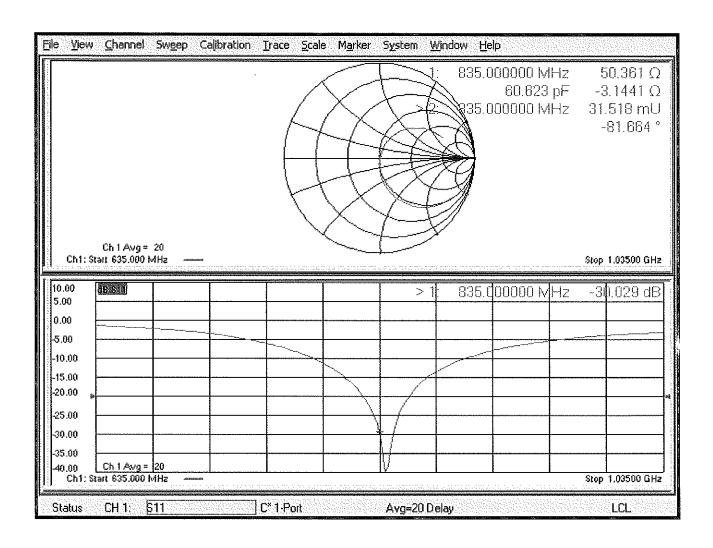
# Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 13.01.2020

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 835 MHz

Medium parameters used: f = 835 MHz;  $\sigma = 0.99 \text{ S/m}$ ;  $\varepsilon_r = 55.1$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

• Probe: EX3DV4 - SN7349; ConvF(10.16, 10.16, 10.16) @ 835 MHz; Calibrated: 31.12.2019

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 27.12.2019

Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005

DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

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

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

Reference Value = 60.64 V/m; Power Drift = -0.00 dB

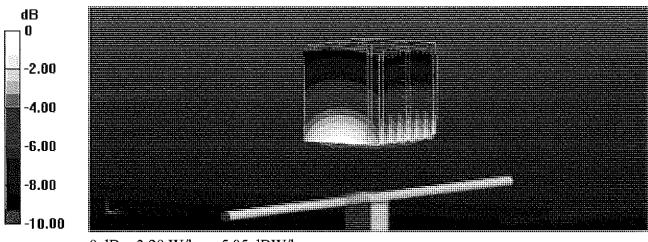
Peak SAR (extrapolated) = 3.71 W/kg

### SAR(1 g) = 2.53 W/kg; SAR(10 g) = 1.68 W/kg

Smallest distance from peaks to all points 3 dB below = 16.2 mm

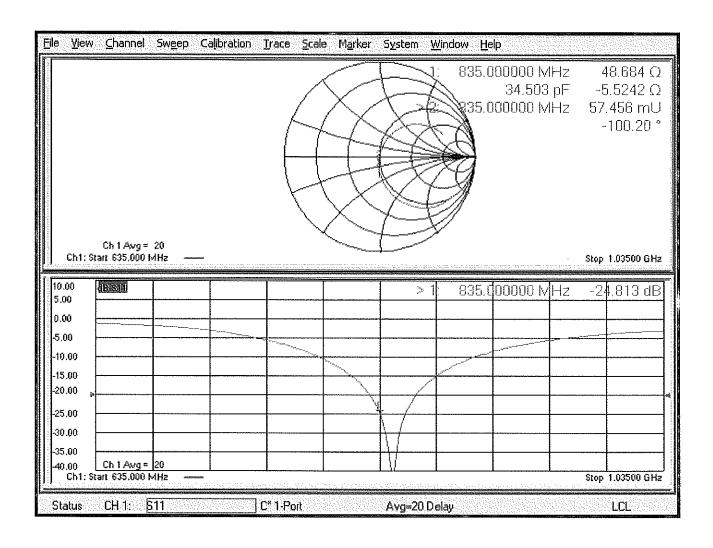
Ratio of SAR at M2 to SAR at M1 = 68.2%

Maximum value of SAR (measured) = 3.33 W/kg



0 dB = 3.20 W/kg = 5.05 dBW/kg

# Impedance Measurement Plot for Body TSL



# Appendix: Transfer Calibration at Four Validation Locations on SAM Head<sup>1</sup>

### **Evaluation Condition**

Phantom	SAM Head Phantom	For usage with cSAR3D <b>V2</b> -R/L
---------	------------------	--------------------------------------

# SAR result with SAM Head (Top $\cong$ C0)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	9.34 W/kg ± 17.5 % (k=2)
SAR averaged ever 10 cm <sup>3</sup> /10 g) of Head TSI	a and thon	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR for nominal Head TSL parameters	normalized to 1W	6.19 W/ka ± 16.9 % (k=2)

### SAR result with SAM Head (Mouth ≅ F90)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	9.80 W/kg ± 17.5 % (k=2)
	1	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	

# SAR result with SAM Head (Neck ≅ H0)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition		
SAR for nominal Head TSL parameters	normalized to 1W	9.32 W/kg ± 17.5 % (k=2)	
SAR averaged over 10 cm³ (10 g) of Head TSL	condition		

# SAR result with SAM Head (Ear ≅ D90)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	8.01 W/kg ± 17.5 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	condition	

Certificate No: D835V2-4d132\_Jan20

Additional assessments outside the current scope of SCS 0108

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





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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: D1750V2-1148\_May19

# **CALIBRATION CERTIFICATE**

Object

D1750V2 - SN:1148

Calibration procedure(s)

QA CAL-05.v11

Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

05-23-20

Calibration date:

May 15, 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: 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	31-Dec-18 (No. EX3-7349_Dec18)	Dec-19
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:	Leif Klysner	Laboratory Technician	Seif Algan
Approved by:	Katja Pokovic	Technical Manager	AU.

Issued: May 15, 2019

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

Certificate No: D1750V2-1148\_May19

### **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

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%.

Certificate No: D1750V2-1148\_May19 Page 2 of 11

# **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 = 5.0 mm	
Frequency	1750 MHz ± 1 MHz	

### **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.34 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	<b></b>	

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.0 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.83 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.5 W/kg ± 16.5 % (k=2)

### **Body TSL parameters**

The following parameters and calculations were applied.

<u> </u>	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.35 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	37.7 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.93 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	19.8 W/kg ± 16.5 % (k=2)

Certificate No: D1750V2-1148\_May19 Page 3 of 11

### Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.4 Ω - 0.2 jΩ
Return Loss	- 37.0 dB

### **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	47.4 Ω - 0.5 jΩ
Return Loss	- 31.4 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.222 ns

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

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

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

#### **Additional EUT Data**

Manufactured by SPEAG
-----------------------

# Appendix (Additional assessments outside the scope of SCS 0108)

### **Measurement Conditions**

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

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

### SAR result with SAM Head (Top)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.9 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.3 W/kg ± 16.9 % (k=2)

# **SAR result with SAM Head (Mouth)**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.8 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.3 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Neck)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	36.6 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.95 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.9 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Ear)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	7.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	28.7 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	3.98 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	16.0 W/kg ± 16.9 % (k=2)

Certificate No: D1750V2-1148\_May19

#### **DASY5 Validation Report for Head TSL**

Date: 08.05.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1148

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: f = 1750 MHz;  $\sigma = 1.34$  S/m;  $\varepsilon_r = 40$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.59, 8.59, 8.59) @ 1750 MHz; Calibrated: 31.12.2018

• 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(1495); SEMCAD X 14.6.12(7450)

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

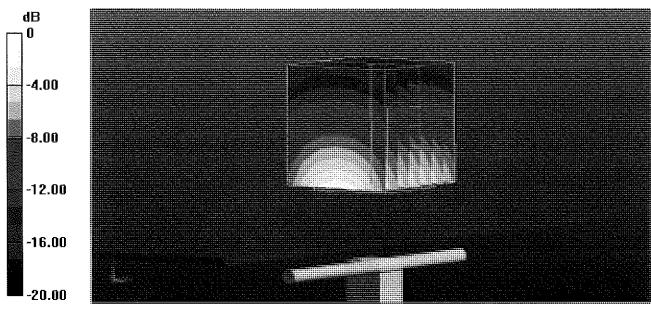
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.8 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 16.7 W/kg

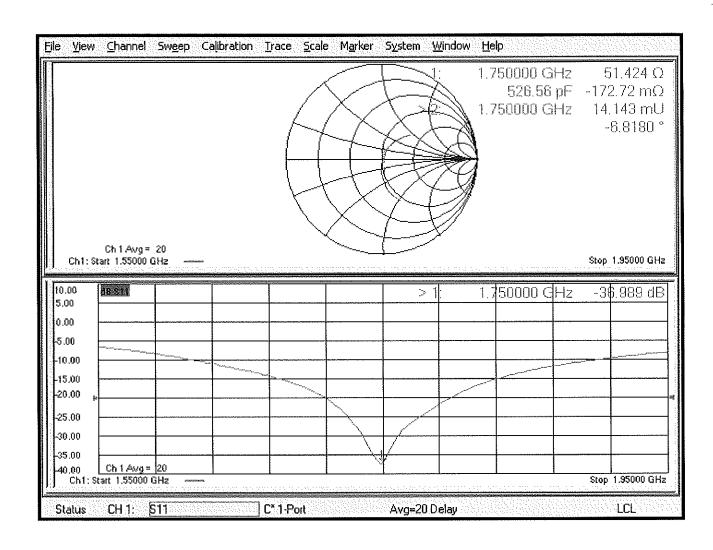
SAR(1 g) = 9.13 W/kg; SAR(10 g) = 4.83 W/kg

Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dBW/kg

# Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 08.05,2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1148

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: f = 1750 MHz;  $\sigma = 1.47 \text{ S/m}$ ;  $\varepsilon_r = 53.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### **DASY52 Configuration:**

Probe: EX3DV4 - SN7349; ConvF(8.43, 8.43, 8.43) @ 1750 MHz; Calibrated: 31.12.2018

• 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(1495); SEMCAD X 14.6.12(7450)

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

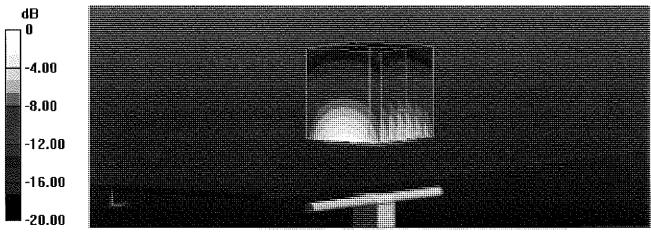
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.1 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 17.2 W/kg

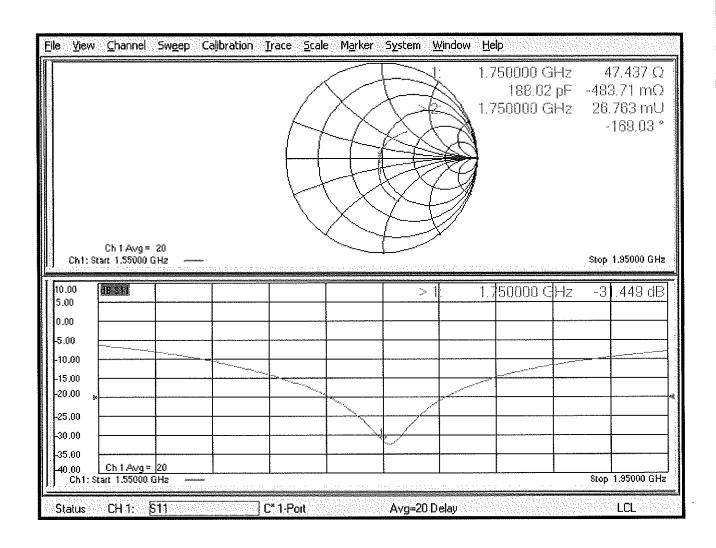
SAR(1 g) = 9.35 W/kg; SAR(10 g) = 4.93 W/kg

Maximum value of SAR (measured) = 14.4 W/kg



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

# Impedance Measurement Plot for Body TSL



### **DASY5 Validation Report for SAM Head**

Date: 15.05.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1148

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: f = 1750 MHz;  $\sigma = 1.37 \text{ S/m}$ ;  $\varepsilon_r = 42.1$ ;  $\rho = 1000 \text{ kg/m}^3$ 

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

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.59, 8.59, 8.59) @ 1750 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- · Phantom: SAM Head
- DASY52 52.10.2(1495); SEMCAD X 14.6,12(7450)

### SAM Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.2 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 9.38 W/kg; SAR(10 g) = 5.04 W/kg

Maximum value of SAR (measured) = 14.2 W/kg

### SAM Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 104.7 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 16.5 W/kg

SAR(1 g) = 9.34 W/kg; SAR(10 g) = 5.04 W/kg

Maximum value of SAR (measured) = 13.9 W/kg

#### SAM Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.3 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 15.5 W/kg

SAR(1 g) = 9.06 W/kg; SAR(10 g) = 4.95 W/kg

Maximum value of SAR (measured) = 13.1 W/kg

#### SAM Head/Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

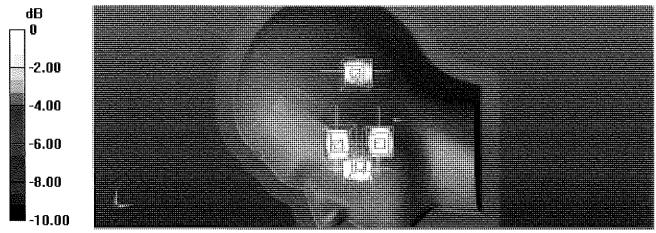
Reference Value = 90.82 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 12.0 W/kg

SAR(1 g) = 7.11 W/kg; SAR(10 g) = 3.98 W/kg

Maximum value of SAR (measured) = 10.2 W/kg

Certificate No: D1750V2-1148\_May19



0 dB = 10.2 W/kg = 10.09 dBW/kg

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





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

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The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client

C Test

Certificate No: D1750V2-1150\_Oct18

CALIBRATION CERTIFICATE		
Object	D1750V2 - SN:1150	
Calibration procedure(s)	OA CAL-05 v10 Calibration procedure for dipole validation kits above 700 MHz	
Calibration date:	October 22, 2018	

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).

The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dsc-18
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-18)	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	MNOSET
Approved by:	Katja Pokovic	Technical Manager	WKC-

issued: October 22, 2018

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

Certificate No: D1750V2-1150\_Oct18

Page 1 of 8

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Accreditation No.: SCS 0108

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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	1750 MHz ± 1 MHz	

# **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.8 ± 6 %	1.33 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	36.5 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.76 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.2 W/kg ± 16.5 % (k=2)

# **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.46 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.04 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	36.6 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.82 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	19.4 W/kg ± 16.5 % (k=2)

Certificate No: D1750V2-1150\_Oct18 Page 3 of 8

### Appendix (Additional assessments outside the scope of SCS 0108)

#### **Antenna Parameters with Head TSL**

Impedance, transformed to feed point	50.9 Ω - 0.4 jΩ
Return Loss	- 40.1 dB

### **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	46.6 Ω - 0.1 jΩ
Return Loss	- 29.2 dB

### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.217 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	April 10, 2015

### **DASY5 Validation Report for Head TSL**

Date: 22.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1150

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: f = 1750 MHz;  $\sigma = 1.33 \text{ S/m}$ ;  $\varepsilon_r = 38.8$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.5, 8.5, 8.5) @ 1750 MHz; Calibrated: 30.12.2017

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electromics: DAE4 Sn601; Calibrated: 04.10.2018

• Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001

• DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

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

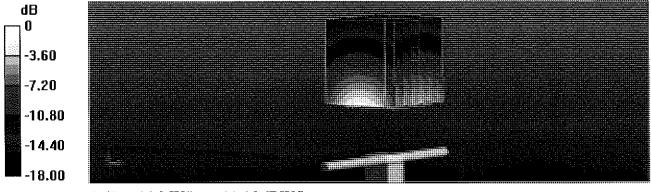
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 108.1 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 16.7 W/kg

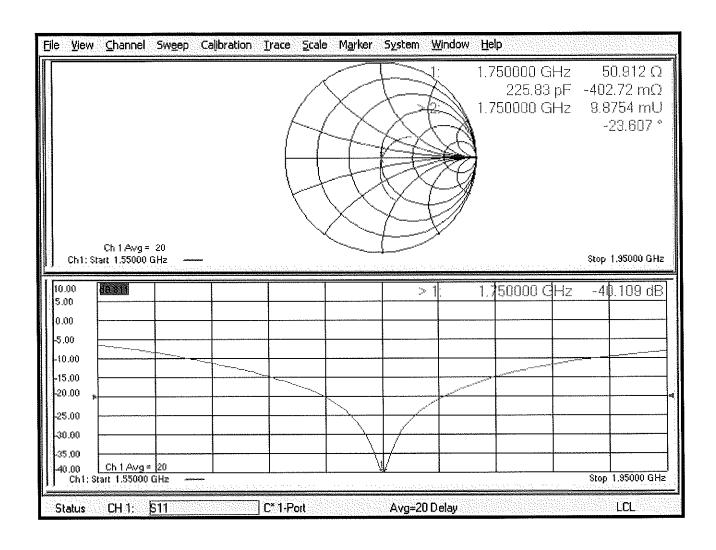
SAR(1 g) = 9.02 W/kg; SAR(10 g) = 4.76 W/kg

