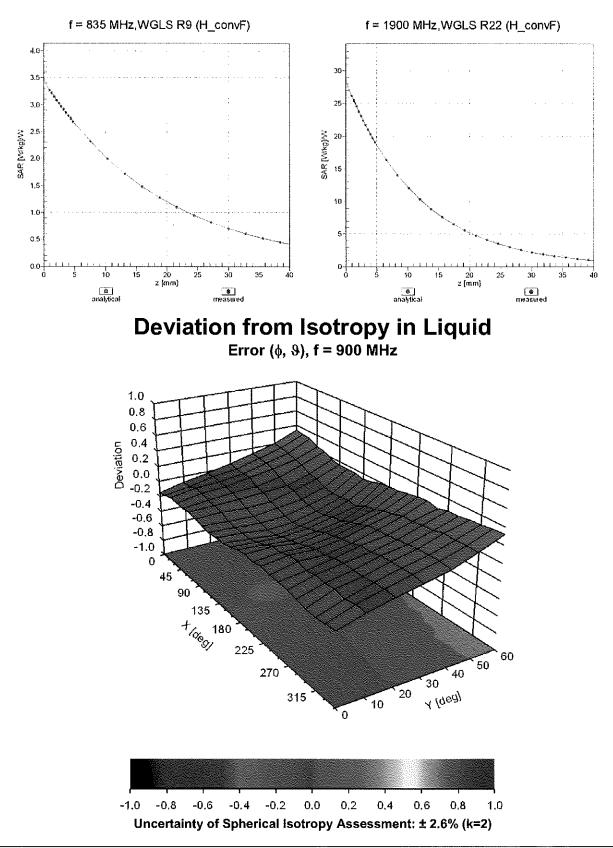
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

June 19, 2019



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

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



Conversion Factor Assessment

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc [±] (k=2)	
0		CW	CW	0.00	±4.7 %	
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	±9.6 %	
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6 %	
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6%	
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %	
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6 %	
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %	
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	±9.6 %	
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6 %	
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	±9.6%	
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	±9.6%	
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6%	
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %	
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %	
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %	
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %	
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %	
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %	
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %	
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	$\pm 9.6\%$	
10037		IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %	
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	$\pm 9.6\%$	
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.10	± 9.6 %	
10039		IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)				
	CAB		AMPS	7.78	$\pm 9.6\%$	
10044		IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %	
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %	
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %	
10056		UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %	
10058		EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %	
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %	
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %	
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %	
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %	
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %	
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %	
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %	
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %	
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %	
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %	
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %	
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %	
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %	
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %	
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %	
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %	
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %	
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %	
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %	
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %	
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %	
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %	
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %	
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %	
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %	
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6 %	
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %	
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	±9.6 %	
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	±9.6 %	
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	±9.6 %	
10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %	