Maximum value of SAR (measured) = 14.0 W/kg



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

### Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 22.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1150

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: f = 1750 MHz;  $\sigma = 1.46 \text{ S/m}$ ;  $\varepsilon_r = 53.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

• Probe: EX3DV4 - SN7349; ConvF(8.35, 8.35, 8.35) @ 1750 MHz; Calibrated: 30.12.2017

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 04.10.2018

Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002

DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

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

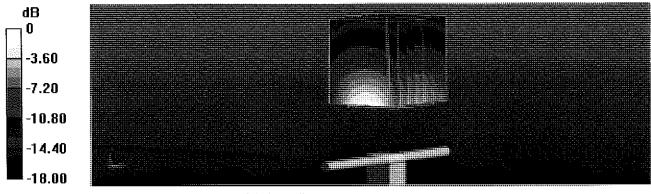
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.1 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 16.0 W/kg

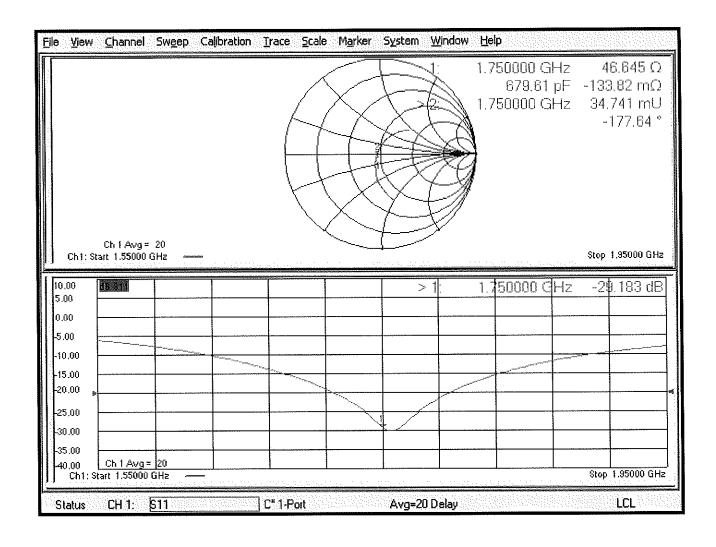
SAR(1 g) = 9.04 W/kg; SAR(10 g) = 4.82 W/kg

Maximum value of SAR (measured) = 13.6 W/kg



0 dB = 13.6 W/kg = 11.34 dBW/kg

# Impedance Measurement Plot for Body TSL



# 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 D1750V2 – SN:1150

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

Extended Calibration date: October 18, 2019

Description: SAR Validation Dipole at 1750 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 Dielectric Assessment Kit	8/13/2019	Annual	8/13/2020	1041
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	11/20/2018	Annual	11/20/2019	1039008
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
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
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	8/16/2019	Annual	8/16/2020	7308
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/14/2019	Annual	8/14/2020	1450

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 = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	20K

Object:	Date Issued:	Page 1 of 4
D1750V2 - SN:1150	10/18/2019	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:

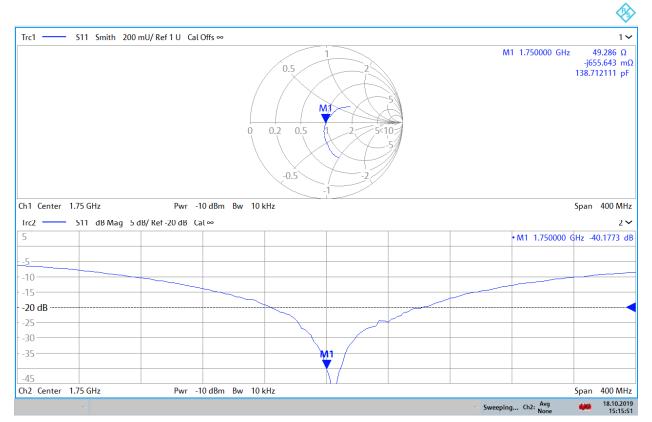
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  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		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
10/22/2018	10/18/2019	1.217	3.65	3.8	4.11%	1.92	2	4.17%	50.9	49.3	1.6	0.4	-0.7	1.1	-40.1	-40.2	-0.20%	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		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
10/22/2018	10/18/2019	1.217	3.66	3.82	4.37%	1.94	2.02	4.12%	46.6	44.7	1.9	-0.1	-0.8	0.7	-29.2	-25	14.40%	PASS

Object:	Date Issued:	Page 2 of 4	
D1750V2 - SN:1150	10/18/2019	Fage 2 01 4	

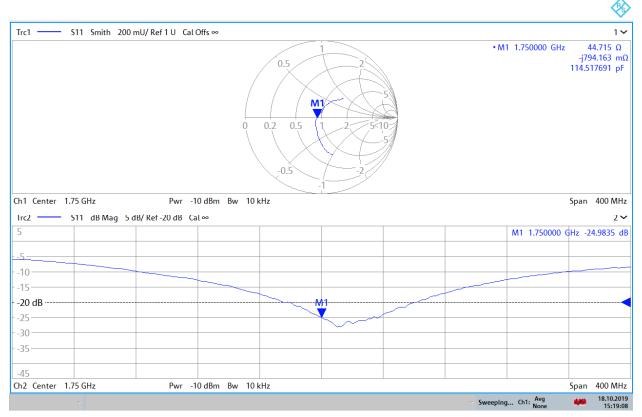
#### Impedance & Return-Loss Measurement Plot for Head TSL



15:15:52 18.10.2019

Object:	Date Issued:	Page 3 of 4
D1750V2 - SN:1150	10/18/2019	raye 3 01 4

### Impedance & Return-Loss Measurement Plot for Body TSL



15:19:09 18.10.2019

Object:	Date Issued:	Page 4 of 4
D1750V2 - SN:1150	10/18/2019	Page 4 of 4

# Calibration Laboratory of

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





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

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client

PC Test

Certificate No: D1900V2=5d148\_Feb19

		.Ce	milicate No: E/1900V/2-50 148 FED 19
CALIBRATION C	ERTIFICATI		
Object	D1900V2 - SN:5	d148	
Calibration procedure(s)	QA CAL-05.v11 Calibration Proc	edure for SAR Validation	Sources between 0.7-3 GHz
Calibration date:	February 21, 20	<b>(9</b>	Physical units of measurements (SI). $0.2-26-2$
This calibration certificate docume The measurements and the uncert	nts the traceability to nat tainties with confidence p	ional standards, which realize the p probability are given on the followin	physical units of measurements (SI). 02-26-2 g pages and are part of the certificate.
All calibrations have been conduct			
Calibration Equipment used (M&TE	E critical for calibration)		
Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Callbration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/0267	73) 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
ype-N mlsmatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	31-Dec-18 (No. EX3-7349_Dec	
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct1	· · · · · · · · · · · · · · · · · · ·
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
ower meter E4419B	SN: GB39512475	07-Oct-15 (in house check Feb-	*·····································
ower sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-	,
ower sensor HP 8481A	SN: MY41092317	07-Oct-15 (In house check Oct-	,
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-	
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-	·
	Nome	سر	
Colibrated but	Name	Function	Signature
Calibrated by:	Manu Seltz	Laboratory Technici	lan J
Approved by:	Kalja Pokovic	Technical Manager	
<b></b> 40			Issued: February 21, 2019

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

Certificate No: D1900V2-5d148\_Feb19

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### **Calibration Laboratory of**

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





S Schweizerischer Kalibrierdienst
Service suisse d'étalonnage
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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

#### Glossary:

TSL

tissue simulating liquid

ConvF N/A sensitivity in TSL / NORM x,y,z

not applicable or not measured

### Calibration is Performed According to the Following Standards:

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

Certificate No: D1900V2-5d148\_Feb19

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### **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	1900 MHz ± 1 MHz	

# **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.65 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.1 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.4 W/kg ± 16.5 % (k=2)

# **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity 1.52 mho/m	
Nominal Body TSL parameters	22.0 °C	53.3		
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.6 ± 6 %	1.47 mho/m ± 6 %	
Body TSL temperature change during test	< 0.5 °C			

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.56 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	39.1 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.5 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω + 6.8 jΩ
Return Loss	- 23.2 dB

# **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	$48.4 \Omega + 7.8 j\Omega$	
Return Loss	- 21.9 dB	

### General Antenna Parameters and Design

Electrical Delay (one direction)	4 4 <b>=</b> 0
Licetical Delay (one direction)	1.170 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
-	

### **DASY5 Validation Report for Head TSL**

Date: 21.02,2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used: f = 1900 MHz;  $\sigma = 1.38 \text{ S/m}$ ;  $\varepsilon_r = 40.9$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### **DASY52 Configuration:**

Probe: EX3DV4 - SN7349; ConvF(8.26, 8.26, 8.26) @ 1900 MHz; Calibrated: 31.12.2018

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 04.10.2018

Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001

DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

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

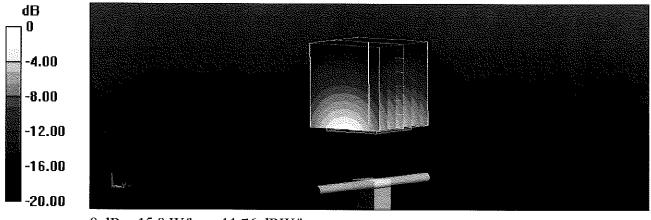
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 109.4 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 17.8 W/kg

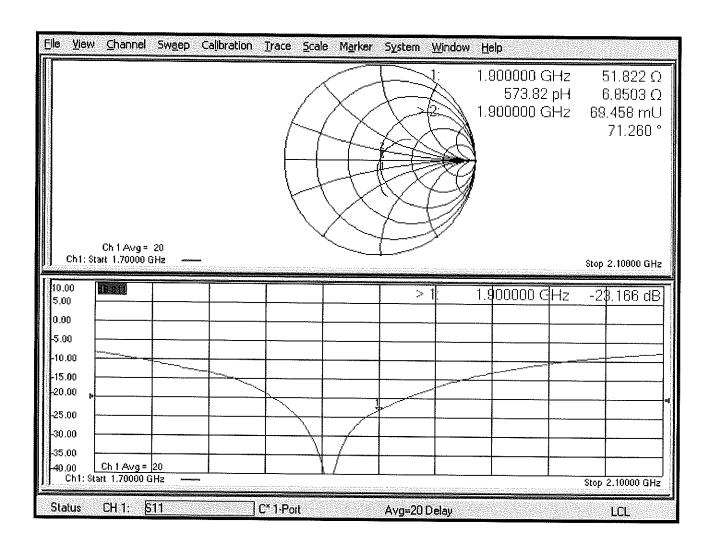
SAR(1 g) = 9.65 W/kg; SAR(10 g) = 5.05 W/kg

Maximum value of SAR (measured) = 15.0 W/kg



0 dB = 15.0 W/kg = 11.76 dBW/kg

# Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 21.02.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used: f = 1900 MHz;  $\sigma = 1.47 \text{ S/m}$ ;  $\varepsilon_r = 53.6$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.23, 8.23, 8.23) @ 1900 MHz; Calibrated: 31.12.2018

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 04.10,2018

Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002

DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

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

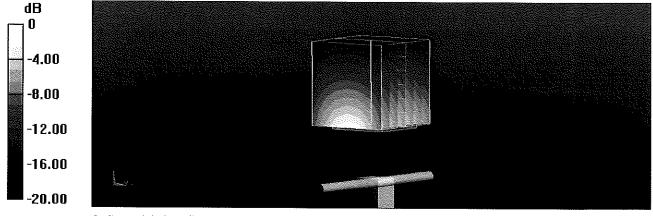
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.7 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 17.0 W/kg

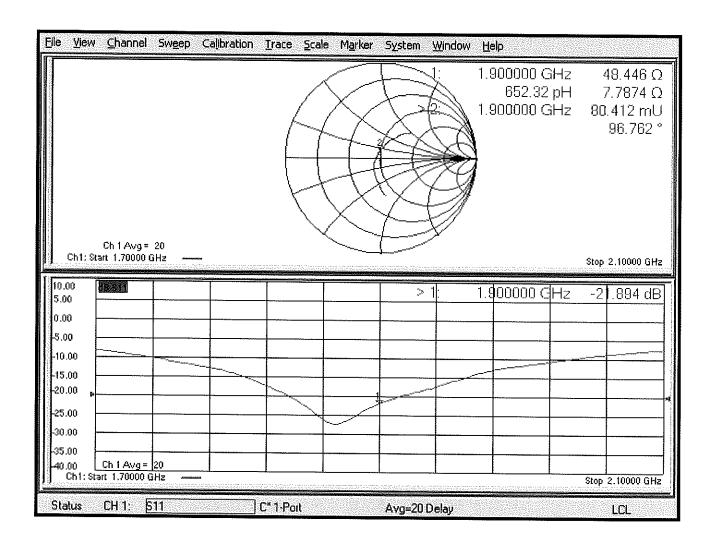
SAR(1 g) = 9.56 W/kg; SAR(10 g) = 5.05 W/kg

Maximum value of SAR (measured) = 14.4 W/kg



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

# Impedance Measurement Plot for Body TSL



#### **PCTEST**



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 D1900V2 – SN: 5d148

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

Extension Calibration date: 2/21/2020

Description: SAR Validation Dipole at 1900 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	12/17/2019	Annual	12/17/2020	941001
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	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322

# Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	306

Object:	Date Issued:	Page 1 of 4
D1900V2 - SN: 5d148	02/21/2020	

## **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:

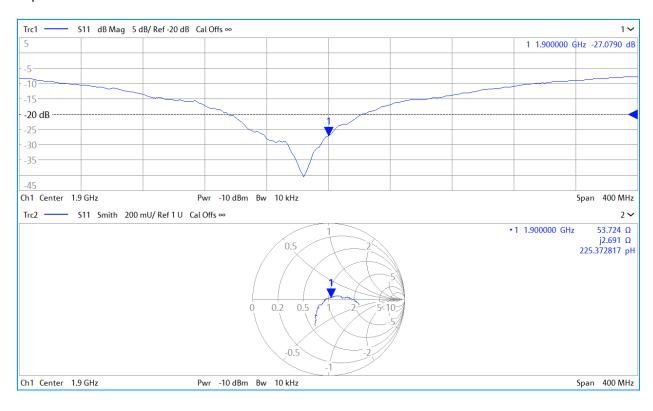
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

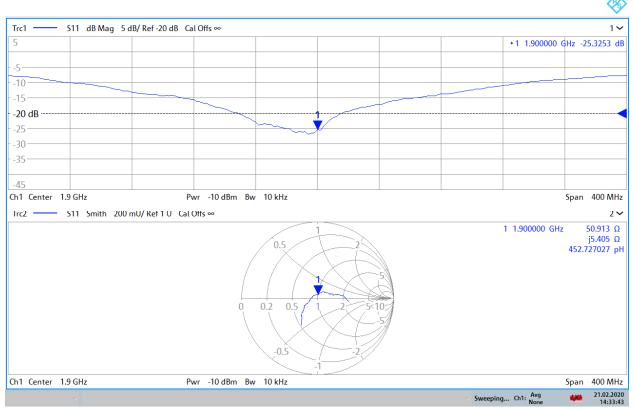
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(40-) M(4 ©	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (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
2/21/2019	2/21/2020	1.17	3.91	4.15	6.14%	2.04	2.13	4.41%	51.8	53.7	1.9	6.8	2.7	4.1	-23.2	-27.1	-16.70%	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	(40-) M(4 @	Deviation 10g (%)		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
2/21/2019	2/21/2020	1.17	3.91	4.06	3.84%	2.05	2.08	1.46%	48.4	50.9	2.5	7.8	5.4	2.4	-21.9	-25.3	-15.60%	PASS

Object:	Date Issued:	Page 2 of 4	
D1900V2 - SN: 5d148	02/21/2020	Faye 2 01 4	

#### Impedance & Return-Loss Measurement Plot for Head TSL



## Impedance & Return-Loss Measurement Plot for Body TSL



14:33:44 21.02.2020

Object:	Date Issued:	Page 4 of 4
D1900V2 - SN: 5d148	02/21/2020	Page 4 of 4

## 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

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client

**PC Test** 

Certificate No: D1900V2-5d149\_Oct18

Object	D1900V2-SN:50	1149	
	and the trade material expension readings		
Calibration procedure(s)	QA CAL-05.v10	dura for dipola validation bits abo	wo 700 MB>
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	•	ional standards, which realize the physical uni	• •
he measurements and the uncert	tainties with confidence p	robability are given on the following pages an	d are part of the certificate.
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ui caidiations have been conque	ed in the closed laborato	ry facility: environment temperature (22 ± 3)°C	Jana numidity < 70%.
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Primary Standards	1	Cal Date (Certificate No.) 04-Apr-18 (No. 217-02672/02673)	Scheduled Calibration Apr-19
Primary Standards Power meter NRP	ID#		
Primary Standards Power meter NRP Power sensor NRP-Z91	ID# SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91	ID # SN: 104778 SN: 103244	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672)	Apr-19 Apr-19
Calibration Equipment used (M&TI Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination	ID # SN: 104778 SN: 103244 SN: 103245	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673)	Apr-19 Apr-19 Apr-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k)	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682)	Apr-19 Apr-19 Apr-19 Apr-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18) Check Date (in house)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19 Scheduled Check
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4  Secondary Standards Power meter EPM-442A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19 Scheduled Check In house check: Oct-20
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19 Scheduled Check In house check: Oct-20 In house check: Oct-20
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19 Scheduled Check In house check: Oct-20 In house check: Oct-20 In house check: Oct-20
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter EPM-442A Power sensor HP 8481A Recomer sensor HP 8481A Recomer sensor HP 8481A Recomer sensor HP 8481A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18) 15-Jun-15 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19  Scheduled Check In house check: Oct-20
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19 Scheduled Check In house check: Oct-20 In house check: Oct-20 In house check: Oct-20
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18) 15-Jun-15 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19  Scheduled Check In house check: Oct-20
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US41080477	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18) 15-Jun-15 (in house check Oct-18) 31-Mar-14 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19  Scheduled Check In house check: Oct-20 In house check: Oct-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US41080477  Name	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18) 15-Jun-15 (in house check Oct-18) 31-Mar-14 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19  Scheduled Check In house check: Oct-20 In house check: Oct-19
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	ID #  SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601  ID #  SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US41080477  Name	04-Apr-18 (No. 217-02672/02673) 04-Apr-18 (No. 217-02672) 04-Apr-18 (No. 217-02673) 04-Apr-18 (No. 217-02682) 04-Apr-18 (No. 217-02683) 30-Dec-17 (No. EX3-7349_Dec17) 04-Oct-18 (No. DAE4-601_Oct18)  Check Date (in house) 07-Oct-15 (in house check Oct-18) 07-Oct-15 (in house check Oct-18) 15-Jun-15 (in house check Oct-18) 31-Mar-14 (in house check Oct-18)	Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Apr-19 Dec-18 Oct-19  Scheduled Check In house check: Oct-20 In house check: Oct-19

Certificate No: D1900V2-5d149\_Oct18

Page 1 of 8

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





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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

Glossary:

TSL

tissue simulating liquid

ConvF N/A sensitivity in TSL / NORM x,y,z

not applicable or not measured

## Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- 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	1900 MHz ± 1 MHz	

## **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		MALE

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.80 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.3 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.5 W/kg ± 16.5 % (k=2)

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.9 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

## **SAR** result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	39.4 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.7 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	52.9 Ω + 6.3 jΩ
Return Loss	- 23,4 dB

## **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	48.5 Ω + 8.2 jΩ
Return Loss	- 21.5 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.193 ns

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

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

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

#### **Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	March 11, 2011

Certificate No: D1900V2-5d149\_Oct18

## **DASY5 Validation Report for Head TSL**

Date: 23.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

## DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d149

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used: f = 1900 MHz;  $\sigma = 1.4 \text{ S/m}$ ;  $\varepsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.18, 8.18, 8.18) @ 1900 MHz; Calibrated: 30.12.2017

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 04.10.2018

Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001

DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

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

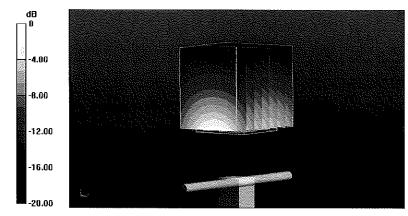
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 110.0 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 18.5 W/kg

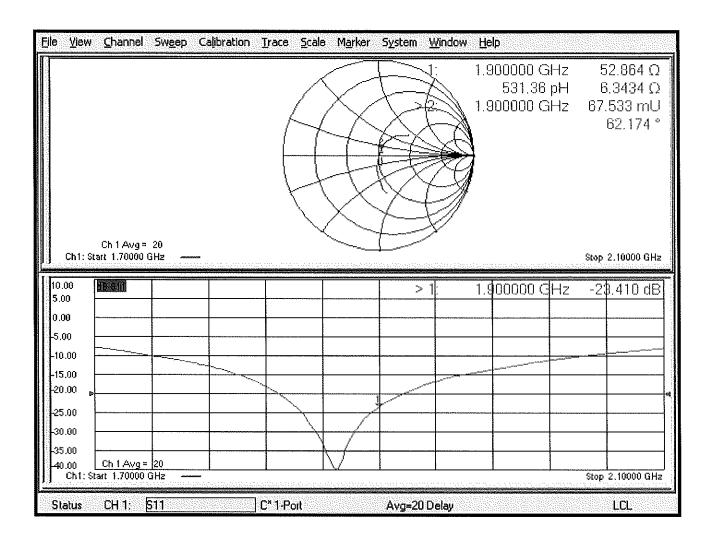
SAR(1 g) = 9.8 W/kg; SAR(10 g) = 5.11 W/kg

Maximum value of SAR (measured) = 15.4 W/kg



0 dB = 15.4 W/kg = 11.88 dBW/kg

## Impedance Measurement Plot for Head TSL



#### **DASY5 Validation Report for Body TSL**

Date: 23,10,2018

Test Laboratory: SPEAG, Zurich, Switzerland

## DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d149

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used: f = 1900 MHz;  $\sigma = 1.47 \text{ S/m}$ ;  $\varepsilon_r = 52.9$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.15, 8.15, 8.15) @ 1900 MHz; Calibrated: 30.12.2017

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 04.10.2018

• Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002

• DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

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

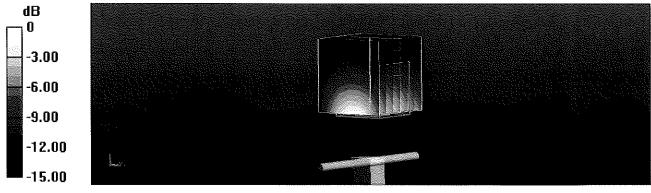
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.1 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 17.5 W/kg

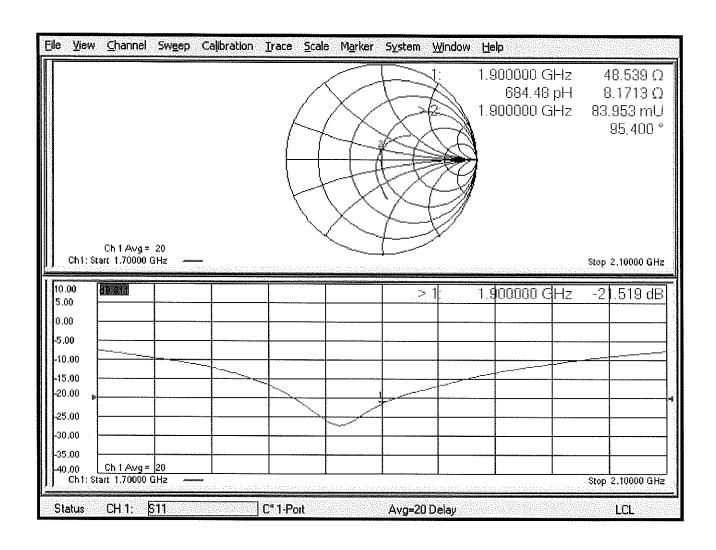
SAR(1 g) = 9.68 W/kg; SAR(10 g) = 5.11 W/kg

Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.2 W/kg = 11.52 dBW/kg

## Impedance Measurement Plot for Body TSL



## 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 D1900V2 – SN:5d149

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

Extended Calibration date: October 18, 2019

Description: SAR Validation Dipole at 1900 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 Dielectric Assessment Kit	8/13/2019	Annual	8/13/2020	1041
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	11/20/2018	Annual	11/20/2019	1039008
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
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
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	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272

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 = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	304

Object:	Date Issued:	Page 1 of 4
D1900V2 - SN: 5d149	10/18/2019	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:

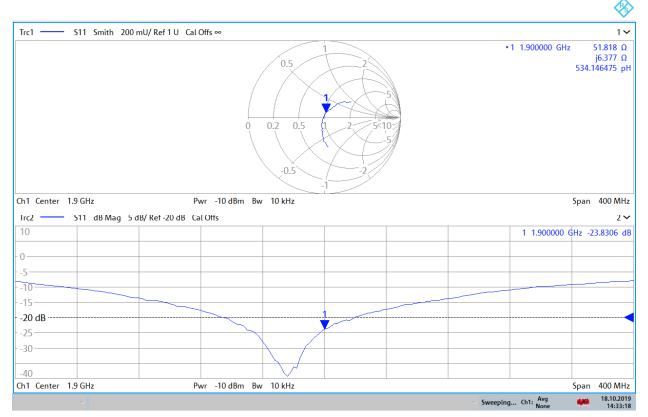
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  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	Head SAR (1g)		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
10/23/2018	10/18/2019	1.193	3.93	4.24	7.89%	2.05	2.18	6.34%	52.9	51.8	1.1	6.3	6.4	0.1	-23.4	-23.8	-1.80%	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	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	(40-) M(4 ©	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
10/23/2018	10/18/2019	1.193	3.94	4.2	6.60%	2.07	2.15	3.86%	48.5	48.4	0.1	8.2	7.6	0.6	-21.5	-22.1	-2.60%	PASS

Object:	Date Issued:	Page 2 of 4
D1900V2 - SN: 5d149	10/18/2019	Fage 2 01 4

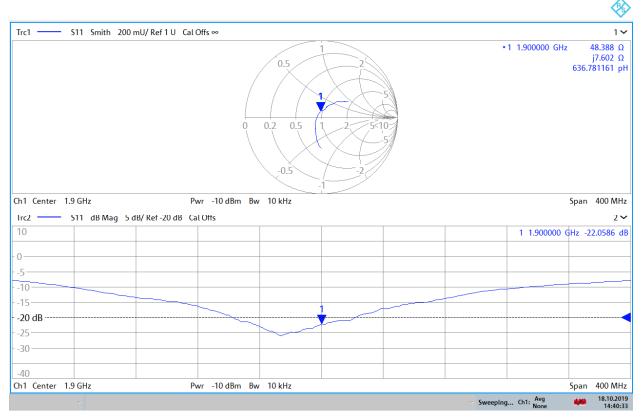
#### Impedance & Return-Loss Measurement Plot for Head TSL



14:33:19 18.10.2019

Object:	Date Issued:	Page 3 of 4
D1900V2 - SN: 5d149	10/18/2019	Page 3 of 4

## Impedance & Return-Loss Measurement Plot for Body TSL



14:40:34 18.10.2019

Object:	Date Issued:	Page 4 of 4
D1900V2 - SN: 5d149	10/18/2019	Page 4 of 4

#### Calibration Laboratory of Schmid & Partner Engineering AG

Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kallbrierdienst
C Service sulsse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client

**PC Test** 

Certificate No: D2450V2-797\_Sep17

	CERTIFICATI		•
Object	D2450V2 - SN:7	97	
Callbration procedure(s)	QA CAL-05.v9 Calibration proce	edure for dipole validation kits abo	(o)o3(°)
Callbration date:	September 11, 2	017	Extended PMV 9/20/2
The measurements and the unce	rtainties with confidence p	ional standards, which realize the physical un probability are given on the following pages ar	ilts of measurements (SI). BNV ad are part of the certificate.
All Caudrations have been conduc	cted in the closed laborato	ry facility: environment temperature (22 $\pm$ 3)°(	C and humidity < 70%.
Calibration Equipment used (M&	TE critical for calibration)		
	FE critical for calibration)	Cal Date (Certificate No.)	Scheduled Calibration
Primary Standards Power meler NRP		Cal Date (Certificate No.) 04-Apr-17 (No. 217-02521/02522)	Scheduled Calibration Apr-18
Primary Standards Power meler NRP	1D #		Apr-18
Primary Standards Power meler NRP Power sensor NRP-Z91	ID # SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator	ID # SN: 104778 SN: 103244	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521)	Apr-18 Apr-18 . î. Apr-18
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination	ID # SN: 104778 SN: 103244 SN: 103245	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522)	Apr-18 Apr-18 a
Primary Standards Power meler NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k)	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02528)	Apr-18 Apr-18 : Apr-16 Apr-18
Primary Standards Power meler NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529)	Apr-18 Apr-18 : Apr-16 Apr-18 Apr-18
Primary Standards Power meier NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. 217-02529) 31-May-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17)	Apr-18 Apr-18 Apr-16 Apr-16 Apr-18 Apr-18 Apr-18 May-18 May-18
Primary Standards Power meler NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17)	Apr-18 Apr-18 Apr-16 Apr-16 Apr-18 Apr-18 May-18 May-18 Mar-18
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. 217-02529) 31-May-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17) Check Date (in house)	Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 May-18 Mar-18 Scheduled Check In house check: Oct-18
Primary Standards Power meler NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A	ID # SN: 104779 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: GB37480704	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. 217-02529) 31-May-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17)  Check Date (in house) 07-Oct-15 (in house check Oct-16)	Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 May-18 Mar-18 Scheduled Check In house check: Oct-18 In house check: Oct-18
Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: GB37480704 SN: US37292783	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. 217-02529) 31-May-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17)  Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 May-18 Mar-18 Scheduled Check In house check: Oct-18 In house check: Oct-18
Primary Standards Power meler NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: GB37480704 SN: US37292783 SN: MY41092317	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. 217-02529) 31-May-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17)  Check Date (in house) 07-Oct-15 (in house check Oct-16)	Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 May-18 Mar-18 Scheduled Check In house check: Oct-18 In house check: Oct-18
Calibration Equipment used (M&T Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-08 Network Analyzer HP 8753E	ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972	04-Apr-17 (No. 217-02521/02522) 04-Apr-17 (No. 217-02521) 04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02529) 07-Apr-17 (No. 217-02529) 31-May-17 (No. EX3-7349_May17) 28-Mar-17 (No. DAE4-601_Mar17)  Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16)	Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 Apr-18 May-18 Mar-18 Scheduled Check In house check: Oct-18

Issued: September 11, 2017

Certificate No: D2450V2-797\_Sep17

Katja Pokovic

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

Approved by:

Technical Manager

## **Calibration Laboratory of**

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





Schweizerlscher Kalibrierdienst S Service suisse d'étalonnage C 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

#### Glossarv:

TSL

tissue simulating liquid

ConvF

sensitivity in TSL / NORM x,v,z

N/A

not applicable or not measured

## Calibration is Performed According to the Following Standards:

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

#### Additional Documentation:

e) DASY4/5 System Handbook

#### Methods Applied and Interpretation of Parameters:

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

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

## **Measurement Conditions**

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	-
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, $dy$ , $dz = 5 mm$	
Frequency	2450 MHz ± 1 MHz	

## **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity	
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m	
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.8 ± 6 %	1.86 mho/m ± 6 %	
Head TSL temperature change during test	< 0.5 °C	-	Mhana	

## SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.7 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.8 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	51.9 ± 6 %	2.04 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	N.S. o. o.	7

## SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	51.1 W/kg ± 17.0 % (k≃2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.14 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	53.8 Ω + 7.4 jΩ		
Return Loss	- 21.9 dB		

#### **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	49.7 Ω + 9.1 jΩ	
Return Loss	- 20,9 dB	

#### General Antenna Parameters and Design

	<u>,</u>
I Floatrical Delay (one direction)	l 1.152 ns l
Electrical Delay (one direction)	I 1.152 ns I
	*******

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 24, 2006		

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#### **DASY5 Validation Report for Head TSL**

Date: 11.09.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 797

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: f = 2450 MHz;  $\sigma = 1.86$  S/m;  $\varepsilon_r = 37.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