19109 CAG LTE-FDD (SC+FDMA, 100% RB, 5 MHz, 16-CAM) LTE-FDD 5.76 1905 19111 CAG LTE-FDD (SC+FDMA, 100% RB, 5 MHz, 16-CAM) LTE-FDD 6.58 1905 19112 CAG LTE-FDD (SC+FDMA, 100% RB, 10MHz, 46-CAM) LTE-FDD 6.59 1905 19113 CAG LTE-FDD (SC+FDMA, 100% RB, 10MHz, 46-CAM) LTE-FDD 6.52 1905 19114 CAG LTE-EDD (SC+FDMA, 100% RB, 10MHz, 46-CAM) WLAN 8.16 1905 19115 CAG LEEE 802.11n (HT Mixed, 135 Mbps, 16-CAM) WLAN 8.16 1905 19116 CAG LEEE 802.11n (HT Mixed, 138 Mbps, 16-CAM) WLAN 8.59 1905 19110 CAG LEEE 802.11n (HT Mixed, 138 Mbps, 16-CAM) WLAN 8.59 1905 19111 CAG LEEE 802.11n (HT Mixed, 138 Mbps, 16-CAM) UTE-FDD 6.43 1905 19112 CAG LEEE 802.11n (HT Mixed, 188, 15 MHz, 16-CAM) UTE-FDD 6.73 1905 19104 CAE						
19111 CAG LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-CAM) LTE-FDD 6.69 19.6 % 19112 CAG LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-CAM) LTE-FDD 6.69 19.6 % 19113 CAG LEEE 802.11n (HT Greenfield, 315 Mbps, 61-CAM) WLAN 8.10 19.6 % 19116 CAG LEEE 802.11n (HT Greenfield, 315 Mbps, 61-CAM) WLAN 8.15 19.6 % 19117 CAG LEEE 802.11n (HT Mixed, 135 Mbps, 61-CAM) WLAN 8.59 19.6 % 19118 CAG LEEE 802.11n (HT Mixed, 136 Mbps, 61-CAM) WLAN 8.59 19.6 % 19119 CAG LEEE 802.11n (HT Mixed, 136 Mbps, 61-CAM) WLAN 8.59 19.6 % 19140 CAE LTE-FDD (SC-FDMA, 100% KB, 15 MHz, 16-CAM) LTE-FDD 6.38 19.6 % 19141 CAE LTE-FDD (SC-FDMA, 100% KB, 15 MHz, 16-CAM) LTE-FDD 5.73 19.6 % 19142 CAE LTE-FDD (SC-FDMA, 100% KB, 13 MHz, 16-CAM) LTE-FDD 5.74 19.6 % 19142 CAE LTE-FDD (SC-FDMA, 100% KB, 13 MHz, 64-CAM)	10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10112 CAG LTE-FDD 6.62 9.6 % 10113 CAG LTE-FDD 6.62 9.6 % 10114 CAG LEEE B02.11n (HT creenfield, 13.5 Mbps, BPSK) WLAN 8.16 9.6 % 10115 CAG IEEE B02.11n (HT creenfield, 13.5 Mbps, BPSK) WLAN 8.16 9.9 6 % 10116 CAG IEEE B02.11n (HT isoed, 13.5 Mbps, BPSK) WLAN 8.07 1.9 6 % 10117 CAG IEEE B02.11n (HT isoed, 13.5 Mbps, BPSK) WLAN 8.19 9.8 6 % 10118 CAG IEEE B02.11n (HT isoed, 13.5 Mbps, BPSK) WLAN 8.19 9.8 6 % 10119 CAG IEEE B02.11n (HT isoed, 13.5 Mbps, BPSK) WLAN 8.19 9.6 % 10141 CAE LTE-FDD (SC-FDMA, 100% RB, 15 MHz, G+OAM) LTE-FDD 5.7 8 9.6 % 10141 CAE LTE-FDD (SC-FDMA, 100% RB, 14 MHz, G+OAM) LTE-FDD 5.7 8 9.6 % 10142 CAE LTE-FDD (SC-FDMA, 100% RB, 14 MHz, G+OAM) LTE-FDD 5.7 8 9.6 % 10144 CAE	1		LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)		5.75	± 9.6 %
10113 CAG LITE-FDD Sci PDA 1014 CAG 115 116					6.44	± 9.6 %
10114 CAC LEEE 802.11n (HT Greenfield, 31 Mbps, 16-QAM) WLAN 8.40 + 9.6 % 10116 CAC LEEE 802.11n (HT Greenfield, 31 Mbps, 16-QAM) WLAN 8.71 + 9.6 % 10116 CAC LEEE 802.11n (HT Greenfield, 135 Mbps, 16-QAM) WLAN 8.71 + 9.6 % 10117 CAC LEEE 802.11n (HT Maxel, 31 Mbps, 16-QAM) WLAN 8.73 + 9.6 % 10118 CAC LEEE 802.11n (HT Maxel, 31 Mbps, 16-QAM) WLAN 8.13 + 9.6 % 10140 CAE LTEF-DD (SC-FDMA, 100% RB, 15 MHz, 16-QAM) LTE-FDD (6.42 + 9.6 % 10141 CAE LTEF-DD (SC-FDMA, 100% RB, 3 MHz, 6-QAM) LTE-FDD (6.55 + 9.6 % 10142 CAE LTEF-DD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM) LTE-FDD (6.65 + 9.6 % 10145 CAF LTEF-DD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) LTE-FDD (6.64 + 9.6 % 10146 CAF LTEF-DD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) LTE-FDD (6.64 + 9.6 % 10146 CAF LTEF-DD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) LTE-FDD (6.64 + 9.6 %			LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	
10116 CAC IEE 802.11n (HT Greenfiel, 31 Mbps, 16-CAM) WILAN 8.46 19.6 % 10117 CAC IEEE 802.11n (HT Mixed, 135 Mbps, 16-CAM) WILAN 8.07 19.6 % 10118 CAC IEEE 802.11n (HT Mixed, 135 Mbps, 64-CAM) WILAN 8.59 9.0 % 10119 CAC IEEE 802.11n (HT Mixed, 135 Mbps, 64-CAM) WILAN 8.51 9.8 % 10140 CAE ITE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-CAM) ITE-FDD (6.53 9.8 % 10141 CAE ITE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-CAM) ITE-FDD (6.53 9.8 % 10142 CAE ITE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-CAM) ITE-FDD (6.35 9.8 % 10144 CAE ITE-FDD (SC-FDMA, 100% RB, 1 AH MHz, 0-FSK) ITE-FDD (6.57 9.8 % 10146 CAF ITE-FDD (SC-FDMA, 100% RB, 1 AH MHz, 0-CAM) ITE-FDD (6.67 9.8 % 10146 CAF ITE-FDD (5C-FDMA, 50% RB, 20 MHz, 16-CAM) ITE-FDD (6.67 9.8 % 10146 CAF ITE-FDD (5C-FDMA, 50% RB, 20 MHz, 16-CAM) ITE-FDD (6.67 9.8 % 10146 <td< td=""><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td></td><td>LTE-FDD</td><td>6.62</td><td>± 9.6 %</td></td<>	· · · · · · · · · · · · · · · · · · ·			LTE-FDD	6.62	± 9.6 %
10110 CAC LEE 802.11n (HT Greenfield, 135 Mbps, 64-CAM) WUAN 8.15 19.6 % 10111 CAC LEEE 802.11n (HT Maxed, 81 Mbps, 16-CAM) WUAN 8.59 19.6 % 10119 CAC LEEE 802.11n (HT Maxed, 81 Mbps, 16-CAM) WUAN 8.15 19.6 % 10140 CAE LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-CAM) LTE-FDD (6.49 19.6 % 10141 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-CAM) LTE-FDD (6.5 B) 5.73 19.8 % 10142 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-CAM) LTE-FDD (6.5 B) 5.73 19.8 % 10144 CAE LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-CAM) LTE-FDD (6.6 B) 5.76 19.8 % 10146 CAF LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-CAM) LTE-FDD (6.6 B) 5.78 19.8 % 10147 CAF LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD (6.6 19.8 6 % 19.6 % 10142 CAE LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD (5.6 5 % 8 8 % 19.6 % 10145 CAE LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM)				WLAN	8.10	±9.6 %
10117 CAC LEEE 802.11n (HT Mixed, 13.5 Mbps, BF-SK) WUAN 8.07 19.8 % 10118 CAC LEEE 802.11n (HT Mixed, 135 Mbps, 84-OAM) WUAN 8.10 19.8 % 10140 CAC LEEE 802.11n (HT Mixed, 135 Mbps, 84-OAM) WTAN 8.13 19.8 % 10141 CAC LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 48-OAM) LTE-FDD 6.53 19.8 % 10142 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM) LTE-FDD 6.53 19.8 % 10143 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM) LTE-FDD 6.65 19.8 % 10144 CAE LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-OAM) LTE-FDD 6.64 19.8 % 10145 CAF LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-OAM) LTE-FDD 6.72 19.8 % 10146 CAF LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM) LTE-FDD 6.72 19.8 % 10147 CAF LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM) LTE-FDD 6.82 19.8 % 10147 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM)				WLAN	8.46	
10118 CAC LEEE 802.11n (HT Mixed, 81 Mbps, 16-CAM) WUAN 8:59 59.6% 10140 CAC LEEE 802.11n (HT Mixed, 13 Subps, 64-CAM) UTE-FDD 6:49 19.6% 10141 CAE LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-CAM) UTE-FDD 6:53 19.6% 10142 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 0PSK) UTE-FDD 6:35 19.6% 10142 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-CAM) UTE-FDD 6:36 19.6% 10144 CAE LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-CAM) LTE-FDD 6:46 19.6% 10145 CAE LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-CAM) LTE-FDD 6:47 19.6% 10147 CAE LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD 6:42 19.6% 10150 CAE LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD 6:42 19.6% 10151 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD 6:49.6% 10152 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD <t< td=""><td>10116</td><td>CAC</td><td>IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)</td><td>WLAN</td><td>8.15</td><td>± 9.6 %</td></t<>	10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10119 CAC IEEE 802 11n (HT Mixed, 135 Mbps, 64-QAM) WLAN 8.13 8.96 % 10140 CAE LTE-FDD ISC-FDMA, 100% RB, 15 MHz, 46-QAM) LTE-FDD 6.53 8.96 % 10141 CAE LTE-FDD ISC-FDMA, 100% RB, 31 MHz, 46-QAM) LTE-FDD 6.53 8.96 % 10143 CAE LTE-FDD ISC-FDMA, 100% RB, 31 MHz, 46-QAM) LTE-FDD 6.65 2.86 % 10144 CAE LTE-FDD ISC-FDMA, 100% RB, 14 MHz, 46-QAM) LTE-FDD 6.61 2.86 % 10146 CAF LTE-FDD ISC-FDMA, 100% RB, 14 MHz, 46-QAM) LTE-FDD 6.42 2.96 % 10147 CAF LTE-FDD ISC-FDMA, 50% RB, 20 MHz, 64-QAM) LTE-FDD 6.42 2.96 % 10150 CAE LTE-FDD ISC-FDMA, 50% RB, 20 MHz, 64-QAM) LTE-FDD 6.42 2.96 % 10151 CAG LTE-FDD ISC-FDMA, 50% RB, 20 MHz, 64-QAM) LTE-FDD 5.62 % 9.66 % 10152 CAG LTE-FDD ISC-FDMA, 50% RB, 20 MHz, 64-QAM) LTE-FDD 5	10117	CAC		WLAN	8.07	± 9.6 %
10140 CAE LTE-FDD 6.6.49 ± 9.6 % 10141 CAE LTE-FDD 56.73 ± 9.6 % 10142 CAE LTE-FDD 56.73 ± 9.6 % 10143 CAE LTE-FDD 56.73 ± 9.6 % 10144 CAE LTE-FDD 56.73 ± 9.6 % 10144 CAE LTE-FDD 56.75 ± 9.8 % 10145 CAF LTE-FDD 56.75 ± 9.8 % 10146 CAF LTE-FDD 56.75 ± 9.8 % 10147 CAF LTE-FDD 56.75 ± 9.8 % 10147 CAF LTE-FDD 56.75 ± 9.8 % 10147 CAF LTE-FDD 56.75 ± 9.8 % 10145 CAG LTE-FDD 56.75 ± 9.6 % 10151 CAG LTE-FDD 56.75 ± 9.6 % 10152 CAG LTE-FDD 56.75 ± 9.6 % 10154 CAG LTE-FDD 56.75 ± 9.6 %	10118	CAC		WLAN	8.59	± 9.6 %
10141 CAE LTE-FDD 65.3 7.9 6.8 10142 CAE LTE-FDD 65.3 7.9 6.8 10142 CAE LTE-FDD 65.3 7.9 6.8 10143 CAE LTE-FDD 65.7 7.9 8.6 10144 CAE LTE-FDD 65.6 7.9 8.6 10146 CAF LTE-FDD 10.7 8.7 9.8 8.7 10146 CAF LTE-FDD 10.7 8.7 9.8 8.7 9.8 8.7 10147 CAF LTE-FDD 10.7 8.8 9.7 14.8 6.4 4.2 9.8 8.7 14.8 14.4 14.2 6.4 14.1 14.6 6.4 14.2 15.6 14.1 14.6 6.4 14.2 15.6 14.1 15.6 14.6 15.6 14.2 16.2 14.2 16.3 15.8 16.3 15.8 16.3 15.8 16.3 14.2 1	10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10141 CAE LTE-FDD 65.3 ± 9.6 % 10142 CAE LTE-FDD 55.3 ± 9.6 % 10143 CAE LTE-FDD 55.7 ± 9.6 % 10144 CAE LTE-FDD 55.7 ± 9.6 % 10145 CAF LTE-FDD 55.7 ± 9.6 % 10146 CAF LTE-FDD 55.7 ± 9.6 % 10147 CAF LTE-FDD 55.7 ± 9.6 % 10150 CAE LTE-FDD 56.7 ± 9.6 % 10151 CAG LTE-FDD 55.7 # 9.8 % 10152 CAG LTE-FDD 55.7 # 9.8 % 10153 CAG LTE-FDD 10.7 # 9.8 % 10154 CAG LTE-FDD 55.7 # 9.8 % <t< td=""><td>10140</td><td>CAE</td><td>LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)</td><td>LTE-FDD</td><td>6.49</td><td>± 9.6 %</td></t<>	10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10143 CAE LTE-FDD 57.3 \$ \$ 9.6 % 10143 CAE LTE-FDD 56.73 \$ \$ 9.6 % 10144 CAE LTE-FDD 56.75 \$ \$ 9.6 % 10144 CAE LTE-FDD 56.75 \$ \$ 9.6 % 10146 CAF LTE-FDD 56.75 \$ \$ 9.6 % 10146 CAF LTE-FDD 56.75 \$ \$ 9.6 % 10147 CAF LTE-FDD 56.71 \$ \$ 9.6 % 10148 CAF LTE-FDD 56.72 \$ \$ 9.6 % 10147 CAF LTE-FDD 56.72 \$ \$ 9.6 % 10150 CAB LTE-FDD 56.72 \$ \$ 9.6 % 10151 CAG LTE-FDD 56.72 \$ \$ 9.6 % 10152 CAG LTE-FDD 56.72 \$ \$ 9.6 % 10153 CAG LTE-FDD 56.72 \$ \$ 9.6 % 10154 CAG LTE-FDD 56.72 \$ \$ 9.6 % 10155 CAG LTE-FDD 56.72	10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)		6.53	
10143 CAE LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-CAM) LTE-FDD 6.85 ±9.6 % 10144 CAF LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-CAM) LTE-FDD 6.81 ±9.6 % 10146 CAF LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-CAM) LTE-FDD 6.41 ±9.6 % 10147 CAF LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-CAM) LTE-FDD 6.42 ±9.6 % 10149 CAE LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD 6.82 ±9.6 % 10150 CAE LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD 9.28 ±9.6 % 10151 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-CAM) LTE-FDD 9.28 ±9.6 % 10152 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 0FSK) LTE-FDD 6.60 ±9.6 % 10155 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 0FSK) LTE-FDD 6.62 ±9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 0FSK) LTE-FDD 6.62 ±9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-CAM)	10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD		
10144 CAE LTE-FDD (6.65 ±9.6 %) 10145 CAF LTE-FDD (6.77) (7.8) (7.8) 10146 CAF LTE-FDD (6.72) ±9.6 %) 10147 CAF LTE-FDD (6.72) ±9.6 %) 10147 CAF LTE-FDD (6.7-10) (6.7-10) 10149 CAE LTE-FDD (6.7-10) (6.7-10) 10150 CAE LTE-FDD (6.7-10)	10143	CAE				
10145 CAF LTE-FDD (5.76 ±9.6 %, 10146 CAF LTE-FDD (5.7-FDM, 100%, RB, 14 MHz, 16-CAM) LTE-FDD 6.41 ±9.6 %, 10147 CAF LTE-FDD (5.2-FDMA, 100%, RB, 14 MHz, 16-CAM) LTE-FDD 6.42 ±9.6 %, 10150 CAE LTE-FDD (5.2-FDMA, 50%, RB, 20 MHz, 16-CAM) LTE-FDD 6.60 ±9.6 %, 10151 CAG LTE-FDD (5.2-FDMA, 50%, RB, 20 MHz, 16-CAM) LTE-TDD 9.92 ±9.6 %, 10152 CAG LTE-TDD (5.2-FDMA, 50%, RB, 20 MHz, 0FSK) LTE-FDD 10.55 ±9.6 %, 10153 CAG LTE-FDD (5.2-FDMA, 50%, RB, 10 MHz, 16-CAM) LTE-FDD 6.43 ±9.6 %, 10155 CAG LTE-FDD (5.2-FDMA, 50%, RB, 10 MHz, 16-CAM) LTE-FDD 6.43 ±9.6 %, 10156 CAG LTE-FDD (5.2-FDMA, 50%, RB, 10 MHz, 16-CAM) LTE-FDD 6.49 ±9.6 %, 10156 CAG LTE-FDD (5.2-FDMA, 50%, RB, 10 MHz, 16-CAM) LTE-FDD 6.52 ±9.6 %,	10144	CAE			+·····	
10146 CAF LITE-FDD (6.41 19.6% 10147 CAF LITE-FDD (6.72) 19.6% 10149 CAE LITE-FDD (6.72) 19.6% 10149 CAE LITE-FDD (6.72) 19.6% 10150 CAE LITE-FDD (6.72) 19.6% 10151 CAG LITE-FDD (6.72) 19.6% 10152 CAG LITE-FDD (6.75) 19.6% 10153 CAG LITE-FDD (5.75) 19.6% 10154 CAG LITE-FDD (5.75) 19.6% 10155 CAG LITE-FDD (5.75) 19.6% 10156 CAG LITE-FDD (5.75) 19.6% 10157 CAG LITE-FDD (5.75) 19.6% 10158 CAG LITE-FDD (5.75) 19.6% 10159 CAG LITE-FDD (5.75) 19.6% 10159 CAG LITE-FDD (5.75) 19.6% <	10145	**************************************				
10147 CAF LTE-FDD 6S-72 ±9.6 % 10149 CAE LTE-FDD 6S-72 ±9.6 % 10150 CAE LTE-FDD SS-20 MHz, 0F-QAM) LTE-FDD 6.42 ±9.6 % 10151 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 0F-QAM) LTE-FDD 9.28 ±9.6 % 10152 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 0F-QAM) LTE-TDD 9.92 ±9.6 % 10153 CAG LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 0PSK) LTE-FDD 5.75 ±9.6 % 10154 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 0PSK) LTE-FDD 6.43 ±9.6 % 10155 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0FSK) LTE-FDD 6.43 ±9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0FSK) LTE-FDD 6.43 ±9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0FSK) LTE-FDD 6.82 ±9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.82 ±9.6 % 10160 CAE<						
10149 CAE LTE-FDD 6.42 ± 9.6 % 10150 CAE LTE-FDD 6.40 ± 9.6 % 10151 CAG LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 0PSK) LTE-FDD 9.28 ± 9.6 % 10152 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) LTE-FDD 9.92 ± 9.6 % 10153 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) LTE-FDD 5.75 ± 9.6 % 10154 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 0PSK) LTE-FDD 5.75 ± 9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 0PSK) LTE-FDD 6.49 ± 9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 0PSK) LTE-FDD 6.62 ± 9.6 % 10157 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 0PSK) LTE-FDD 6.62 ± 9.6 % 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 0PSK) LTE-FDD 6.62 ± 9.6 % 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM) LTE-FDD 6.64 ± 9.6 % 10					-	
10150 CAE LTE-FDD SC0 ± 9.6 % 10151 CAG LTE-TDD SC2-FDMA, 50% RB, 20 MHz, GPSK) LTE-TDD 9.28 ± 9.6 % 10152 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G4-GAM) LTE-TDD 9.92 ± 9.6 % 10153 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G4-GAM) LTE-TDD 9.92 ± 9.6 % 10154 CAG LTE-TDD (SC-FDMA, 50% RB, 50 MHz, G4-GAM) LTE-FDD 6.43 ± 9.6 % 10155 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, G4-GAM) LTE-FDD 6.43 ± 9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 16-GAM) LTE-FDD 6.42 ± 9.6 % 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 16-GAM) LTE-FDD 6.56 ± 9.6 % 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-GAM) LTE-FDD 6.82 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 64-GAM) LTE-FDD 6.84 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 64-GAM) LTE-FDD						
10151 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 0PSK) LTE-TDD 9.92 ± 9.6 % 10152 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) LTE-TDD 9.92 ± 9.6 % 10153 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM) LTE-TDD 10.05 ± 9.6 % 10155 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 0-QAM) LTE-FDD 6.43 ± 9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0-QAM) LTE-FDD 6.49 ± 9.6 % 10157 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM) LTE-FDD 6.62 ± 9.6 % 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM) LTE-FDD 6.62 ± 9.6 % 10160 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 40-QAM) LTE-FDD 6.82 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 40-QAM) LTE-FDD 6.82 ± 9.6 % 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0PSK) LTE-FDD 6.82 ± 9.6 % 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM)					4	
10152 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM) LTE-TDD 9.92 ± 9.6 % 10153 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM) LTE-TDD 5.7 ± 9.6 % 10154 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM) LTE-FDD 5.7 ± 9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 16-QAM) LTE-FDD 5.7 ± 9.6 % 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 16-QAM) LTE-FDD 6.43 ± 9.6 % 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 64-QAM) LTE-FDD 6.62 ± 9.6 % 10159 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.62 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.43 ± 9.6 % 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.48 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.21 ± 9.6 % 10166 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.22						
10153 CAG LTE-TDD (SC-FDMA, 50% RB, 20 MHz, GPSK) LTE-TDD 10.05 ± 9.6 %, 10154 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, GPSK) LTE-FDD 5.75 ± 9.6 %, 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, GPSK) LTE-FDD 6.43 ± 9.6 %, 10167 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 16-QAM) LTE-FDD 6.62 ± 9.6 %, 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 50 MHz, 16-QAM) LTE-FDD 6.62 ± 9.6 %, 10159 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 40-QAM) LTE-FDD 6.62 ± 9.6 %, 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 40-QAM) LTE-FDD 6.62 ± 9.6 %, 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0-QAM) LTE-FDD 6.43 ± 9.6 %, 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0-QAM) LTE-FDD 6.43 ± 9.6 %, 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0-QAM) LTE-FDD 6.73 ± 9.6 %, 10163 CAF LTE-FDD (SC-FDMA, 150% RB, 14 MHz, 0-						
10154 CAG LTE-FDD 5.75 ±9.6 %, 10155 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK) LTE-FDD 6.43 ±9.6 %, 10157 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK) LTE-FDD 6.49 ±9.6 %, 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, Q-QAM) LTE-FDD 6.62 ±9.6 %, 10159 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, Q-QAM) LTE-FDD 6.62 ±9.6 %, 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, Q-QAM) LTE-FDD 6.643 ±9.6 %, 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, Q-QAM) LTE-FDD 6.43 ±9.6 %, 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, Q-QAM) LTE-FDD 6.42 ±9.6 %, 10166 CAF LTE-FDD (SC-FDMA, 18, 20 MHz, 18-QAMM) LTE-FDD 6.72 ±9.6 %, 10168 CAF LTE-FDD (SC-FDMA, 17 RB, 20 MHz, Q-QAM) LTE-FDD 6.73 ±9.6 %, 10170 CAE LTE-FDD (SC-FDMA, 17 RB, 20 MHz, Q-QAM) LTE-FDD 6.52 ±9.6 %, 10171 CAE <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10155 CAG LTE-FDD 6.43 ±9.6 %. 10156 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK) LTE-FDD 6.49 ±9.6 %. 10157 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK) LTE-FDD 6.62 ±9.6 %. 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM) LTE-FDD 6.62 ±9.6 %. 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.62 ±9.6 %. 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM) LTE-FDD 6.43 ±9.6 %. 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 5.46 ±9.6 %. 10166 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, GPSK) LTE-FDD 6.79 ±9.6 %. 10167 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, GPSK) LTE-FDD 6.79 ±9.6 %. 10168 CAF LTE-FDD (SC-FDMA, 178.2 0MHz, G4-QAM) LTE-FDD 6.79 ±9.6 %. 10170<			LTE-EDD (SC-EDMA 50% RB 10 MHz OPSK)			
10156 CAG LTE-FDD S.79 ± 9.6 % 10157 CAG LTE-FDD S.79 ± 9.6 % 10158 CAG LTE-FDD S.49 ± 9.6 % 10158 CAG LTE-FDD S.49 ± 9.6 % 10159 CAG LTE-FDD S.C-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD S.62 ± 9.6 % 10160 CAE LTE-FDD S.C-FDMA, 50% RB, 15 MHz, 16-QAM) LTE-FDD S.64 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM) LTE-FDD S.64 ± 9.6 % 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 04-QAM) LTE-FDD S.73 ± 9.6 % 10168 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 04-QAM) LTE-FDD S.73 ± 9.6 % 10169 CAE LTE-FDD (SC-FDMA, 10% AD MHz, 0PSK) LTE-FDD S.73 ± 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1RB, 20 MHz, 16-QAM) LTE-FDD S.73 ± 9.6 % 10171 CAG LTE-FDD (SC-FDMA, 1RB, 20 MHz, 16-QAM)						
10157 CAG LTE-FDD SC-FDMA, 50% RB, 5 MHz, 16-OAM) LTE-FDD 6.49 ± 9.6 %. 10158 CAG LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM) LTE-FDD 6.52 ± 9.6 %. 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM) LTE-FDD 5.82 ± 9.6 %. 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.43 ± 9.6 %. 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.46 ± 9.6 %. 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 64-QAM) LTE-FDD 6.46 ± 9.6 %. 10163 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0F-QAM) LTE-FDD 6.21 ± 9.6 %. 10168 CAF LTE-FDD (SC-FDMA, 18, 20 MHz, 64-QAM) LTE-FDD 6.79 ± 9.6 %. 10170 CAE LTE-FDD (SC-FDMA, 1RB, 20 MHz, 64-QAM) LTE-FDD 6.49 ± 9.6 %. 10171 CAG LTE-TDD (SC-FDMA, 1RB, 20 MHz, 64-QAM) LTE-FDD 6.49 ± 9.6 %. 10172 CAG LTE-FDD (SC-FDMA, 1 RB, 20						
10158 CAG LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM) LTE-FDD 6.62 ± 9.6 % 10159 CAG LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.56 ± 9.6 % 10160 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.43 ± 9.6 % 10161 CAE LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM) LTE-FDD 6.43 ± 9.6 % 10162 CAE LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK) LTE-FDD 6.43 ± 9.6 % 10166 CAF LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK) LTE-FDD 6.79 ± 9.6 % 10168 CAF LTE-FDD (SC-FDMA, 1.4 NHz, 04-QAM) LTE-FDD 6.79 ± 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1.78, 20 MHz, 04-QAM) LTE-FDD 6.79 ± 9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1.78, 20 MHz, 16-QAM) LTE-FDD 6.49 ± 9.6 % 10171 CAG LTE-TDD (SC-FDMA, 1.78, 20 MHz, 16-QAM) LTE-FDD 6.49 ± 9.6 % 10172 CAG LTE-TDD (SC-FDMA, 1.78, 20 MHz, 16-QAM) LTE-FDD 5.72 ± 9.6 % 10175 CAG						
10159 CAG LTE-FDD 6.56 1 9.6 % 10160 CAE LTE-FDD SC FDMA, 50% RB, 15 MHz, QPSK) LTE-FDD 5.82 1 9.6 % 10161 CAE LTE-FDD SC-FDMA, 50% RB, 15 MHz, L6-QAM) LTE-FDD 6.43 1 9.6 % 10162 CAE LTE-FDD SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.46 1 9.6 % 10168 CAF LTE-FDD SC-FDMA, 50% RB, 14 MHz, 16-QAM) LTE-FDD 6.71 1 9.6 % 10168 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM) LTE-FDD 6.79 1 9.6 % 10169 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-FDD 6.79 1 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-FDD 6.49 1 9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-FDD 9.48 9.6 % 10172 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 20-SK) LTE-FDD 9.21 1 9.6 % 10174 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz,						
10160 CAE LTE-FDD S.82 ± 9.6 % 10161 CAE LTE-FDD S.82 ± 9.6 % 10162 CAE LTE-FDD SC-FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.58 ± 9.6 % 10162 CAE LTE-FDD SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.546 ± 9.6 % 10163 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 64-QAM) LTE-FDD 6.71 ± 9.6 % 10169 CAF LTE-FDD (SC-FDMA, 18B, 20 MHz, 64-QAM) LTE-FDD 5.73 ± 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1RB, 20 MHz, 64-QAM) LTE-FDD 6.52 ± 9.6 % 10171 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 6.49 ± 9.6 % 10172 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 9.21 ± 9.6 % 10172 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 9.22 ± 9.6 % 10174 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 9.21 ± 9.6 %		1				
10161 CAE LTE-FDD 6.43 ± 9.6 % 10162 CAE LTE-FDD (SC+FDMA, 50% RB, 15 MHz, 64-QAM) LTE-FDD 6.58 ± 9.6 % 10166 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.61 ± 9.6 % 10167 CAF LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK) LTE-FDD 6.21 ± 9.6 % 10168 CAF LTE-FDD (SC-FDMA, 60% RB, 14 MHz, G4-QAM) LTE-FDD 6.79 ± 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1RB, 20 MHz, QPSK) LTE-FDD 6.62 ± 9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1RB, 20 MHz, G4-QAM) LTE-FDD 6.49 ± 9.6 % 10172 CAG LTE-FDD (SC-FDMA, 1RB, 20 MHz, G4-QAM) LTE-FDD 9.24 ± 9.6 % 10173 CAG LTE-FDD (SC-FDMA, 1RB, 20 MHz, G4-QAM) LTE-FDD 9.72 ± 9.6 % 10174 CAG LTE-FDD (SC-FDMA, 1RB, 20 MHz, G4-QAM) LTE-FDD 5.72 ± 9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1RB, 10 MHz, QPSK) LTE-FDD 5.72 ±		<u> </u>		****		
10162 CAE LTE-FDD 6.58 ± 9.6 % 10166 CAF LTE-FDD S.46 ± 9.6 % 10167 CAF LTE-FDD S.46 ± 9.6 % 10168 CAF LTE-FDD S.C-FDMA, 50% RB, 1.4 MHz, 16-QAM) LTE-FDD 6.79 ± 9.6 % 10168 CAF LTE-FDD S.C-FDMA, 1 RB, 20 MHz, QPSK) LTE-FDD 6.73 ± 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, GPGK) LTE-FDD 6.49 ± 9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, GPSK) LTE-FDD 6.49 ± 9.6 % 10172 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, GPSK) LTE-TDD 9.21 ± 9.6 % 10173 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, GA-QAM) LTE-TDD 10.25 ± 9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, GA-QAM) LTE-FDD 5.72 ± 9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK) LTE-FDD 5.72 ± 9.6 % 10177 CAG LTE-FDD (S						
10166 CAF LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK) LTE-FDD 5.46 19.6 % 10167 CAF LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) LTE-FDD 6.21 ±9.6 % 10168 CAF LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) LTE-FDD 6.79 ±9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-FDD 6.52 ±9.6 % 10171 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-FDD 6.49 ±9.6 % 10172 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-FDD 6.49 ±9.6 % 10173 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-TDD 9.48 ±9.6 % 10174 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-FDD 10.25 ±9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK) LTE-FDD 10.25 ±9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK) LTE-FDD 5.72 ±9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM) LTE-FDD						
10167 CAF LTE-FDD 6.21 ±9.6 % 10168 CAF LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) LTE-FDD 6.73 ±9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 0PSK) LTE-FDD 6.52 ±9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 6.52 ±9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 6.49 ±9.6 % 10172 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-TDD 9.21 ±9.6 % 10173 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-TDD 9.48 ±9.6 % 10174 CAG LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 0FSK) LTE-FDD 5.72 ±9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 0FSK) LTE-FDD 5.72 ±9.6 % 10177 CAI LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 0PSK) LTE-FDD 5.72 ±9.6 % 10177 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 0PSK) LTE-FDD 6.50 ±9.6 %						······
10168 CAF LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) LTE-FDD 6.79 ± 9.6 % 10169 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-FDD 6.52 ± 9.6 % 10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-FDD 6.52 ± 9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 9.21 ± 9.6 % 10172 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 0PSK) LTE-TDD 9.48 ± 9.6 % 10173 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 0PSK) LTE-TDD 9.48 ± 9.6 % 10174 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 0PSK) LTE-TDD 10.25 ± 9.6 % 10175 CAG LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 0PSK) LTE-FDD 5.73 ± 9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 0PSK) LTE-FDD 5.73 ± 9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 0PSK) LTE-FDD 5.73 ± 9.6 % 10178 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 0PSK) LTE-FDD 5.72 ± 9.6 % 10177 CAG LTE-FDD (S						
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10170 CAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-FDD 6.52 ±9.6 % 10171 AAE LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-FDD 6.49 ±9.6 % 10172 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-TDD 9.21 ±9.6 % 10173 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-TDD 9.48 ±9.6 % 10174 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) LTE-TDD 9.48 ±9.6 % 10175 CAG LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 0PSK) LTE-FDD 5.72 ±9.6 % 10176 CAG LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 0PSK) LTE-FDD 5.72 ±9.6 % 10177 CAI LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM) LTE-FDD 5.73 ±9.6 % 10178 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM) LTE-FDD 5.73 ±9.6 % 10179 CAG LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM) LTE-FDD 6.50 ±9.6 % 10180 CAE LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0PSK) LTE-FDD 5.72 ±9.6 % 10183 AAD LTE-FDD (SC-FDMA,		\$				
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10198 CAC IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM) WLAN 8.27 ± 9.6 %						± 9.6 %
					8.13	± 9.6 %
10219 CAC IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK) WLAN 8.03 ± 9.6 %					8.27	± 9.6 %
	10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	±9.6 %