#### DASY52 Configuration:

• Probe: EX3DV4 - SN7349; ConvF(8.12, 8.12, 8.12); Calibrated: 31.05.2017;

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 28.03.2017

Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001

DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

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

Reference Value = 113.5 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 26.9 W/kg

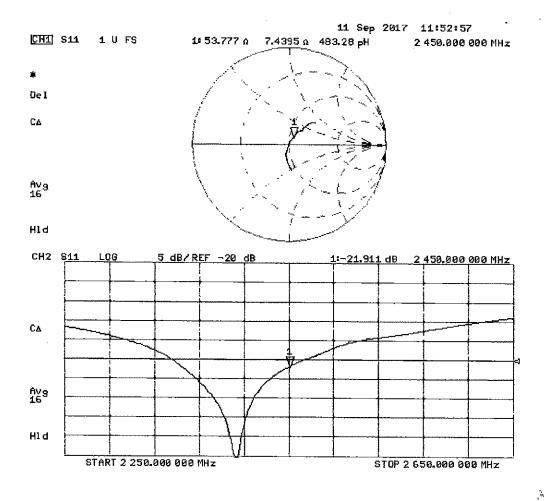
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.28 W/kg

Maximum value of SAR (measured) = 21.6 W/kg



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

# Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 11.09.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 797

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: f = 2450 MHz;  $\sigma = 2.04$  S/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.1, 8.1, 8.1); Calibrated: 31.05.2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 28.03.2017

Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002

DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

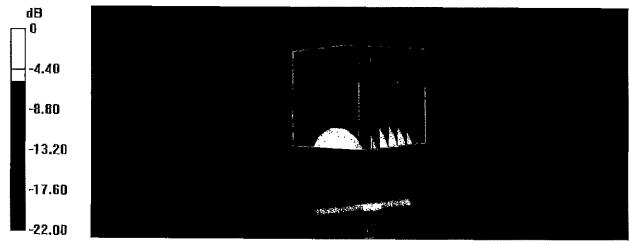
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 105.4 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 25.6 W/kg

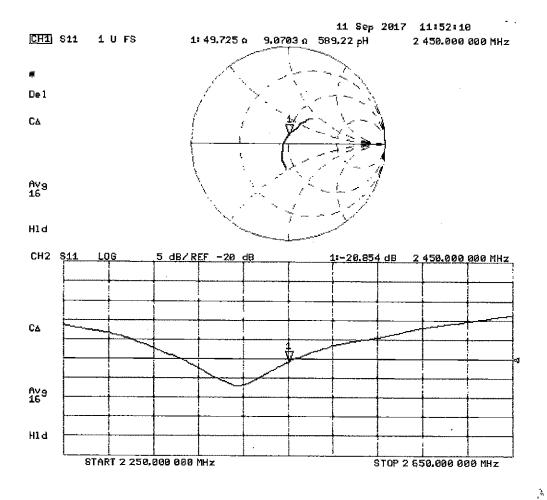
SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.14 W/kg

Maximum value of SAR (measured) = 20.3 W/kg



0 dB = 20.3 W/kg = 13.07 dBW/kg

## Impedance Measurement Plot for Body TSL



# 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:

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
Amplifler Research	15S1G6	Amplifler	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 Calibration 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	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	10/22/2017	Annual	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	304

Object:	Date Issued:	Page 1 of 4
D2450V2 - SN: 797	09/11/2018	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  $5\Omega$  from the previous measurement.

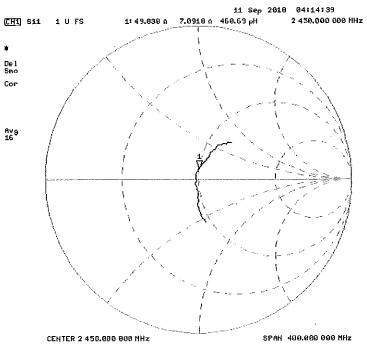
The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

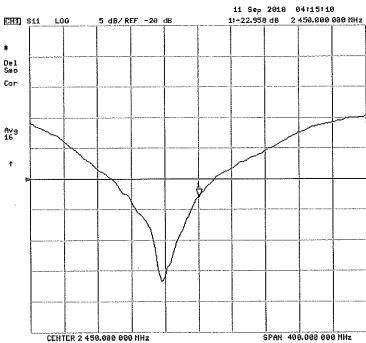
Calibration Date	Extension Date		Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(%)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(10a) W/ka @	Deviation 10g (%)						Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	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 Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Body SAR (1g)	(%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)		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
ſ	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:	Page 2 of 4
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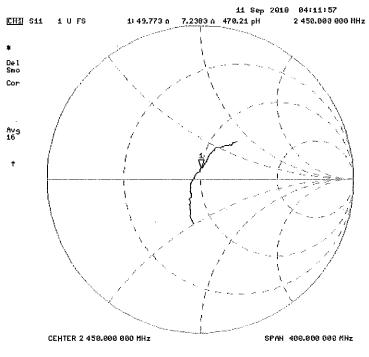
#### Impedance & Return-Loss Measurement Plot for Head TSL

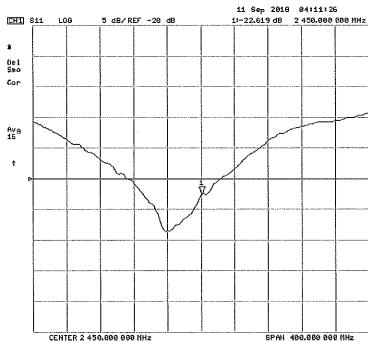




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## Impedance & Return-Loss Measurement Plot for Body TSL





Object:	Date Issued:	Page 4 of 4	ĺ
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# **Certification of Calibration**

Object D2450V2 – SN: 797

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

Extended Calibration date: September 9, 2019

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 = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	304

Object:	Date Issued:	Page 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:

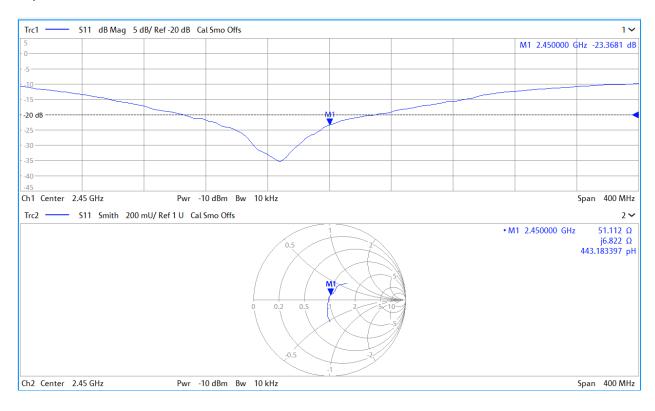
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

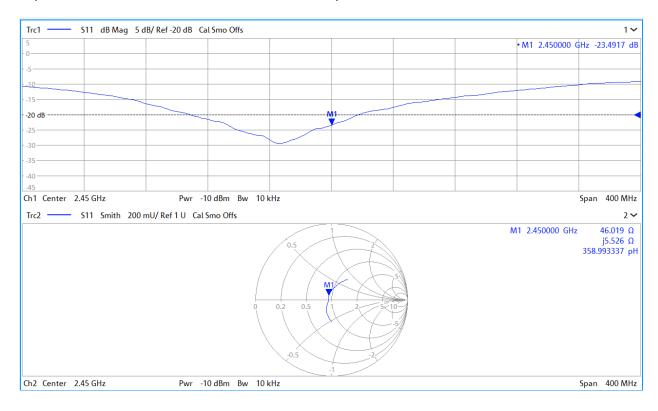
Calibration Date	Extension Date		Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(0/)		(40-) M(4 G)	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured 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 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	(40-) M(4 (-)	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:	Page 2 of 4
D2450V2 – SN: 797	09/9/2019	Fage 2 01 4

## Impedance & Return-Loss Measurement Plot for Head TSL



## Impedance & Return-Loss Measurement Plot for Body TSL



## Calibration Laboratory of

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





S Schweizerischer Kalibrierdienst
Service suisse d'étalonnage
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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

Client

**PC Test** 

Certificate No: D2450V2-719\_Aug19

## **CALIBRATION CERTIFICATE**

Object D2450V2 - SN:719

Calibration procedure(s) QA CAL-05.v11

Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date:

August 14, 2019

98/20/20

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)

ID#	Cal Date (Certificate No.)	Scheduled Calibration
SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
SN: 5047,2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
ID#	Check Date (in house)	Scheduled Check
SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
Name	Function	Signature 1
Claudio Leubler	Laboratory Technician	
Katja Pokovic	Technical Manager	
	SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047,2 / 06327 SN: 7349 SN: 601  ID # SN: GB39512475 SN: US37292783 SN: MY41092317 SN: 100972 SN: US41080477  Name Claudio Leubler	SN: 104778

Issued: August 15, 2019

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

Certificate No: D2450V2-719\_Aug19

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### **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

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:**

Certificate No: D2450V2-719\_Aug19

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	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	37.8 ± 6 %	1.83 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	53.1 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.25 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.7 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	50.8 ± 6 %	2.01 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

## SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (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	50.8 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.0 W/kg ± 16.5 % (k=2)

Certificate No: D2450V2-719\_Aug19 Page 3 of 8

## Appendix (Additional assessments outside the scope of SCS 0108)

#### **Antenna Parameters with Head TSL**

Impedance, transformed to feed point	54.6 Ω + 5.6 jΩ
Return Loss	- 23.2 dB

#### **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	51.0 Ω + 8.4 jΩ
Return Loss	- 21.6 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.150 ns	

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

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

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

#### **Additional EUT Data**

Manufactured by	SPEAG

#### **DASY5 Validation Report for Head TSL**

Date: 14.08,2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:719

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: f = 2450 MHz;  $\sigma = 1.83 \text{ S/m}$ ;  $\varepsilon_r = 37.8$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(7.9, 7.9, 7.9) @ 2450 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:

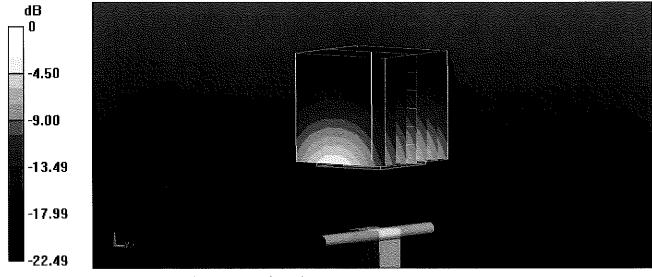
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 117.1 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 26.6 W/kg

SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.25 W/kg

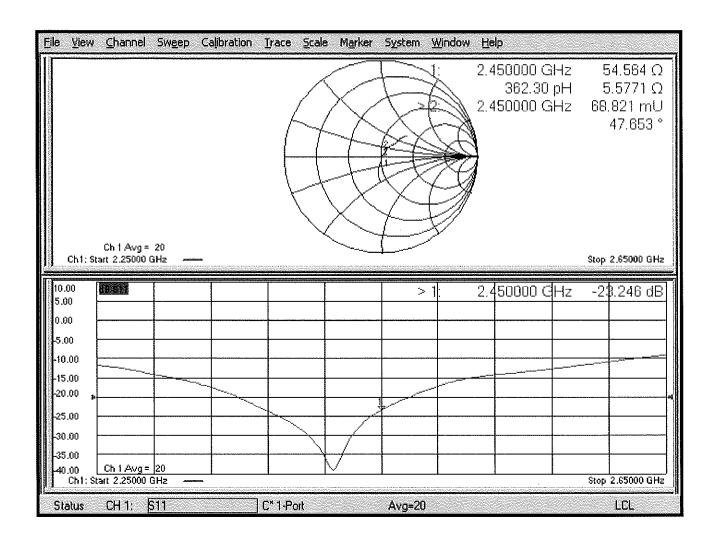
Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg = 13.38 dBW/kg

Certificate No: D2450V2-719\_Aug19 Page 5 of 8

### Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 14.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:719** 

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: f = 2450 MHz;  $\sigma = 2.01 \text{ S/m}$ ;  $\varepsilon_r = 50.8$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(7.94, 7.94, 7.94) @ 2450 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:

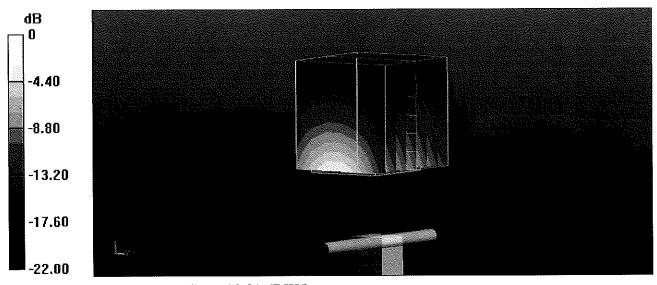
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 105.2 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 25.6 W/kg

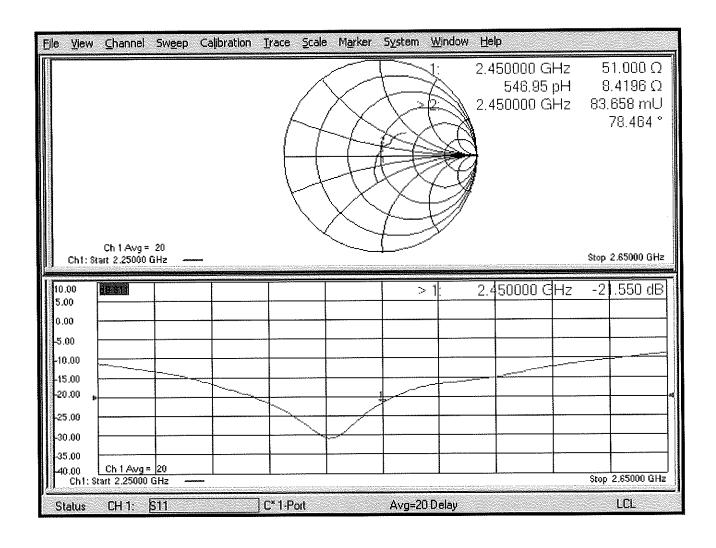
SAR(1 g) = 13 W/kg; SAR(10 g) = 6.09 W/kg

Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg = 13.01 dBW/kg

### Impedance Measurement Plot for Body TSL



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





Schweizerischer Kalibrierdienst Service suïsse d'étalonnage Servizio svizzero di taratura

S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

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

Accreditation No.: SCS 0108

Client

PC Test

Certificate No: D2600V2=1004\_Apr18

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pject	D2600V2 - SN:1	004	
alibration procedure(s)			
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			:::::::::::::::::::::::::::::::::::::
alibration date:	April 11, 2018		
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te measurements and the unce	ertainties with confidence p	probability are given on the following page	at units of measurements (SI).  is and are part of the certificate.
		ry facility: environment temperature (22 ±	
		ry radility: environment temperature (22 ±	:3)°C and humidity < 70%.
alibration Equipment used (M&	TE critical for calibration)		
mary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
wer meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
wer sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
wer sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	•
ference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
pe-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
eference Probe EX3DV4	SN: 7349		Apr-19
\E4	SN: 601	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
	1 0.11 00 1	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
condary Standards	ID#	Check Date (in house)	Scheduled Check
wer meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
wer sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
wer sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	
twork Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18 In house check: Oct-18
		·	
	Name	Function	Signature
librated by:	Michael Weber	Laboratory Technician	
			A. PUST
proved by:	Katja Pokovic	Technical Manager	
			LXU4
is calibration certificate shall no	of he reproduced assess in	And Latter 1 (a)	Issued: April 12, 2018

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

Certificate No: D2600V2-1004\_Apr18

Page 1 of 8

### **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

ConvF N/A

sensitivity in TSL / NORM x,y,z

not applicable or not measured

### Calibration is Performed According to the Following Standards:

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

Certificate No: D2600V2-1004\_Apr18

Page 2 of 8

### **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 <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.3 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	55.9 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (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 <sup>3</sup> (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 <sup>3</sup> (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)

Certificate No: D2600V2-1004\_Apr18 Page 3 of 8

### Appendix (Additional assessments outside the scope of SCS 0108)

### **Antenna Parameters with Head TSL**

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

### **Antenna Parameters with Body TSL**

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

### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.149 ns

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

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

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

### **Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	December 23, 2006

### **DASY5 Validation Report for Head TSL**

Date: 11.04.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f = 2600 MHz;  $\sigma = 2.03 \text{ S/m}$ ;  $\varepsilon_r = 37.8$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