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10220 CAC IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM) WL/	******	8.13	± 9.6 %
10221 CAC IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM) WL/		8.27	±9.6%
10222 CAC IEEE 802.11n (HT Mixed, 15 Mbps, BPSK) WL/		8.06	± 9.6 %
10223 CAC IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM) WL/		8.48	±9.6 %
10224 CAC IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM) WL/		8.08	±9.6%
	DMA	5.97	±9.6 %
	E-TDD	9.49	± 9.6 %
	E-TDD	10.26	± 9.6 %
	-TDD	9.22	±9.6 %
	E-TDD	9.48	±9.6%
10230 CAC LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM) LTE	E-TDD	10.25	±9.6 %
10231 CAC LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK) LTE	E-TDD	9.19	±9.6 %
10232 CAF LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM) LTE	E-TDD	9.48	±9.6 %
10233 CAF LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM) LTE	E-TDD	10.25	± 9.6 %
	E-TDD	9.21	± 9.6 %
	E-TDD	9.48	±9.6 %
	E-TDD	10.25	±9.6 %
	E-TDD	9.21	±9.6 %
	E-TDD	9.48	±9.6 %
	-TDD	10.25	±9.6 %
	E-TDD	9.21	± 9.6 %
	-TDD	9.82	± 9.6 %
	-TDD	9.86	±9.6 %
	E-TDD	9.46	±9.6 %
	E-TDD	10.06	±9.6 %
	E-TDD	10.06	± 9.6 %
	-TDD	9.30	± 9.6 %
	-TDD	9.91	± 9.6 %
	E-TDD	10.09	± 9.6 %
	E-TDD	9.29	±9.6 %
	E-TDD	9.81	± 9.6 %
	E-TDD	10.17	± 9.6 %
	E-TDD	9.24	± 9.6 %
	E-TDD	9.90	± 9.6 %
	E-TDD	10.14	± 9.6 %
	E-TDD	9.20	± 9.6 %
	E-TDD	9.96	± 9.6 %
	E-TDD	10.08	± 9.6 %
	E-TDD	9,34	± 9.6 %
	E-TDD	9.98	± 9.6 %
	E-TDD	9.97	± 9.6 %
	E-TDD	9.24	± 9.6 %
	E-TDD	9.24	± 9.6 %
	E-TDD	10.16	± 9.6 %
	E-TDD	9.23	± 9.6 %
	E-TDD	9.92	± 9.6 %
	E-TDD	10.07	± 9.6 %
	E-TDD	9.30	± 9.6 %
	E-TDD	10.06	± 9.6 %
	E-TDD	10.00	± 9.6 %
	E-TDD	9.58	± 9.6 %
		<u>9.56</u> 4.87	± 9.6 %
		3.96	± 9.6 %
		<u> </u>	± 9.6 %
		11.81	$\pm 9.6\%$
		12.18	$\pm 9.6\%$
	S MA2000	3.91	±9.6 %
······			
	MA2000	3.46	$\pm 9.6\%$
	MA2000	3.39	$\pm 9.6\%$
	MA2000	3.50	±9.6%
1 TUZMA LAAK EEDIMAZIDII KUT SUN UMD RAMZZA 75 M	MA2000	12.49	± 9.6 %
10297 AAD LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK) LTE	E-FDD	5.81	$\pm 9.6\%$
10297 AAD LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK) LTE 10298 AAD LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) LTE	E-FDD E-FDD E-FDD	5.81 5.72 6.39	± 9.6 % ± 9.6 %

10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL	WIMAX	12.57	± 9.6 %
		symbols)			
10303	AAA	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	Wimax	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WIMAX	15.24	± 9.6 %
10306	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WIMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WIMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14,46	±9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	Wimax	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	±9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	IDEN 1:6	IDEN	13.48	±9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	±9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352 10353	AAA AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA AAA	Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%)	Generic Generic	6.99	$\pm 9.6\%$
10355	AAA	Pulse Waveform (200Hz, 60%)		3.98	$\pm 9.6\%$
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic Generic	2.22 0.97	±9.6 % ±9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	±9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	±9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	±9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	±9.6 %
		Subframe=2,3,4,7,8,9, Subframe Conf=4)	·····		
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	±9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.14	± 9.6 %
10419	AAA	Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	±9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	±9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	±9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	±9.6%
10427 10430	AAB AAD	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAC	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6%
10433	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	LTE-FDD WCDMA	8.34	$\pm 9.6\%$
10434	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	LTE-TDD	8.60 7.82	± 9.6 % ± 9.6 %
		Subframe=2,3,4,7,8,9)			
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	±9.6 %
10449 10450	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10400	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	±9.6 %
10456	AAB	IEEE 802.11ac WIFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	±9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	±9.6 %
<u>10459</u> 10460	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA AAA	UMTS-FDD (WCDMA, AMR) LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL	WCDMA LTE-TDD	2.39	±9.6 % ±9.6 %
10401		Subframe=2,3,4,7,8,9)	LICIDD	1.02	19.0 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.30	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
10464	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL	LTE-TDD	7.82	1000
10404		Subframe=2,3,4,7,8,9)	LIE-IDD	7.82	± 9.6 %
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.32	±9.6%
10100	1,2,0	Subframe=2,3,4,7,8,9)		0.02	10.0 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
40400		Subframe=2,3,4,7,8,9)	5 AUGUI MAAA ANNAA DIMA, MAA,	0.00	
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
10400		Subframe=2,3,4,7,8,9)		0.00	1 0.0 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10473	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10415		Subframe=2,3,4,7,8,9)	LIC-IDD	1.02	1 9.0 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.32	±9.6 %
10478	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10470		Subframe=2,3,4,7,8,9)		0.57	1 9.0 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8,18	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
10482	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL	LTE-TDD	7.71	± 9.6 %
10402		Subframe=2,3,4,7,8,9)		1.11	1 9.0 %
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.39	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.47	±9.6 %
		Subframe=2,3,4,7,8,9)			
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL	LTE-TDD	7.59	±9.6 %
10486		Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL	LTE-TDD	0.00	+069/
10400	AAE	Subframe=2,3,4,7,8,9)	LIE-IDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.60	±9.6 %
		Subframe=2,3,4,7,8,9)		0.00	
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL	LTE-TDD	7.70	±9.6 %
		Subframe=2,3,4,7,8,9)			
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
		Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL			
40.455		I FIE TOD (SC-EDMA 50% RB 10 MHz 64-0AM HI	LTE-TDD	8.54	±9.6 %
10490	AAE				,.
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %