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

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 26.10.2017

Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001

DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

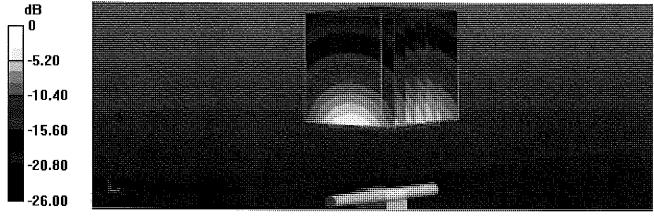
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 118.5 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 28.6 W/kg

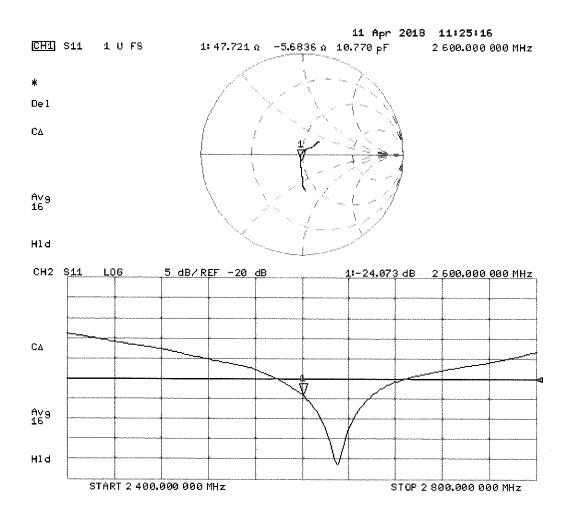
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.35 W/kg

Maximum value of SAR (measured) = 23.9 W/kg



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

### Impedance Measurement Plot for Head TSL



### **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;  $\sigma = 2.19 \text{ S/m}$ ;  $\varepsilon_r = 52.1$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

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

• Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 26.10.2017

Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002

• DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

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

Reference Value = 108.5 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 28.3 W/kg

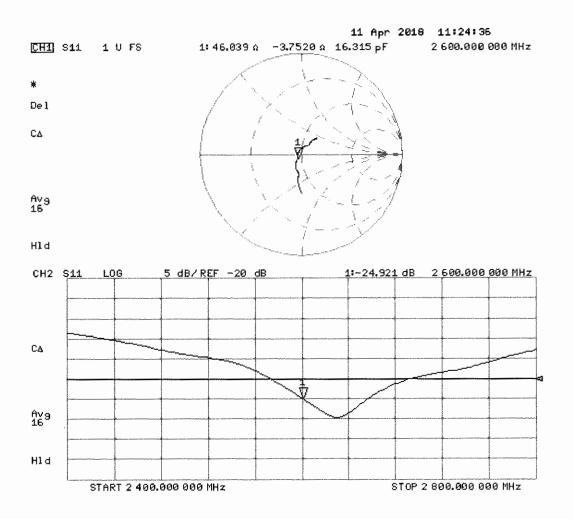
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.2 W/kg

Maximum value of SAR (measured) = 22.9 W/kg



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

## Impedance Measurement Plot for Body TSL



### 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 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	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	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	BROPTE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	304

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

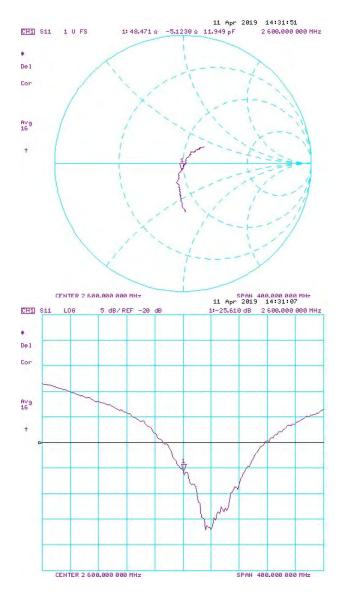
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

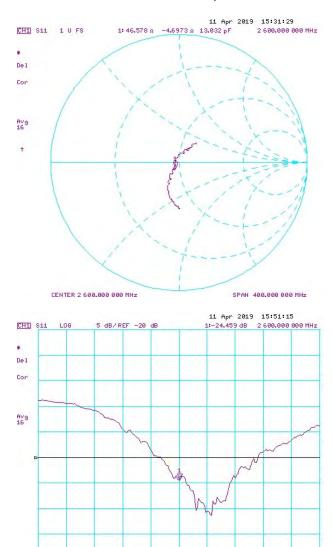
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Head SAR (1g)	(0/)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Head SAR	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) 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	(40-) M(4 @	Deviation 10g (%)		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	Fage 2 01 4	

### Impedance & Return-Loss Measurement Plot for Head TSL



### Impedance & Return-Loss Measurement Plot for Body TSL



CENTER 2 600.000 000 MHz

SPAN 400.000 000 MHz

### **Calibration Laboratory of**

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





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

Client

**PC Test** 

Certificate No: D5GHzV2-1237\_Aug18

### CALIBRATION CERTIFICATE

Object

D5GHzV2 - SN:1237

Calibration procedure(s)

QA CAL-22.v3

Calibration procedure for dipole validation kits between 3-6 GHz

Calibration date:

August 10, 2018

GHZ BN 09-06-9018

BN 08/09/2019

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	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02572)	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: 3503	30-Dec-17 (No. EX3-3503_Dec17)	Dec-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
	1		
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (In house check Oct-16)	in house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-17)	in house check: Oct-18
	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	A. M
			graye
Approved by:	Katja Pokovic	Technical Manager	All Comments
		• •	

Issued: August 17, 2018

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

### Calibration Laboratory of

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Servizio svizzero di taratura
Swiss Calibration Service

Accreditation No.: SCS 0108

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### 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	V52.10.1
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0  mm, dz = 1.4  mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz	

## Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.6 ± 6 %	4.61 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (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	23.5 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	35.1 ± 6 %	4.98 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 <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.60 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	85.7 W / kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.46 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.5 W/kg ± 19.5 % (k=2)

### Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.9 ± 6 %	5.14 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

### SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.09 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (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	23.1 W/kg ± 19.5 % (k=2)

Page 4 of 13

### 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	46.9 ± 6 %	5.49 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 <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.62 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (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 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	46.3 ± 6 %	5.96 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 <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.91 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	78.5 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (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	22.0 W/kg ± 19.5 % (k=2)

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# 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 %	6.16 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 <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.65 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.9 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (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)

### Appendix (Additional assessments outside the scope of SCS 0108)

### Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	47.5 Ω - 3.5 jΩ
Return Loss	- 27.0 dB

#### Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	50.1 Ω + 4.7 jΩ
Return Loss	- 26.7 dB

### Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	52.7 Ω + 0.8 jΩ
Return Loss	- 31.2 dB

### Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	46.5 Ω - 1.3 jΩ	
Return Loss	- 28.2 dB	

### Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	53.1 Ω + 6.2 jΩ	
Return Loss	- 23.5 dB	

### Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	53.6 Ω + 2.1 jΩ
Return Loss	- 27.9 dB

### **General Antenna Parameters and Design**

	<del></del>
Electrical Delay (one direction)	1,195 ns

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

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

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

### **Additional EUT Data**

Manufactured by	SPEAG	
Manufactured on	May 04, 2015	

Certificate No: D5GHzV2-1237\_Aug18

### **DASY5 Validation Report for Head TSL**

Date: 10.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f = 5250 MHz;  $\sigma = 4.61$  S/m;  $\epsilon_r = 35.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used: f = 5600 MHz;  $\sigma = 4.98$  S/m;  $\epsilon_r = 35.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used: f = 5750 MHz;  $\sigma = 5.14$  S/m;  $\epsilon_r = 34.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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) @ 5250 MHz, ConvF(5.05, 5.05, 5.05) @ 5600 MHz, ConvF(4.98, 4.98, 4.98) @ 5750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601 (5GHz); 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=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 = 75.17 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 27.8 W/kg

SAR(1 g) = 8.15 W/kg; SAR(10 g) = 2.36 W/kg

Maximum value of SAR (measured) = 18.4 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 = 75.53 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 32.4 W/kg

SAR(1 g) = 8.6 W/kg; SAR(10 g) = 2.46 W/kg

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

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

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

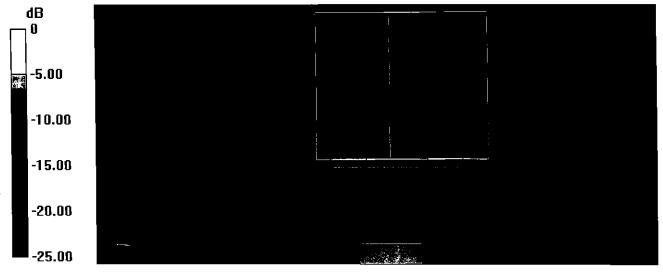
Reference Value = 73.04 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.1 W/kg

SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.32 W/kg

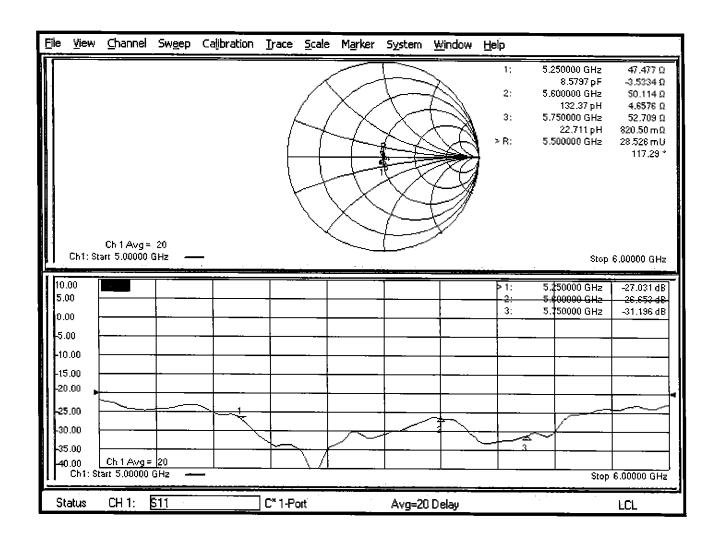
Maximum value of SAR (measured) = 19.9 W/kg

Certificate No: D5GHzV2-1237\_Aug18 P



0 dB = 19.9 W/kg = 12.99 dBW/kg

### Impedance Measurement Plot for Head TSL



### **DASY5 Validation Report for Body TSL**

Date: 10.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f=5250 MHz;  $\sigma=5.49$  S/m;  $\epsilon_r=46.9$ ;  $\rho=1000$  kg/m $^3$ , Medium parameters used: f=5600 MHz;  $\sigma=5.96$  S/m;  $\epsilon_r=46.3$ ;  $\rho=1000$  kg/m $^3$ , Medium parameters used: f=5750 MHz;  $\sigma=6.16$  S/m;  $\epsilon_r=46$ ;  $\rho=1000$  kg/m $^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.26, 5.26, 5.26) @ 5250 MHz, ConvF(4.65, 4.65, 4.65) @ 5600 MHz, ConvF(4.57, 4.57, 4.57) @ 5750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601 (5GHz); 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=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 = 68.22 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 28.5 W/kg

SAR(1 g) = 7.62 W/kg; SAR(10 g) = 2.14 W/kg

Maximum value of SAR (measured) = 17.3 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 = 67.51 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 32.1 W/kg

SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.22 W/kg

Maximum value of SAR (measured) = 18.5 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

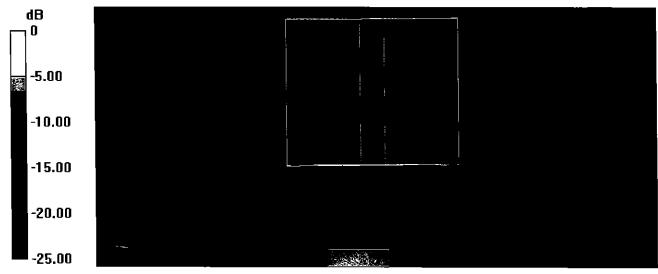
Reference Value = 65.91 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 31.7 W/kg

SAR(1 g) = 7.65 W/kg; SAR(10 g) = 2.14 W/kg

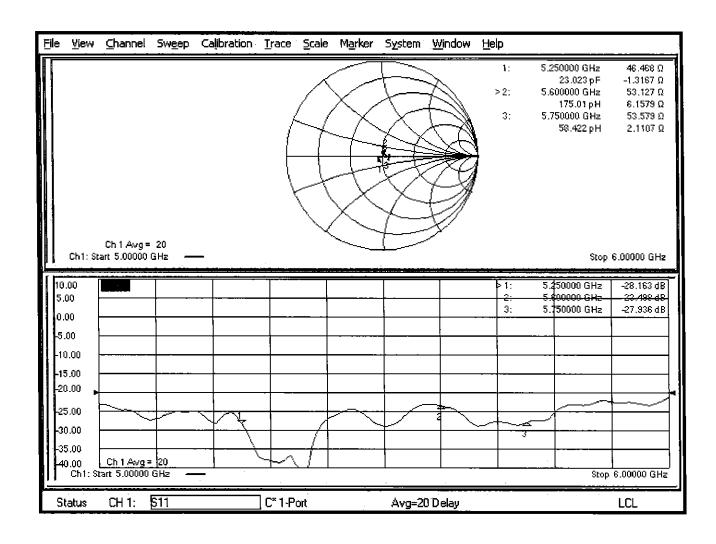
Maximum value of SAR (measured) = 18.0 W/kg

Certificate No: D5GHzV2-1237\_Aug18 Page 11 of 13



0 dB = 18.0 W/kg = 12.55 dBW/kg

### Impedance Measurement Plot for Body TSL



### 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: 1237

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

Extended Calibration date: 08/09/2019

Description: SAR Validation Dipole at 5GHz

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
MiniCircuits	VLF-6000+	Low Pass Filter	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	304

Object:	Date Issued:	Dogo 1 of 4
D5GHzV2 – SN: 1237	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:

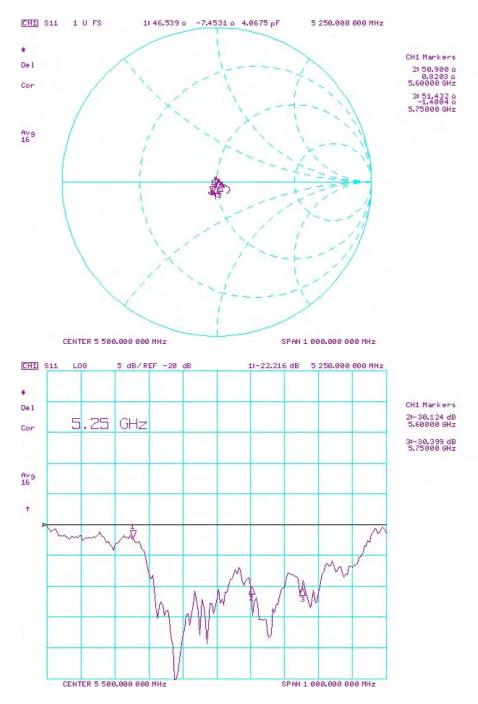
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

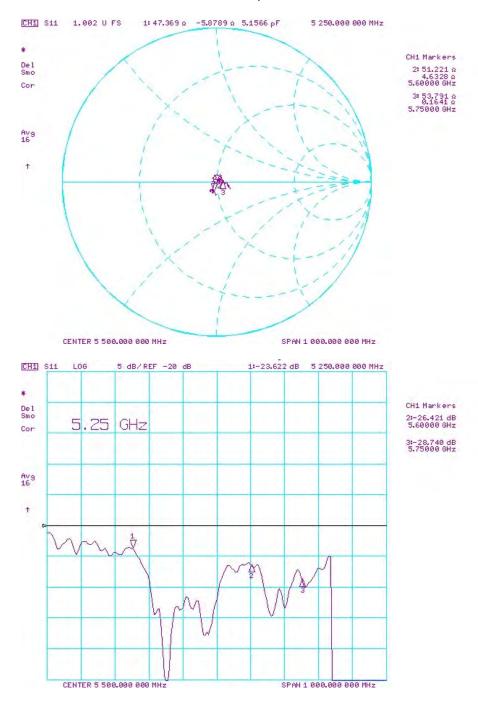
Frequ (M		Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 17.0 dBm	Measured Head SAR (1g) W/kg @ 17.0 dBm	(96)	Certificate SAR Target Head (10g) W/kg @ 17.0 dBm	(10a) M//ka @	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance 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
52	50	8/10/2018	8/9/2019	1.195	4.065	3.81	-6.27%	1.18	1.09	-7.23%	47.5	46.5	1	-3.5	-7.5	4	-27	-22.2	17.70%	PASS
56	00	8/10/2018	8/9/2019	1.195	4.285	4.06	-5.25%	1.23	1.15	-6.12%	50.1	50.9	0.8	4.7	8.0	3.9	-26.7	-30.1	-12.80%	PASS
57	50	8/10/2018	8/9/2019	1.195	4.03	3.8	-5.71%	1.16	1.07	-7.36%	52.7	51.4	1.3	0.8	-1.4	2.2	-31.2	-30.4	2.60%	PASS
Frequ (M		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	(96)		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
52	50	8/10/2018	8/9/2019	1.195	3.78	3.52	-6.88%	1.06	0.981	-7.45%	46.5	47.4	0.9	-1.3	-5.9	4.6	-28.2	-23.6	16.20%	PASS
56	00	8/10/2018	8/9/2019	1.195	3.925	3.81	-2.93%	1.1	1.05	-4.55%	53.1	51.2	1.9	6.2	4.6	1.6	-23.5	-26.4	-12.40%	PASS
57	50	8/10/2018	8/9/2019	1.195	3.795	3.58	-5.67%	1.06	1	-5.66%	53.6	53.8	0.2	2.1	0.2	1.9	-27.9	-28.7	-3.00%	PASS