10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.41	± 9,6 %
10493	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.55	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.37	±9.6 %
		Subframe=2,3,4,7,8,9)			
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.54	±9.6 %
10497	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.67	±9.6 %
	,,,,,,	Subframe=2,3,4,7,8,9)		1.07	10.0 %
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.40	±9.6 %
10499	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.68	± 9.6 %
10400	/	Subframe=2,3,4,7,8,9)		0.00	1 0.0 %
10500	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL	LTE-TDD	7.67	±9.6 %
10501	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.44	± 9.6 %
10001		Subframe=2,3,4,7,8,9)		0.44	I9.070
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.52	± 9.6 %
10503	0.0F	Subframe=2,3,4,7,8,9)			1000
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	±9.6 %
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.31	±9.6 %
40505	<u></u>	Subframe=2,3,4,7,8,9)			
10505	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10507	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.36	±9.6 %
10508	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.55	±9.6 %
		Subframe=2,3,4,7,8,9)		0.00	20.0 /0
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL	LTE-TDD	7.99	±9.6 %
10510	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.49	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.51	±9.6 %
10512	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)		1.1-4	2.0.0 /0
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.42	±9.6 %
				1	
1051/		Subframe=2,3,4,7,8,9)			
10514	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10515	AAA	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	LTE-TDD WLAN	8.45 1.58	
10515 10516	AAA AAA	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN	8.45 1.58 1.57	± 9.6 % ± 9.6 % ± 9.6 %
10515 10516 10517	AAA AAA AAA	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN	8.45 1.58 1.57 1.58	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10515 10516 10517 10518	AAA AAA AAA AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10515 10516 10517 10518 10519	AAA AAA AAA AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10515 10516 10517 10518 10519 10520	AAA AAA AAA AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10515 10516 10517 10518 10519 10520 10521	AAA AAA AAA AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97	$\begin{array}{c} \pm \ 9.6 \ \% \\ \pm \ 9.6 \ \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522	AAA AAA AAA AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523	AAA AAA AAA AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523	AAA AAA AAA AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524 10525	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36 8.42	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524 10525 10526	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36 8.42	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524 10525 10526 10527	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36 8.42 8.36	$\begin{array}{c} \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524 10525 10526 10527 10528 10529	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36 8.42 8.36	$\begin{array}{c} \pm \ 9.6 \ \% \\ \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524 10525 10526 10527 10528 10529	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36 8.42 8.36 8.42 8.36 8.36 8.36	$\begin{array}{c} \pm \ 9.6\ \% \\ \end{array}$
10515 10516 10517 10518 10519 10520 10521 10522 10523 10524 10525 10526 10527 10528 10529	AAA AAA AAB AAB AAB AAB AAB AAB AAB AAB	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	UTE-TDD WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	8.45 1.58 1.57 1.58 8.23 8.39 8.12 7.97 8.45 8.08 8.27 8.36 8.42 8.36	$\begin{array}{c} \pm \ 9.6 \ \% \\ \end{array}$

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40207					
10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6%
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	±9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	±9.6%
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	±9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8,69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
		cycle)		0,20	
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
		cycle)		0.10	_ 0.0 /0
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	± 9.6 %
		cycle)		0.70	10.0 %
10567	ААА	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
	,	cycle)		0.00	20.070
10568	ААА	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	± 9.6 %
	,	cycle)		0.07	
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
					20.0 /0
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
		cycle)	T T had to t	0.00	20.0 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 3.5 Mips, 90pc duty cycle)	WLAN	1.98	±9.6%
10574	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	±9.6 %
10010		cycle)	VV LPUN	0.59	1 3.0 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	± 9.6 %
10070	1000			0.00	1 3.0 %
10577	AAA	cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN	8.70	± 9.6 %
10577			VVLAIN	0.70	19.0 %
10578		cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN	04.0	1060
10070	AAA	cycle)	VVLAIN	8.49	± 9.6 %
40570	A A A		34/1-481	0.00	1069/
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN	8.36	±9.6 %
10580	٨٨٨	cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty		0.70	± 9.6 %
10000	AAA		WLAN	8.76	19.0%
10504			14/1 4 5 1	0.05	
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN	8.35	± 9.6 %
40500	A A A	cycle)	10/1 0.51	0.07	+0.00
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN	8.67	± 9.6 %
10500	445	cycle)		1 0 00	
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	±9.6%
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10586	AAB AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN WLAN	8.49	± 9.6 % ± 9.6 %
10587		LIERE AUX TIG/D WHELD GET (CEDM. 24 Mbbs. 900c duty cycle)		8.36	1 + U K %

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10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	±9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	±9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	±9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	±9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	±9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	±9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	±9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	±9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	±9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	±9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	±9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6 %
10616	AAB	IEEE 802.11ac WIFI (40MHz, MCS0, 90pc duty cycle)	WLAN	8,82	±9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	±9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±9.6%
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	±9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	±9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±9.6 %
10632	AAB	IEEE 802.11ac WiFI (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	±9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	±9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	±9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	±9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	±9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	±9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	±9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	±9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	±9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±9.6 %
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	±9.6 %
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	±9.6 %

Labelso AAKE LTE-TUD // 14 24.84 Labelso AAAA Pulse Waveform (2001+z, 20%) Test 10.00 4.9.6 % Labelso AAA Pulse Waveform (2001+z, 20%) Test 3.9.8 4.9.6 % Labelso AAA Pulse Waveform (2001+z, 20%) Test 3.9.8 4.9.6 % Labelso AAA Pulse Waveform (2001+z, 20%) Test 3.9.8 4.9.6 % Labelso AAA Pulse Waveform (2001+z, 20%) Test 3.9.7 4.9.6 % Labelso AAA Pulse Waveform (2001+z, 20%) Test 3.9.7 4.9.6 % Labelso Lisz (20011-z) Labelso S.9.6 duty cycle) WLAN 8.0.6 % Labelso Lisz (20011-z) Lisz (20011-z) S.9.6 duty cycle) WLAN 8.7.7 4.9.6 % L0773 AAA LEEE 802.1 tax (20014-z) CS6.9 Spoc duty cycle) WLAN 8.7.7 4.9.6 % L0777 AAA LEEE 802.1 tax (20014-z) CS6.9 Spoc duty cycle) WLAN 8.7.7 4.9.6 %	40055					
10669 AAA Pulse Waveform (2001z, 20%) Test 3.98 ± 9.6 % 10661 AAA Pulse Waveform (2001z, 60%) Test 2.22 ± 9.6 % 10662 AAA Pulse Waveform (2001z, 60%) Test 0.97 ± 9.6 % 10671 AAA Bluetooth Low Energy Bluetooth 2.1 ± 9.6 % 10672 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.70 ± 9.6 % 10673 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.70 ± 9.6 % 10674 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.70 ± 9.6 % 10676 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.77 ± 9.6 % 10676 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.73 ± 9.6 % 10677 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.73 ± 9.6 % 10678 AAA IEEE 802.11ax (2001tz, MCS0, Sopc duty cycle) WLAN 8.62 ± 9.6 %	10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10660 AAA Pulse Waveform (2001z, 20%). Test 3.28 ± 9.6 %. 10661 AAA Pulse Waveform (2001z, 20%). Test 0.22 ± 9.6 %. 10670 AAA Pulse Waveform (2001z, 20%). Test 0.23 ± 9.6 %. 10671 AAA IEEE B02.11ax (20M1z, MCS0, S0pc duty cycle) WLAN 9.6 %. 10671 AAA IEEE B02.11ax (20M1z, MCS3, S0pc duty cycle) WLAN 8.77 ± 9.6 %. 10673 AAA IEEE B02.11ax (20M1z, MCS3, S0pc duty cycle) WLAN 8.77 ± 9.6 %. 10676 AAA IEEE B02.11ax (20M1z, MCS3, S0pc duty cycle) WLAN 8.77 ± 9.6 %. 10677 AAA IEEE B02.11ax (20M1z, MCS4, S0pc duty cycle) WLAN 8.78 ± 9.6 %. 10677 AAA IEEE B02.11ax (20M1z, MCS1, S0pc duty cycle) WLAN 8.78 ± 9.6 %. 10678 AAA IEEE B02.11ax (20M1z, MCS1, S0pc duty cycle) WLAN 8.83 ± 9.6 %. 10680 AAA IEEE B02.11ax (20M1z, MCS1, S0pc duty cycle) WLAN 8.83						
10681 AAA Pulse Waveform (20014; 60%) Test 2.27 ± 9.6 % 10662 AAA Bluehodh. Low Energy Bluehodh 9.9 % 9.9 % 10671 AAA IEEE 602.11ax (20M14; MCS0, 90pc duly cycle) WLAN 9.0 % + 9.6 % 10672 AAA IEEE 802.11ax (20M14; MCS0, 90pc duly cycle) WLAN 8.76 + 9.6 % 10673 AAA IEEE 802.11ax (20M14; MCS0, 90pc duly cycle) WLAN 8.76 + 9.6 % 10674 AAA IEEE 802.11ax (20M14; MCS3, 90pc duly cycle) WLAN 8.77 + 9.6 % 10875 AAA IEEE 802.11ax (20M14; MCS3, 90pc duly cycle) WLAN 8.77 + 9.6 % 10976 AAA IEEE 802.11ax (20M14; MCS3, 90pc duly cycle) WLAN 8.78 + 9.6 % 10979 AAA IEEE 802.11ax (20M14; MCS1, 90pc duly cycle) WLAN 8.89 + 9.6 % 10881 AAA IEEE 802.11ax (20M14; MCS1, 90pc duly cycle) WLAN 8.82 + 9.6 % 10882 AAA IEEE 802.11ax (20M14; MCS1, 90pc duly cycle) WLAN		· · · · · · · · · · · · · · · · · · ·				
10662 AAA Pulse Waveform (2001b), 80%) Test 0.97 ± 9.65% 10670 AAA IEEE 802:11ax (200Hz, 80%) WiLAN 9.09 ± 9.65% 10071 AAA IEEE 802:11ax (200Hz, MCS1, 30pc duty cycle) WILAN 8.67 ± 9.65% 10073 AAA IEEE 802:11ax (200Hz, MCS1, 30pc duty cycle) WILAN 8.77 ± 9.65% 10073 AAA IEEE 802:11ax (200Hz, MCS3, 30pc duty cycle) WILAN 8.74 ± 9.65% 10075 AAA IEEE 802:11ax (200Hz, MCS3, 50pc duty cycle) WILAN 8.77 ± 9.65% 10076 AAA IEEE 802:11ax (200Hz, MCS3, 90pc duty cycle) WILAN 8.73 ± 9.65% 10077 AAA IEEE 802:11ax (200Hz, MCS3, 90pc duty cycle) WILAN 8.62 ± 9.65% 10678 AAA IEEE 802:11ax (200Hz, MCS1, 90pc duty cycle) WILAN 8.62 ± 9.65% 10680 AAA IEEE 802:11ax (200Hz, MCS1, 90pc duty cycle) WILAN 8.62 ± 9.65% 10681 AAA IEEE 802:11ax (200Hz, MCS1, 90pc duty cycle) WI	5					
10670 AAA Bluetooth Low Energy Bluetooth 2,19 ± 9,6 % 10071 AAA IEEE 602.11ax (20MHz, MCS1, 00pc duly cycle) WLAN 9,6 % 10072 AAA IEEE 602.11ax (20MHz, MCS3, 00pc duly cycle) WLAN 8,7 d ± 9,6 % 10074 AAA IEEE 602.11ax (20MHz, MCS3, 00pc duly cycle) WLAN 8,7 d ± 9,6 % 10075 AAA IEEE 602.11ax (20MHz, MCS3, 00pc duly cycle) WLAN 8,7 d ± 9,6 % 10076 AAA IEEE 602.11ax (20MHz, MCS5, 00pc duly cycle) WLAN 8,7 d ± 9,6 % 10077 AAA IEEE 602.11ax (20MHz, MCS1, 00pc duly cycle) WLAN 8,8 d ± 9,6 % 10678 AAA IEEE 602.11ax (20MHz, MCS1, 00pc duly cycle) WLAN 6,8 d ± 9,6 % 10681 AAA IEEE 602.11ax (20MHz, MCS1, 00pc duly cycle) WLAN 6,8 d ± 9,6 % 10682 AAA IEEE 602.11ax (20MHz, MCS1, 00pc duly cycle) WLAN 6,2 d ± 9,6 % 10684 AAA IEEE 602.11ax (20MHz, MCS1, 00pc duly cycle) WLAN						
10071 AAA IEEE 802.118x (20MHz, MCS1, 90pc duly cycle) WLAN 8,77 ± 9,6 % 10073 AAA IEEE 802.118x (20MHz, MCS1, 90pc duly cycle) WLAN 8,78 ± 9,6 % 10074 AAA IEEE 802.118x (20MHz, MCS3, 90pc duly cycle) WLAN 8,74 ± 9,6 % 10075 AAA IEEE 802.118x (20MHz, MCS4, 90pc duly cycle) WLAN 8,77 ± 9,6 % 10077 AAA IEEE 802.118x (20MHz, MCS5, 90pc duly cycle) WLAN 8,78 ± 9,6 % 10777 AAA IEEE 802.118x (20MHz, MCS6, 90pc duly cycle) WLAN 8,78 ± 9,6 % 10787 AAA IEEE 802.118x (20MHz, MCS9, 90pc duly cycle) WLAN 8,68 ± 9,6 % 10789 AAA IEEE 802.118x (20MHz, MCS9, 90pc duly cycle) WLAN 8,68 ± 9,6 % 10890 AAA IEEE 802.118x (20MHz, MCS9, 90pc duly cycle) WLAN 8,63 ± 9,6 % 10883 AAA IEEE 802.118x (20MHz, MCS9, 90pc duly cycle) WLAN 8,23 ± 9,6 % 10884 AAA IEEE 802.118x (20MHz, MCS9, 90pc duly c						
10072 AAA IEEE 802:118x (20MHz, MCS3, 90pc duty cycle) WLAN 8,67 ± 9,6 % 10074 AAA IEEE 802:118x (20MHz, MCS3, 90pc duty cycle) WLAN 8,74 ± 9,6 % 10075 AAA IEEE 802:118x (20MHz, MCS3, 90pc duty cycle) WLAN 8,77 ± 9,6 % 10076 AAA IEEE 802:118x (20MHz, MCS5, 80pc duty cycle) WLAN 8,77 ± 9,6 % 10877 AAA IEEE 802:118x (20MHz, MCS5, 80pc duty cycle) WLAN 8,73 ± 9,6 % 10878 AAA IEEE 802:118x (20MHz, MCS5, 80pc duty cycle) WLAN 8,73 ± 9,6 % 10879 AAA IEEE 802:118x (20MHz, MCS9, 80pc duty cycle) WLAN 8,64 ± 9,6 % 10861 AAA IEEE 802:118x (20MHz, MCS9, 90pc duty cycle) WLAN 8,82 ± 9,6 % 10882 AAA IEEE 802:118x (20MHz, MCS9, 90pc duty cycle) WLAN 8,82 ± 9,6 % 10884 AAA IEEE 802:118x (20MHz, MCS9, 90pc duty cycle) WLAN 8,24 ± 9,6 % 10886 AAA IEEE 802:118x (20MHz, MCS9, 90pc duty c						
10673 AAA IEEE 802:11ax (20MHz, MCS3, 90pc duty cycle) WLAN 8.78 ± 9.8 % 10675 AAA IEEE 802:11ax (20MHz, MCS4, 90pc duty cycle) WLAN 8.77 ± 9.8 % 10675 AAA IEEE 802:11ax (20MHz, MCS5, 90pc duty cycle) WLAN 8.77 ± 9.8 % 10677 AAA IEEE 802:11ax (20MHz, MCS5, 90pc duty cycle) WLAN 8.73 ± 9.6 % 10678 AAA IEEE 802:11ax (20MHz, MCS1, 90pc duty cycle) WLAN 8.69 ± 9.6 % 10780 AAA IEEE 802:11ax (20MHz, MCS1, 90pc duty cycle) WLAN 8.69 ± 9.6 % 10801 AAA IEEE 802:11ax (20MHz, MCS1, 90pc duty cycle) WLAN 6.62 ± 9.6 % 10802 AAA IEEE 802:11ax (20MHz, MCS1, 90pc duty cycle) WLAN 6.42 ± 9.6 % 10804 AAA IEEE 802:11ax (20MHz, MCS1, 90pc duty cycle) WLAN 6.42 ± 9.6 % 10804 AAA IEEE 802:11ax (20MHz, MCS3, 90pc duty cycle) WLAN 6.26 ± 9.6 % 10804 AAA IEEE 802:11ax (20MHz, MCS3, 90pc duty c						
10674 AAA IEEE 802.11ax (20MHz, MCS4.90pc duty cycle) WLAN 8.74 ± 9.6 %. 107675 AAA IEEE 802.11ax (20MHz, MCS4.90pc duty cycle) WLAN 8.77 ± 9.6 %. 10767 AAA IEEE 802.11ax (20MHz, MCS6.90pc duty cycle) WLAN 8.78 ± 9.6 %. 1077 AAA IEEE 802.11ax (20MHz, MCS6.90pc duty cycle) WLAN 8.78 ± 9.6 %. 10800 AAA IEEE 802.11ax (20MHz, MCS6.90pc duty cycle) WLAN 8.68 ± 9.6 %. 10801 AAA IEEE 802.11ax (20MHz, MCS6.90pc duty cycle) WLAN 8.68 ± 9.6 %. 10824 AAA IEEE 802.11ax (20MHz, MCS6.90pc duty cycle) WLAN 8.42 ± 9.6 %. 10845 AAA IEEE 802.11ax (20MHz, MCS3.90pc duty cycle) WLAN 8.42 ± 9.6 %. 10856 AAA IEEE 802.11ax (20MHz, MCS3.90pc duty cycle) WLAN 8.42 ± 9.6 %. 10864 AAA IEEE 802.11ax (20MHz, MCS3.90pc duty cycle) WLAN 8.25 ± 9.6 %. 10864 AAA IEEE 802.11ax (20MHz, MCS3.90pc duty cy						
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10720 AAA IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle) WLAN 8.87 ± 9.6 % 10721 AAA IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle) WLAN 8.76 ± 9.6 % 10722 AAA IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) WLAN 8.55 ± 9.6 % 10723 AAA IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) WLAN 8.70 ± 9.6 % 10724 AAA IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle) WLAN 8.90 ± 9.6 % 10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle) WLAN 8.74 ± 9.6 % 10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %						
10721 AAA IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle) WLAN 8.76 ± 9.6 % 10722 AAA IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) WLAN 8.55 ± 9.6 % 10723 AAA IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) WLAN 8.70 ± 9.6 % 10724 AAA IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle) WLAN 8.90 ± 9.6 % 10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle) WLAN 8.74 ± 9.6 % 10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %						
10722 AAA IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) WLAN 8.55 ± 9.6 % 10723 AAA IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle) WLAN 8.70 ± 9.6 % 10724 AAA IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle) WLAN 8.90 ± 9.6 % 10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle) WLAN 8.74 ± 9.6 % 10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %		1				
10723 AAA IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle) WLAN 8.70 ± 9.6 % 10724 AAA IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle) WLAN 8.90 ± 9.6 % 10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle) WLAN 8.74 ± 9.6 % 10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %						
10724 AAA IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle) WLAN 8.90 ± 9.6 % 10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle) WLAN 8.74 ± 9.6 % 10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %						
10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle) WLAN 8.74 ± 9.6 % 10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %		<u> </u>			£	
10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle) WLAN 8.72 ± 9.6 %						
10/2/ AAA IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle) WLAN 8.66 ± 9.6 %						
	10/27	AAA	LEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	±9.6%