Object:	Date Issued:	Daga 2 of 4
D5GHzV2 – SN: 1237	08/09/2019	Page 2 of 4

### Impedance & Return-Loss Measurement Plot for Head TSL



### Impedance & Return-Loss Measurement Plot for Body TSL



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





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

Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **PC Test**  Certificate No: D5GHzV2-1057\_Jan18

## **CALIBRATION CERTIFICATE**

Object

D5GHzV2 - SN:1057

Calibration procedure(s)

QA CAL-22,v2

Calibration procedure for dipole validation kits between 3-6 GHz

Issued: January 18, 2018

Calibration date:

January 16, 2018

8105-55-10

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)

BNV 02106/2019 BN 01/17/2020

Primery 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 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
		•	
<b>.</b>	1		
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (In house check Oct-16)	in house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check; Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18
	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	9 MM.
		•	a flage
Approved by:	Katja Pokovic	Technical Manager	11111

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





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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

### Glossary:

TSL

tissue simulating liquid

ConvF

sensitivity in TSL / NORM x,y,z

N/A

not applicable or not measured

### Calibration is Performed According to the Following Standards:

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

### Additional Documentation:

e) DASY4/5 System Handbook

### Methods Applied and Interpretation of Parameters:

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

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

### **Measurement Conditions**

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

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

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

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

### SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm <sup>3</sup> (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 <sup>3</sup> (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)

Certificate No: D5GHzV2-1057\_Jan18

## 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 <sup>3</sup> (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 <sup>3</sup> (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 <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 <b>W</b> /kg
SAR for nominal Head TSL parameters	normalized to 1W	80.5 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.0 W/kg ± 19.5 % (k=2)

## Body TSL parameters at 5200 MHz The following parameters and calculations were applied.

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

#### SAR result with Body TSL at 5200 MHz

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

### Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

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

#### SAR result with Body TSL at 5600 MHz

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

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.3 W/kg ± 19.5 % (k=2)

#### **Body TSL parameters at 5750 MHz**

The following parameters and calculations were applied.

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

#### SAR result with Body TSL at 5750 MHz

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

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

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

#### SAR result with Body TSL at 5800 MHz

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

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

#### Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL at 5250 MHz

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

#### Antenna Parameters with Head TSL at 5600 MHz

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

#### Antenna Parameters with Head TSL at 5750 MHz

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

#### Antenna Parameters with Body TSL at 5200 MHz

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

#### Antenna Parameters with Body TSL at 5250 MHz

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

#### Antenna Parameters with Body TSL at 5600 MHz

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

#### Antenna Parameters with Body TSL at 5750 MHz

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

#### Antenna Parameters with Body TSL at 5800 MHz

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

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.203 ns

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

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

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

#### **Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	November 27, 2006

#### Appendix (Additional assessments outside the scope of SCS 0108)

#### **Measurement Conditions (f=5200 MHz)**

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

Phantom SAM Head Phantom For usage with cSAR3DV	2-R/L
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#### SAR result with SAM Head (Top)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.24 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.6 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.6 W/kg ± 19.9 % (k=2)

#### SAR result with SAM Head (Mouth)

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

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

#### SAR result with SAM Head (Neck)

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

#### SAR result with SAM Head (Ear)

SAR averaged over 1 cm <sup>3</sup> (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 <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	1.76 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	17.7 W/kg ± 19.9 % (k=2)

#### Measurement Conditions (f=5800 MHz)

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

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

SAR averaged over 1 cm <sup>3</sup> (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 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.1 W/kg ± 19.9 % (k=2)

#### SAR result with SAM Head (Mouth)

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

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

#### **DASY5 Validation Report for Head TSL**

Date: 11.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f = 5250 MHz;  $\sigma = 4.55$  S/m;  $\varepsilon_r = 36.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used: f = 5600 MHz;  $\sigma = 4.9$  S/m;  $\varepsilon_r = 35.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used: f = 5750 MHz;  $\sigma = 5.06$  S/m;  $\varepsilon_r = 35.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

#### **DASY52 Configuration:**

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

#### Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 72.54 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.28 W/kg

Maximum value of SAR (measured) = 17.7 W/kg

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

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 72.77 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 32.2 W/kg

SAR(1 g) = 8.41 W/kg; SAR(10 g) = 2.4 W/kg

Maximum value of SAR (measured) = 19.7 W/kg

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

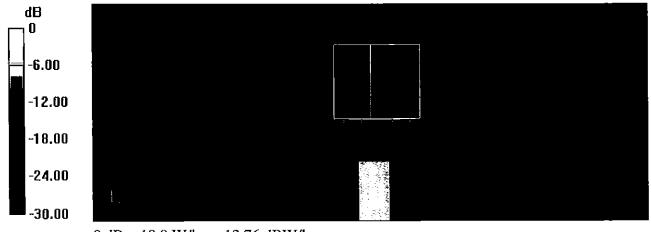
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 70.93 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 31.4 W/kg

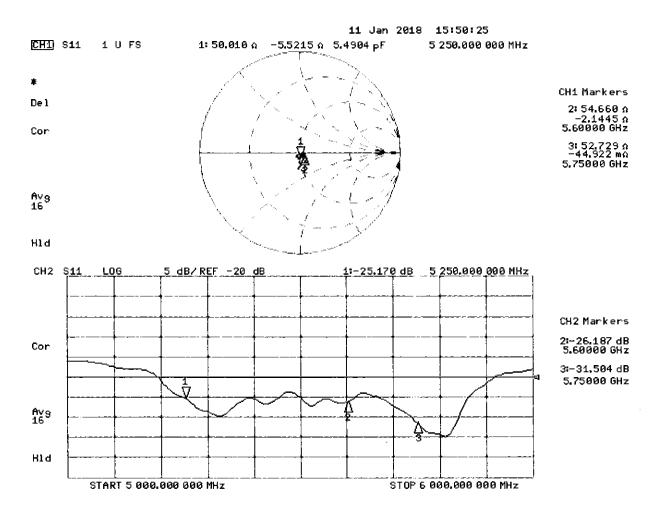
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.3 W/kg

Maximum value of SAR (measured) = 18.9 W/kg



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

#### Impedance Measurement Plot for Head TSL



#### **DASY5 Validation Report for Body TSL**

Date: 10.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5250 MHz, Frequency: 5600

MHz, Frequency: 5750 MHz, Frequency: 5800 MHz

Medium parameters used: f = 5200 MHz;  $\sigma = 5.41 \text{ S/m}$ ;  $\varepsilon_r = 47.3$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Medium parameters used: f = 5250 MHz;  $\sigma = 5.48 \text{ S/m}$ ;  $\varepsilon_r = 47.2$ ;  $\rho = 1000 \text{ kg/m}^3$ ,

Medium parameters used: f = 5600 MHz;  $\sigma = 5.94 \text{ S/m}$ ;  $\varepsilon_r = 46.6$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Medium parameters used: f = 5750 MHz;  $\sigma = 6.15 \text{ S/m}$ ;  $\varepsilon_r = 46.3$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Medium parameters used: f = 5800 MHz;  $\sigma = 6.22 \text{ S/m}$ ;  $\varepsilon_r = 46.2$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### **DASY52 Configuration:**

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

### Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.05 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 27.6 W/kg

SAR(1 g) = 7.36 W/kg; SAR(10 g) = 2.06 W/kg

Maximum value of SAR (measured) = 17.1 W/kg

#### Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.53 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 29.4 W/kg

SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 17.9 W/kg

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

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 65.09 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 34.0 W/kg

SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.25 W/kg

Maximum value of SAR (measured) = 19.5 W/kg

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

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 63.45 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 32.9 W/kg

SAR(1 g) = 7.72 W/kg; SAR(10 g) = 2.14 W/kg

Maximum value of SAR (measured) = 18.9 W/kg

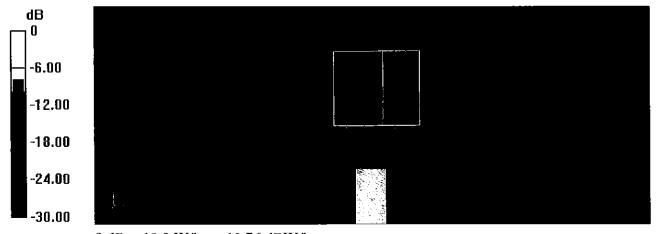
#### Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 63.14 V/m; Power Drift = -0.08 dB

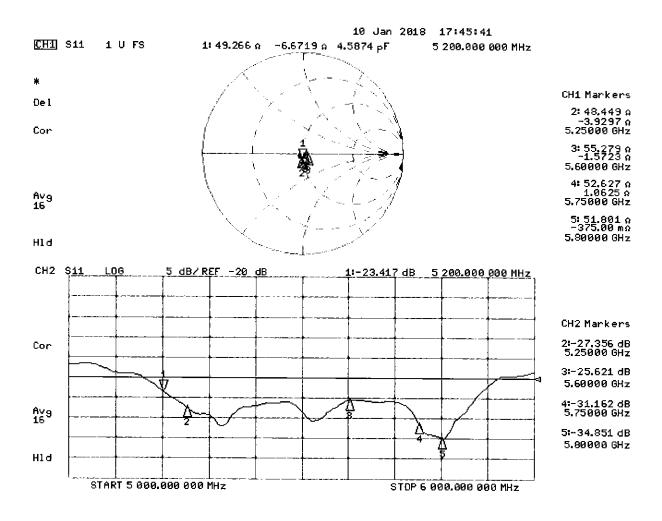
Peak SAR (extrapolated) = 33.3 W/kg

SAR(1 g) = 7.68 W/kg; SAR(10 g) = 2.13 W/kg



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

### Impedance Measurement Plot for Body TSL



#### **DASY5 Validation Report for SAM Head**

Date: 16.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5800 MHz Medium parameters used: f = 5200 MHz;  $\sigma$  = 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=1.4mm

Reference Value = 73.00 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 36.5 W/kg

SAR(1 g) = 8.62 W/kg; SAR(10 g) = 2.41 W/kg

Maximum value of SAR (measured) = 21.9 W/kg

## SAM Head/Mouth - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 72.79 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 29.5 W/kg

SAR(1 g) = 8.54 W/kg; SAR(10 g) = 2.37 W/kg

Maximum value of SAR (measured) = 20.7 W/kg

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

dz=1.4mm

Reference Value = 71.69 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 34.9 W/kg

SAR(1 g) = 8.88 W/kg; SAR(10 g) = 2.44 W/kg

Maximum value of SAR (measured) = 23.0 W/kg

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

dz=1.4mm

Reference Value = 72.48 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 27.9 W/kg

SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.37 W/kg

Maximum value of SAR (measured) = 19.3 W/kg

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

Reference Value = 72.90 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 33.4 W/kg

SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.35 W/kg

Maximum value of SAR (measured) = 21.8 W/kg

## SAM Head/Ear - 5200/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 54.68 V/m; Power Drift = 0.03 dB

D 1 CAD ( 1 1 1) 16 2 W/I

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

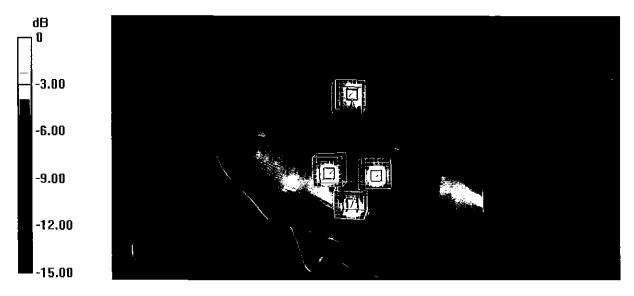
## SAM Head/Ear - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

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.

Extension Calibration date: 1/16/2019

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	20K

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

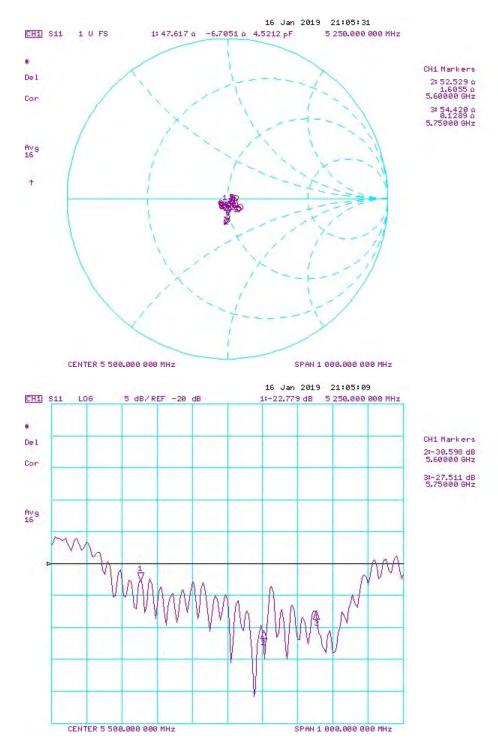
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  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	(1a) W/ka @	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 17.0 dBm	(40a) 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
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	(1a) M/ka @	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 17.0 dBm	(40a) 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
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

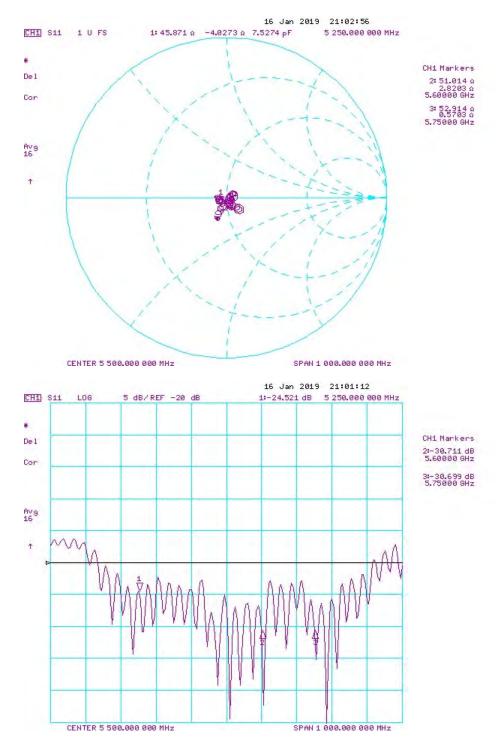
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#### Impedance & Return-Loss Measurement Plot for Head TSL



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#### Impedance & Return-Loss Measurement Plot for Body TSL



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### **Certification of Calibration**

Object D5GHzV2 – SN: 1057

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

Extension Calibration date: 1/16/2020

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 = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	20K

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

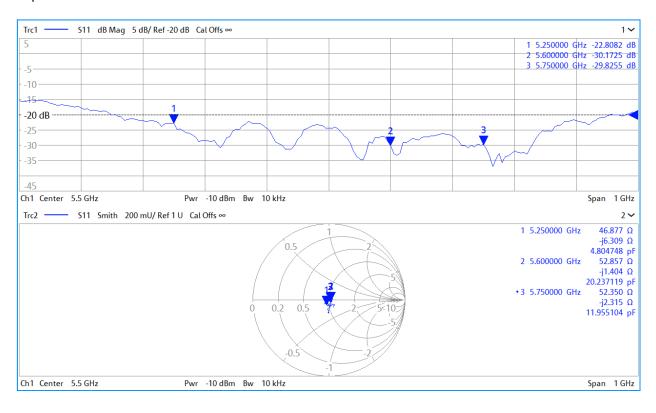
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

Frequ (Mi		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	(96)	Certificate SAR Target Head (10g) W/kg @ 17.0 dBm	(40a) M//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
52	50	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	8.0	-25.2	-22.8	9.50%	PASS
56	00	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
57	50	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
Frequ (Mi		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	(96)		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
52	50	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
56	00	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
57	50	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

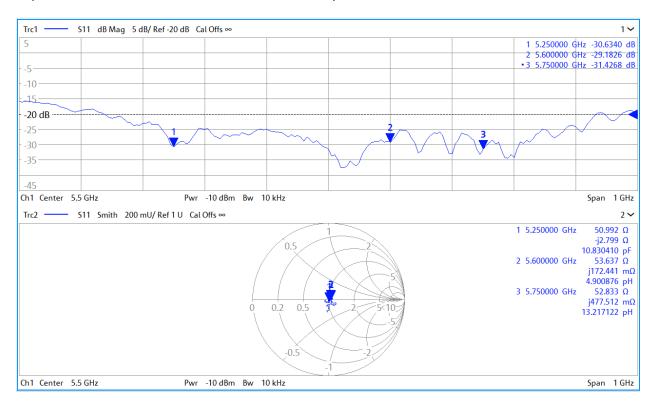
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#### Impedance & Return-Loss Measurement Plot for Head TSL



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#### Impedance & Return-Loss Measurement Plot for Body TSL



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





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The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client

**PC Test** 

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

BNV 19

Calibration date:

June 19, 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

Leif Klysner Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Issued: June 20, 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
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 NORMx,y,z tissue simulating liquid sensitivity in free space

ConvF DCP sensitivity in TSL / NORMx,y,z diode compression point

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

Polarization φ

φ rotation around probe axis

Polarization 9

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

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

Connector Angle

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

#### Calibration is Performed According to the Following Standards:

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

b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016

c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010

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

#### Methods Applied and Interpretation of Parameters:

 NORMx,y,z: Assessed for E-field polarization θ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the 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).