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				-	
10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	±9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	±9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.6 %
10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10733	AAA	IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)	WLAN	8.40	±9.6 %
10734	AAA	IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10735	AAA	IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)	WLAN	8.33	±9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.6 %
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8.42	±9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	±9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)	WLAN	8.40	±9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	±9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	±9.6 %
10744	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	±9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	±9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	±9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	±9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.93	±9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN	8.90	±9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN	9.00	±9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)	WLAN	8.94	±9.6 %
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.64	±9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	±9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	±9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	±9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	±9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8.49	±9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	±9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.49	±9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	±9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	±9.6%
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	±9.6 %

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

Calibration Laboratory of

Client

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

IBC MRA



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PC Test

Certificate No: EX3-7410_Jul19

Accreditation No.: SCS 0108

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7410
Calibration procedure(s)	QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7 Calibration procedure for dosimetric E-field probes
Calibration date:	July 16, 2019
This calibration certificate doc The measurements and the ur	uments the traceability to national standards, which realize the physical units of measurements (SI). Incertainties 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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check; Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	$\rightarrow - lb$
		ζ	-F-G-
Approved by:	Katja Pokovic	Technical Manager	V
			At 45
			Issued: July 16, 2019

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

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst

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 - S 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
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization 9	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center),
	i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 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 ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

Basic Calibration Parameters

· · · · · · · · · · · · · · · · · · ·	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) ²) ^A	0.41	0.47	0.43	± 10.1 %
DCP (mV) ^B	95.0	98.5	98.3	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	C	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	143.3	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		136.3	1	
		Z	0.00	0.00	1.00		146.3	1	
10352-	Pulse Waveform (200Hz, 10%)	X	7.20	77.00	15.83	10.00	60.0	± 3.7 %	± 9,6 %
AAA		Y	15.00	89.41	20.45		60.0	1	
		Z	15.00	86.58	19,43		60.0	1	
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	85.70	17.13	6.99	80.0	± 2.7 %	± 9.6 %
AAA		Y	15.00	94.26	21.82		80.0	1	
		Z	15.00	87.46	18.36		80.0	1	
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	84.98	15.02	3.98	95.0	± 1.4 %	± 9.6 %
AAA		Y	15.00	105.63	25.93	1	95.0	1	
		Z	15.00	86.91	16.30		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	0.58	63.48	6.70	2.22	120.0	± 1.4 %	±9.6 %
AAA		Y	15.00	128.91	35.05		120.0		
		Z	1.67	69.27	9.07		120.0		
10387-	QPSK Waveform, 1 MHz	X	0.58	60.52	7.75	0.00	150.0	± 2.7 %	± 9.6 %
AAA		Y	1.10	67.31	12.60		150.0		
		Z	0.65	60.71	8.42		150,0		
10388-	QPSK Waveform, 10 MHz	X	2.25	68.70	16.13	0.00	150.0	± 1.1 %	± 9.6 %
AAA		Y	2.69	71.62	17.77		150.0		
		Z	2.10	66.95	14.95		150.0		
10396-	64-QAM Waveform, 100 kHz	X	2.85	69.56	18.52	3.01	150.0	±0.7%	± 9.6 %
AAA		Y	3.27	72.43	19.82		150.0		
		Z	2.96	69.30	18.13		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.51	67.28	15.99	0.00	150.0	± 2.2 %	± 9.6 %
AAA		Y	3.73	68.43	16.68		150.0		
		Z	3.45	66.65	15.48		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.86	65.74	15.76	0.00	150.0	± 4.2 %	± 9.6 %
AAA		Y	5.02	66.29	16.07		150.0		
		Z	4.91	65.47	15.50		150.0		

Note: For details on UID parameters see Appendix

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

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

Sensor Model Parameters

	C1 fF	C2 fF	a V ⁻¹	T1 ms.V ⁻²	T2 ms.V⁻¹	T3 ms	T4 V ⁻²	T5 V⁻1	Т6
Х	44.0	341.99	38.28	7.82	0.67	5.04	0.00	0.55	1.01
Y	48.3	362.63	36.17	12.06	0.12	5.10	0.87	0.38	1.01
Z	52.1	408.62	38.63	10.30	0.68	5.08	0.00	0.64	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	0.7
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

J ••• •••								
f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	41.9	0.89	9.95	9.95	9.95	0.69	0.80	± 12.0 %
835	41.5	0.90	9.88	9.88	9.88	0.51	0.80	± 12.0 %
1750	40.1	1.37	8.46	8.46	8.46	0.33	0.86	± 12.0 %
1900	40.0	1.40	8.11	8.11	8.11	0.35	0.86	± 12.0 %
2300	39.5	1.67	7.91	7.91	7.91	0.34	0.90	± 12.0 %
2450	39.2	1.80	7.47	7.47	7.47	0.37	0.90	± 12.0 %
2600	39.0	1.96	7.33	7.33	7.33	0.39	0.90	± 12.0 %
5250	35.9	4.71	5.46	5.46	5.46	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.05	5.05	5.05	0.40	1.80	± 13.1 %

Calibration Parameter Determined in Head Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

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

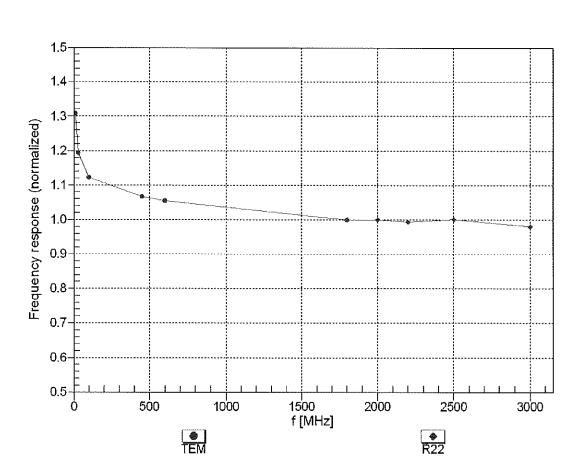
f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	55.5	0.96	10.01	10.01	10.01	0.48	0.84	± 12.0 %
835	55.2	0.97	9.79	9.79	9.79	0.48	0.80	± 12.0 %
1750	53.4	1.49	8.08	8.08	8.08	0.38	0.86	± 12.0 %
1900	53.3	1.52	7.78	7.78	7.78	0.42	0.86	± 12.0 %
2300	52.9	1.81	7.68	7.68	7.68	0.43	0.90	± 12.0 %
2450	52.7	1.95	7.44	7.44	7.44	0.33	0.90	± 12.0 %
2600	52.5	2.16	7.43	7.43	7.43	0.33	0.80	± 12.0 %
5250	48.9	5.36	4.95	4.95	4.95	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.42	4.42	4.42	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.60	4.60	4.60	0.50	1.90	± 13.1 %

Calibration Parameter Determined in Body Tissue Simulating Media

^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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

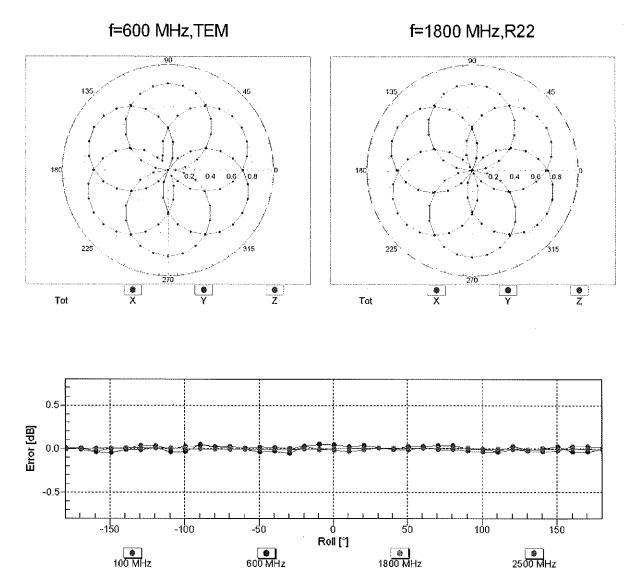
 6 Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than \pm 1% for frequencies below 3 GHz and below \pm 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from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



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

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

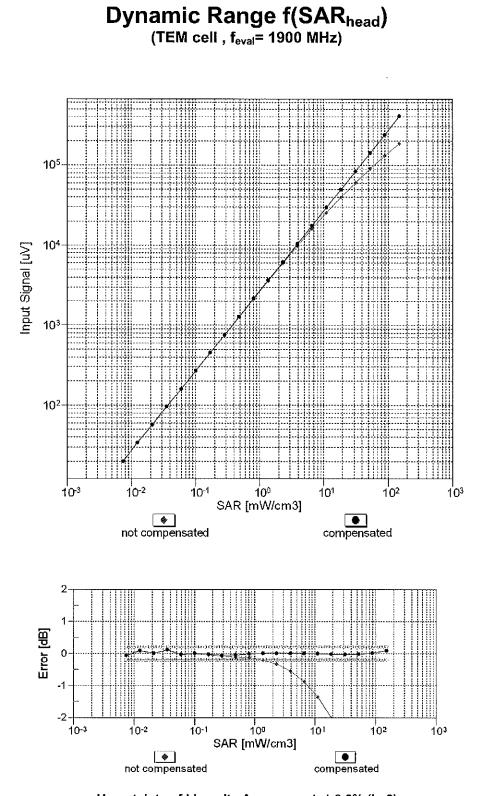
July 16, 2019



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

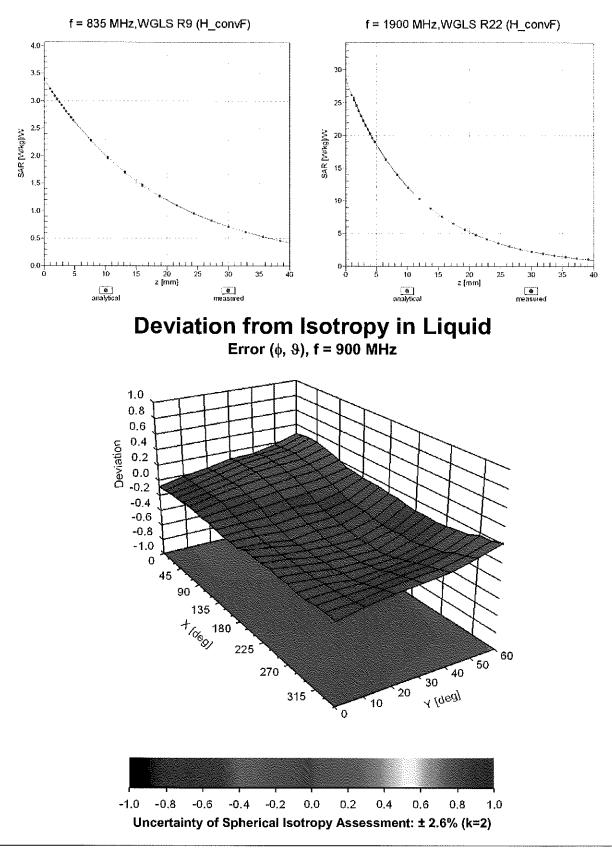
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

July 16, 2019



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

Certificate No: EX3-7410_Jul19



Conversion Factor Assessment

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR	Unc ^E
		_		(dB)	(k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	±9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	±9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6%
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	±9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	±9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	±9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6%
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3,98	± 9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	±9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	±9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
1 10100		LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

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10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6,59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8,13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6,49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	$\pm 9.6\%$
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	$\pm 9.6\%$
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 % ± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 % ± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD		
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)		5.82	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.43	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	6.58	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, (LFSR)	LTE-FDD	5.46	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.21	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 10% RB, 1.4 MHz, 04-QAM)	LTE-FDD	6.79	± 9.6 %
10103	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	5.73	± 9.6 %
10170	AAE	LTE EDD (SC EDMA, 1 RB, 20 MILE, 04 OAM)	LTE-FDD	6.52	± 9.6 %
10172	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172		LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	±9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	±9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %
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