June 19, 2019 EX3DV4 - SN:7409

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7409

**Basic Calibration Parameters** 

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (µV/(V/m) <sup>2</sup> ) <sup>A</sup>	0.38	0.33	0.38	± 10.1 %
DCP (mV) <sup>B</sup>	95.8	101.8	100.3	

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (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		
10353-	Pulse Waveform (200Hz, 20%)	Х	0.80	60.00	5.37	6.99	0.08	± 1.9 %	± 9.6 %
AAA		Y	1.45	64.56	8.47		80.0		
	Water Control of the	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		Υ	0.88	64.90	7.60		95.0		
		Z	0.42	60.00	5.26		95.0		
10355-	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		120.0		
10387-	QPSK Waveform, 1 MHz	X	0.00	60.00	1.00	0.00	150.0	± 3.7 %	± 9.6 %
AAA		Υ	0.42	60.00	5.25		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		Υ	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		Υ	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		Υ	4.64	66.08	15.84	]	150.0	]	-
		Z	4.60	65.42	15.52		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.

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## DASY/EASY - Parameters of Probe: EX3DV4 - SN:7409

**Sensor Model Parameters** 

	C1 fF	C2 fF	α V⁻¹	T1 ms.V~2	T2 ms.V <sup>-1</sup>	T3 ms	T4 V <sup>-2</sup>	T5 V <sup>1</sup>	Т6
X	15.1	114.89	36.52	2.59	0.12	4.98	0.18	0.16	1.00
Y	27.6	203.75	34.9 <b>4</b>	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

#### **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

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#### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7409

#### Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) F	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (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 %

<sup>&</sup>lt;sup>c</sup> 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

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 ConyF uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters.

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

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#### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7409

#### Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (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 %

<sup>&</sup>lt;sup>C</sup> 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.

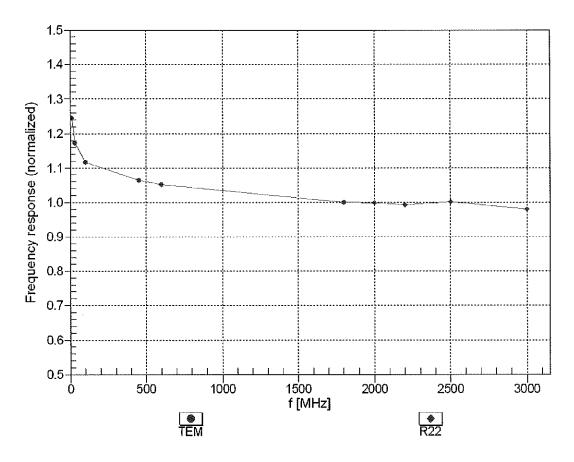
F At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvE uncertainty for indicated to rest figure parameters.

the ConvF uncertainty for indicated target tissue parameters.

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

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



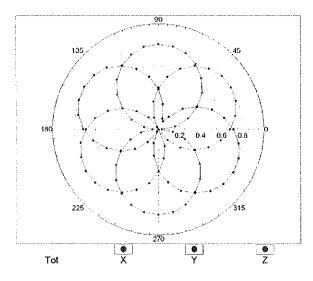
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

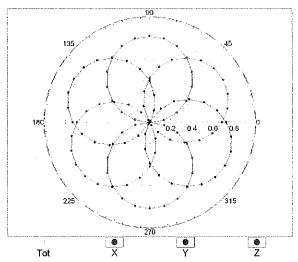
EX3DV4-SN:7409

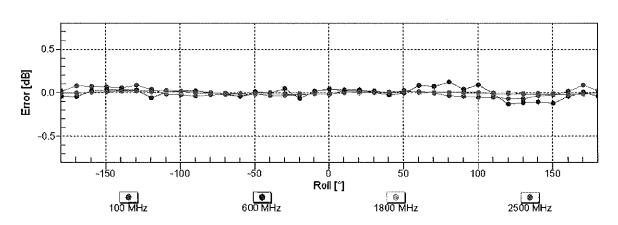
## Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

f=600 MHz,TEM

f=1800 MHz,R22



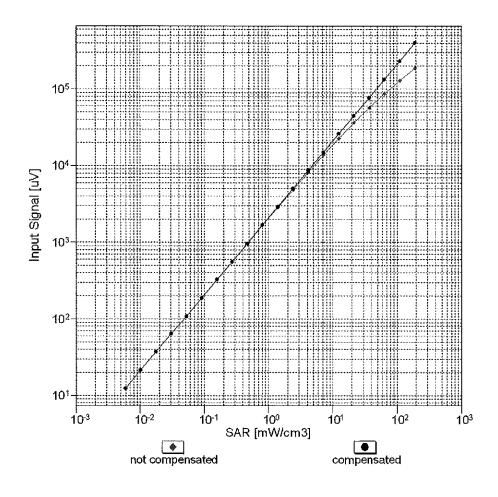


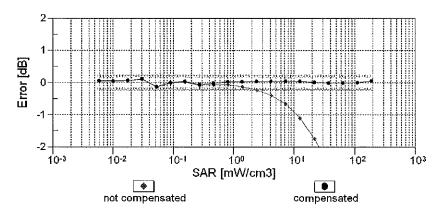


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

### Dynamic Range f(SAR<sub>head</sub>)

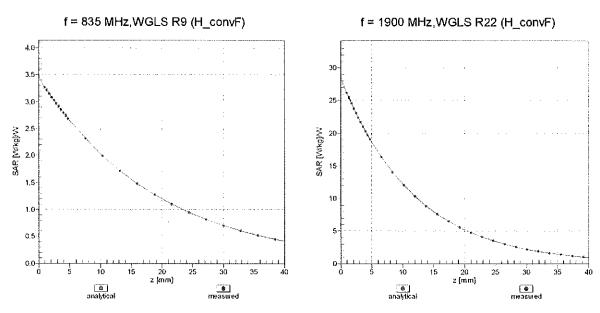
(TEM cell , f<sub>eval</sub>= 1900 MHz)



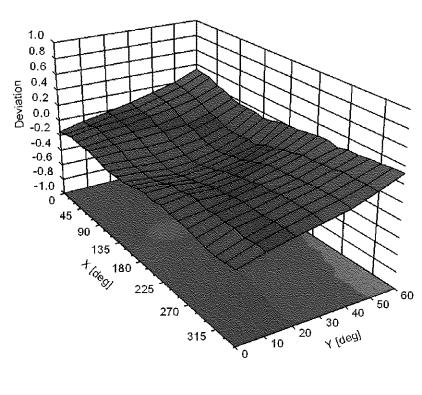


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

#### **Conversion Factor Assessment**



### Deviation from Isotropy in Liquid Error $(\phi, \vartheta)$ , f = 900 MHz



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### **Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>E</sup> (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	±96%
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 10033	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033		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) IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth Bluetooth	4.53 3.83	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	8,01	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	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)	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 10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN WLAN	10.30	±9.6%
	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)		10.77	±9.6%
10076 10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN WLAN	10.94 11.00	± 9.6 % ± 9.6 %
10077	CAB CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps) CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10081	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 %
10090	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					

10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	I I TE EDD		1000
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD LTE-FDD	6.43 5.75	±9.6%
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)		6.44	±9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD		±9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD LTE-FDD	6.59	±9.6 %
10113	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	6.62 8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, 16-QAM)	WLAN	8.46	±9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 16-QAM)	WLAN		± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.15 8.07	± 9.6 % ± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 13.3 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 01 Mbps, 18-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 10173	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-TOD	10.25	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK) LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	5.72	± 9.6 %
10177	CAG	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, QPSK) LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD LTE-FDD	5.73	±9.6%
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.52 6.50	±9.6%
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 % ± 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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10222	10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
19223   CAO   IEEE 802.11 (IT IM IMED, 19 Mbps, 16-OAM)						
10225   CAC   LEEE 802.111 (IHT Mixed; 150 Mbps, 64-CAM)						
10225   CAB   UMIS-FDD (HSPA+)   WCDMA   5.97   ±9.6%   10227   CAA   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-GAM)   LTE-TDD   10.26   ±9.6%   10228   CAA   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-GAM)   LTE-TDD   10.26   ±9.6%   10229   CAC   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-GAM)   LTE-TDD   9.48   ±9.6%   10229   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-GAM)   LTE-TDD   9.48   ±9.6%   10230   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-GAM)   LTE-TDD   9.48   ±9.6%   10231   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 2 GPSK)   LTE-TDD   9.19   ±9.6%   10231   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 2 GPSK)   LTE-TDD   9.19   ±9.6%   10232   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GPSK)   LTE-TDD   10.25   ±9.6%   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GHSK)   LTE-TDD   10.25   ±9.6%   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GHSK)   LTE-TDD   10.25   ±9.6%   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GHSK)   LTE-TDD   10.25   ±9.6%   10235   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 4 GHSK)   LTE-TDD   9.48   ±9.6%   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 2 GPSK)   LTE-TDD   9.21   ±9.6%   10237   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 2 GPSK)   LTE-TDD   9.21   ±9.6%   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 2 GPSK)   LTE-TDD   10.25   ±9.6%   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 2 GPSK)   LTE-TDD   10.25   ±9.6%   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 6-GAM)   LTE-TDD   10.25   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 6-GAM)   LTE-TDD   10.25   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 6-GAM)   LTE-TDD   10.25   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 6-GAM)   LTE-TDD   10.25   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 6-GAM)   LTE-TDD   10.06   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 6-GAM)   LTE-TDD   10.06   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-GAM)   LTE-TDD   10.06   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-GAM)   LTE-TDD   10.06   ±9.6%   10234   CAF   LTE-TDD (SC-FDMA,						
1022F   CAA   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.49   ±9.6 %   1022B   CAA   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.22   ±9.6 %   1022B   CAA   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 67-SK)   LTE-TDD   9.22   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)   LTE-TDD   9.48   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-CAM)   LTE-TDD   9.48   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-CAM)   LTE-TDD   9.48   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 CAM)   LTE-TDD   9.21   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1023B   CAC   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 2 PSK)   LTE-TDD   10.25   ±9.6 %   1024B   CAC   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-CAM)   LTE-TDD   9.21   ±9.6 %   1024B   CAC   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-CAM)   LTE-TDD   9.21   ±9.6 %   1024B   CAC   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-CAM)   LTE-TDD   9.20   ±9.6 %   1024B   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-CAM)   LTE-TDD   9.20   ±9.6 %   1024B   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-CAM)   LTE-TDD   9.20		<del></del>				
10227   CAA						
10228   CAA   LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, GPSK)   LTE-TDD   9.22   ± 9.6 %   10230   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-GAM)   LTE-TDD   10.25   ± 9.6 %   10231   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 26-GAM)   LTE-TDD   10.25   ± 9.6 %   10232   CAF   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 26-GAM)   LTE-TDD   9.48   ± 9.6 %   10232   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-GAM)   LTE-TDD   9.48   ± 9.6 %   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 26-GAM)   LTE-TDD   9.48   ± 9.6 %   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10235   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 26-GAM)   LTE-TDD   10.25   ± 9.6 %   10237   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 26-GAM)   LTE-TDD   10.25   ± 9.6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 26-GAM)   LTE-TDD   10.25   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-GAM)   LTE-TDD   10.25   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-GAM)   LTE-TDD   10.25   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10241   CAA   LTE-TDD (SC-FDMA, 50% RB, 1 A MHz, 26-GAM)   LTE-TDD   9.21   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1 A MHz, 26-GAM)   LTE-TDD   9.86   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1 A MHz, 26-GAM)   LTE-TDD   10.06   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1 A MHz, 26-GAM)   LTE-TDD   10.06   ± 9.6 %   10242   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-GAM)   LTE-TDD   10.06   ± 9.6 %   10242   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-GAM)   LTE-TDD   10.07   ± 9.6 %   10242   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-GAM)   LTE-TDD   10.10   10.10   ± 9.6 %   10242   CAF   LTE-TDD (SC						
10229   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)   LTE-TDD   9.48   ± 9.6 %   10231   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, CPSK)   LTE-TDD   9.19   ± 9.6 %   10231   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, CPSK)   LTE-TDD   9.19   ± 9.6 %   10232   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 1 CAM)   LTE-TDD   10.25   ± 9.6 %   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GA-CAM)   LTE-TDD   10.25   ± 9.6 %   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GA-CAM)   LTE-TDD   10.25   ± 9.6 %   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 2 GA-CAM)   LTE-TDD   9.48   ± 9.6 %   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 2 GA-CAM)   LTE-TDD   9.48   ± 9.6 %   10237   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 2 GA-CAM)   LTE-TDD   9.48   ± 9.6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 2 GA-CAM)   LTE-TDD   9.48   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 2 GA-CAM)   LTE-TDD   9.48   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 4-QA-CAM)   LTE-TDD   9.48   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 4-QA-CAM)   LTE-TDD   9.48   ± 9.6 %   10241   CAA   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 4-QA-CAM)   LTE-TDD   9.48   ± 9.6 %   10241   CAA   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 4-QA-CAM)   LTE-TDD   9.48   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 4-QA-CAM)   LTE-TDD   9.21   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4-QA-CAM)   LTE-TDD   9.21   ± 9.6 %   10244   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4-QA-CAM)   LTE-TDD   9.80   ± 9.6 %   10244   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA-CAM)   LTE-TDD   9.6 %   10244   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA-CAM)   LTE-TDD   9.6 %   10244   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA-CAM)   LTE-TDD   9.6 %   10244   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA-CAM)   LTE-TDD   9.6 %   10244   CAA   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA-CAM)   LTE-TDD   9.9 %   9.6 %   10244   CAF   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA-CAM)   LTE-TDD   9.9 %   9.6 %   10244   CAF   LTE-TDD (SC-FDMA, 5 WR, 8, 1 MHz, 4 GA						
10230   CAC   LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-CAM)						
10232   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-CAM)   LTE-TDD   10.25   ± 9.6 %   10234   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-CAM)   LTE-TDD   10.25   ± 9.6 %   10235   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10235   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10237   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 1 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10241   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.82   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-CAM)   LTE-TDD   9.80   ± 9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   9.80   ± 9.6 %   10246   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   9.20   ± 9.6 %   10246   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   9.20   ± 9.6 %   10246   CAF   LTE-TDD (SC-FDMA, 50% RB, 5						
10233   CAF						
10233   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)   LTE-TDD   9.21   ±9.8 %   10235   CAF   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, CPSK)   LTE-TDD   9.21   ±9.8 %   10235   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)   LTE-TDD   9.48   ±9.8 %   10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, GPSK)   LTE-TDD   10.25   ±9.8 %   10237   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, GPSK)   LTE-TDD   9.21   ±9.6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, GPSK)   LTE-TDD   9.21   ±9.6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, GPSK)   LTE-TDD   9.21   ±9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, GPSK)   LTE-TDD   9.22   ±9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, GPSK)   LTE-TDD   9.22   ±9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)   LTE-TDD   9.22   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, GPSK)   LTE-TDD   9.82   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   LTE-TDD   9.86   ±9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, GPSK)   LTE-TDD   9.46   ±9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, GPSK)   LTE-TDD   9.46   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)   LTE-TDD   9.40   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)   LTE-TDD   9.90   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10246   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.29   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.92   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.93   ±9.6 %   10256   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.93   ±9.6 %   10256   CAF   LTE						
10234						
10236   CAF   LTE-TDD (SC-FDMA, 1RB, 10 MHz, 48-QAM)   LTE-TDD   10.25 ± 9.8 %   10237   CAF   LTE-TDD (SC-FDMA, 1RB, 10 MHz, QPSK)   LTE-TDD   10.25 ± 9.8 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)   LTE-TDD   9.21 ± 9.8 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)   LTE-TDD   10.25 ± 9.8 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)   LTE-TDD   10.25 ± 9.8 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)   LTE-TDD   10.25 ± 9.8 %   10240   CAF   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)   LTE-TDD   9.81 ± 9.8 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)   LTE-TDD   9.82 ± 9.8 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   LTE-TDD   9.46 ± 9.8 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   LTE-TDD   9.46 ± 9.8 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)   LTE-TDD   9.46 ± 9.8 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   10.06 ± 9.8 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   10.06 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   LTE-TDD   9.30 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   LTE-TDD   10.06 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   LTE-TDD   10.09 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   10.09 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.30 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   10.09 ± 9.8 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.9 ± 9.8 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   LTE-TDD   9.9 ± 9.8 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)   LTE-TDD   9.9 ± 9.8 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)   LTE-TDD   9.9 ± 9.8 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)   LTE-TDD   9.9 ± 9.8 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, QPSK)   LTE-TDD   9.9 ± 9.8 %   10250   CA						
10236   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)   LTE-TDD   10.25   ± 9.8 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)   LTE-TDD   9.21   ± 9.8 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-OAM)   LTE-TDD   9.26   ± 9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-OAM)   LTE-TDD   10.25   ± 9.6 %   10241   CAA   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)   LTE-TDD   9.21   ± 9.6 %   10241   CAA   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)   LTE-TDD   9.21   ± 9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, G4-OAM)   LTE-TDD   9.82   ± 9.6 %   10243   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, G4-OAM)   LTE-TDD   9.86   ± 9.6 %   10243   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, G4-OAM)   LTE-TDD   9.86   ± 9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, G4-OAM)   LTE-TDD   10.06   ± 9.6 %   10245   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, G4-OAM)   LTE-TDD   10.06   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)   LTE-TDD   10.06   ± 9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   10.06   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.30   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.29   ± 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, 5 MHz, QPSK)   LTE-TDD   9.29   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.29   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.29   ± 9.6 %   10250   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, QPSK)   LTE-TDD   9.20   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)   LTE-TDD   9.20   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)   LTE-TDD   9.20   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)   LTE-TDD   9.20   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPS						
10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, GPSK)   LTE-TDD   9.41   ±9.6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-CAM)   LTE-TDD   9.48   ±9.6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-CAM)   LTE-TDD   9.48   ±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, 14 MHz, 16-CAM)   LTE-TDD   9.22   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-CAM)   LTE-TDD   9.62   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, QPSK)   LTE-TDD   9.66   ±9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-CAM)   LTE-TDD   9.46   ±9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-CAM)   LTE-TDD   9.46   ±9.6 %   10245   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   10.06   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   10.06   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   10.06   ±9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-CAM)   LTE-TDD   10.09   ±9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, C4-CAM)   LTE-TDD   10.09   ±9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, C4-CAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, C4-CAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, C4-CAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.81   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.81   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.81   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.81   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.81   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.80   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, C4-CAM)   LTE-TDD   9.20   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 100% RB, 16		<del></del>		<del>}</del>		
10238   CAF		<del></del>		<u> </u>		
10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)   LTE-TDD   9.21   ±9.8 %   10241   CAA   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)   LTE-TDD   9.21   ±9.8 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1 4 MHz, 16-QAM)   LTE-TDD   9.62   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1 4 MHz, 64-QAM)   LTE-TDD   9.68   ±9.6 %   10242   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   9.46   ±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, 64-QAM)   LTE-TDD   10.06   ±9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   10.06   ±9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   LTE-TDD   10.06   ±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, 64-QAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   LTE-TDD   10.17   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   LTE-TDD   10.17   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)   LTE-TDD   10.17   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QFSK)   LTE-TDD   10.17   ±9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QFSK)   LTE-TDD   10.17   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QFSK)   LTE-TDD   10.10   ±9.6 %   10255   CAA   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QFSK)   LTE-TDD   9.20   ±9.6 %   10255   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QFSK)   LTE-TDD   9.20   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QFSK)   LTE-TDD   9.20   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100%		<u> </u>				
10240   CAF   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, QPSK)   LTE-TDD   9.21   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)   LTE-TDD   9.22   ±9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, G4-QAM)   LTE-TDD   9.86   ±9.6 %   10243   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, G4-QAM)   LTE-TDD   10.06   ±9.6 %   10245   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 %   10245   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, QPSK)   LTE-TDD   9.30   ±9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, G4-QAM)   LTE-TDD   10.09   ±9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, G4-QAM)   LTE-TDD   10.09   ±9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, G4-QAM)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   10.09   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, G4-QAM)   LTE-TDD   10.17   ±9.6 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, G4-QAM)   LTE-TDD   10.17   ±9.6 %   10252   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, G4-QAM)   LTE-TDD   10.17   ±9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, G4-QAM)   LTE-TDD   10.17   ±9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, G4-QAM)   LTE-TDD   10.17   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, G4-QAM)   LTE-TDD   10.14   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, G4-QAM)   LTE-TDD   10.14   ±9.6 %   10255   CAA   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, G4-QAM)   LTE-TDD   10.14   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, G4-QAM)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, G4-QAM)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, G4-QAM)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, G4-QAM)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (						
10241   CAA   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM)   LTE-TDD   9.82   4.9.6 %   10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 64-QAM)   LTE-TDD   9.86   4.9.6 %   10243   CAA   LTE-TDD (SC-FDMA, 50% RB, 34 MHz, 16-QAM)   LTE-TDD   9.46   4.9.6 %   10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   LTE-TDD   10.06   4.9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   10.06   4.9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   10.06   4.9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   9.30   4.9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   9.30   4.9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   10.09   4.9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   10.09   4.9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   LTE-TDD   10.09   4.9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)   LTE-TDD   9.29   4.9.6 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)   LTE-TDD   10.17   4.9.6 %   10252   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)   LTE-TDD   10.17   4.9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)   LTE-TDD   9.90   4.9.6 %   10254   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)   LTE-TDD   10.17   4.9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)   LTE-TDD   9.90   4.9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)   LTE-TDD   9.90   4.9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)   LTE-TDD   9.90   4.9.6 %   10257   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)   LTE-TDD   9.90   4.9.6 %   10258   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   LTE-TDD   9.90   4.9.6 %   10259   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   LTE-TDD   9.90   4.9.6 %   10260   CAF   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   LTE-TDD   9.90   4.9.6 %   10260   CAF   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   LTE-TDD   9.90   4.9.6 %						
10242   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, G-QAM)   LTE-TDD   9.86   ±9.6 %   10243   CAA   LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, GPSK)   LTE-TDD   9.46   ±9.6 %   10245   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 1.6 -QAM)   LTE-TDD   10.06   ±9.6 %   10245   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, G-QAM)   LTE-TDD   10.06   ±9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, GPSK)   LTE-TDD   10.06   ±9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.90   ±9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, GPSK)   LTE-TDD   9.92   ±9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, GPSK)   LTE-TDD   9.29   ±9.6 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, GPSK)   LTE-TDD   9.21   ±9.6 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, GPSK)   LTE-TDD   10.17   ±9.6 %   10252   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, GPSK)   LTE-TDD   10.17   ±9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, GPSK)   LTE-TDD   9.90   ±9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, GPSK)   LTE-TDD   10.14   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, GPSK)   LTE-TDD   10.14   ±9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, GPSK)   LTE-TDD   10.14   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, GPSK)   LTE-TDD   9.20   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, GPSK)   LTE-TDD   9.20   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 13 MHz, GPSK)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, GPSK)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, GPSK)   LTE-TDD   9.90   ±9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, GPSK)   LTE-TDD   9.90   ±9.6 %   10256   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GPSK)   LTE-TDD   9.80   ±9.6 %   10256   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GPSK)   LTE-TDD		<del></del>				
10243   CAA   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, QPSK)   LTE-TDD   9.46   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   LTE-TDD   10.06   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)   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, 3 MHz, QPSK)   LTE-TDD   9.30   ± 9.6 %   10248   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   9.91   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   10.09   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.20   ± 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, 16-QAM)   LTE-TDD   9.81   ± 9.6 %   10252   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)   LTE-TDD   9.81   ± 9.6 %   10252   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)   LTE-TDD   9.20   ± 9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, GA-QAM)   LTE-TDD   9.90   ± 9.6 %   10254   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, GA-QAM)   LTE-TDD   9.90   ± 9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)   LTE-TDD   10.14   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10257   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10256   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10266   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10266   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% R		<del> </del>				
10244   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   LTE-TDD   10.06   ± 9.6 %   10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   10.06   ± 9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 26-QAM)   LTE-TDD   9.30   ± 9.6 %   10247   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   9.91   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 26-QAM)   LTE-TDD   9.91   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 20-QM)   LTE-TDD   9.29   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 20-QM)   LTE-TDD   9.29   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 20-QM)   LTE-TDD   9.29   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 20-QM)   LTE-TDD   9.11   ± 9.6 %   10251   CAF   LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 20-QM)   LTE-TDD   9.24   ± 9.6 %   10252   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, 20-QM)   LTE-TDD   9.24   ± 9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 20-QM)   LTE-TDD   9.24   ± 9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 20-QM)   LTE-TDD   9.00   ± 9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 20-QM)   LTE-TDD   9.00   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 20-QM)   LTE-TDD   9.20   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 20-QM)   LTE-TDD   9.00   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 20-QM)   LTE-TDD   9.06   ± 9.6 %   10258   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 20-QM)   LTE-TDD   9.96   ± 9.6 %   10258   CAA   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 20-QM)   LTE-TDD   9.96   ± 9.6 %   10258   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 20-QM)   LTE-TDD   9.97   ± 9.6 %   10256   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)   LTE-TDD   9.98   ± 9.6 %   10256   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)   LTE-TDD   9.99   ± 9.6 %   10260   CAC   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)   LTE-TDD   9.91   ± 9.6 %   10260   CAC   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)   LTE-TDD   9.92   ± 9.6 %   10260   CAF   LTE-		<del></del>				
10245   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   LTE-TDD   9.30   ± 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, 16-QAM)   LTE-TDD   10.09   ± 9.6 %   10249   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   LTE-TDD   10.09   ± 9.6 %   10250   CAF   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QFSK)   LTE-TDD   9.81   ± 9.6 %   10251   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, 04-QAM)   LTE-TDD   10.17   ± 9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, 16-QAM)   LTE-TDD   9.24   ± 9.6 %   10253   CAF   LTE-TDD (SC-FDMA, 50% RB, 16 MHz, 04-QAM)   LTE-TDD   9.90   ± 9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)   LTE-TDD   10.14   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)   LTE-TDD   9.20   ± 9.6 %   10256   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)   LTE-TDD   9.96   ± 9.6 %   10257   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)   LTE-TDD   9.96   ± 9.6 %   10258   CAA   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)   LTE-TDD   9.96   ± 9.6 %   10259   CAC   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)   LTE-TDD   9.96   ± 9.6 %   10259   CAC   LTE-TDD (SC-FDMA, 100% RB, 13 MHz, 64-QAM)   LTE-TDD   9.98   ± 9.6 %   10259   CAC   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)   LTE-TDD   9.98   ± 9.6 %   10260   CAC   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)   LTE-TDD   9.98   ± 9.6 %   10260   CAC   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 0PSK)   LTE-TDD   9.98   ± 9.6 %   10260   CAC   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 0PSK)   LTE-TDD   9.99   ± 9.6 %   10260   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 0PSK)   LTE-TDD   9.24   ± 9.6 %   10260   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 0PSK)   LTE-TDD   9.23   ± 9.6 %   10260   CA						
10246   CAC   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)						
10247   CAF	10246	CAC		LTE-TDD	9.30	± 9.6 %
10249	10247			LTE-TDD	9.91	± 9.6 %
10250   CAF	10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10251   CAF		CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	
10252   CAF	10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9,81	
10253	10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD		
10254   CAF					******	
10255   CAF		<del>1</del>				
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, 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   9.97   ± 9.6 %   10262   CAF   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, 16-QAM)   LTE-TDD   10.16   ± 9.6 %   10264   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   10.16   ± 9.6 %   10265   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)   LTE-TDD   9.23   ± 9.6 %   10265   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   9.92   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   10.07   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   10.07   ± 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, 16-QAM)   LTE-TDD   10.06   ± 9.6 %   10270   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, 64-QAM)   LTE-TDD   10.16   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)   LTE-TDD   10.16   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)   LTE-TDD   10.18   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)   LTE-TDD   10.18   ± 9.6 %   10270   CAA   PHS (QPSK)   LTE-TDD   9.58   ± 9.6 %   10271   CAA   PHS (QPSK)   LTE-TDD   9.58   ± 9.6 %   10272   CAA   PHS (QPSK)   LTE-TDD   9.58   ± 9.6 %   10273   CAA   PHS (QPSK)   LTE-TDD   10.6 %   10293   AAB   CDMA2000, RC3, SO55, F						
10257   CAA   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, QPSK)   LTE-TDD   9.24   ± 9.6 %   10263   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.83   ± 9.6 %   10263   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.23   ± 9.6 %   10265   CAF   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.23   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   9.92   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, G4-QAM)   LTE-TDD   9.92   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   10.07   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   10.07   ± 9.6 %   10266   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, G4-QAM)   LTE-TDD   10.06   ± 9.6 %   10268   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, G4-QAM)   LTE-TDD   10.06   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, G4-QAM)   LTE-TDD   10.13   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   LTE-TDD   10.16   ± 9.6 %   10277   CAA   DHS (QPSK)   LSC-TDMA, 100% RB, 15 MHz, QPSK)   LTE-TDD   10.18   ± 9.6 %   10277   CAA   PHS (QPSK)   Subtest 5, 3GPP Rel8.10)   WCDMA   3.96   ± 9.6 %   10278   CAA   PHS (QPSK)   Subtest 5, 3GPP Rel8.10)   WCDMA   3.96   ± 9.6 %   10279   CAA   PHS (QPSK)   Subtest 5, 3GPP Rel8.4)   WCDMA   3.96   ± 9.6 %   10279   CAA   PHS (QPSK)   BMMZ, Rolloff 0.5)   PHS   11.81   ± 9.6 %   10292   AAB   CDMA2000, RC3, SO55, Full Rate   CDMA2000   3.50   ± 9.6 %   10293   AAB   CDMA2000, RC3, SO35, Full Rate   CDMA2000   3.50   ± 9.6 %   10293   AAB   CDMA2000, RC3, SO35, Full Rate   CDMA2						
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   9.24   ± 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, 64-QAM)   LTE-TDD   10.16   ± 9.6 %   10265   CAF   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)   LTE-TDD   9.23   ± 9.6 %   10266   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, QPSK)   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, QPSK)   LTE-TDD   9.30   ± 9.6 %   10269   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)   LTE-TDD   10.10   ± 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   10.13   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   LTE-TDD   10.13   ± 9.6 %   10273   CAB   UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)   WCDMA   4.87   ± 9.6 %   10275   CAB   UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)   WCDMA   4.87   ± 9.6 %   10279   CAA   PHS (QPSK)   SW 884MHz, Rolloff 0.5)   PHS   11.81   ± 9.6 %   10279   CAA   PHS (QPSK, BW 884MHz, Rolloff 0.5)   PHS   11.81   ± 9.6 %   10290   AAB   CDMA2000, RC3, SO35, Full Rate   CDMA2000   3.39   ± 9.6 %   10291   AAB   CDMA2000, RC3, SO35, Full Rate   CDMA2000   3.50   ± 9.6 %   10292   AAB   CDMA2000, RC3, SO35, Full Rate   CDMA2000   3.50   ± 9.6 %   10293   AAB   CDMA2000, RC3, SO35, Full Rate   CDMA2000   12.49   ± 9.6 %   10298   AAD   LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)   LTE-F	·					
10259						
10260						
10261						
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         10.07         ± 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, 64-QAM)         LTE-TDD         10.13         ± 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						
10263						
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, 64-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         9.58         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         9.58         ± 9.6 %           10271         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP						
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 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91		<del></del>				
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, GPSK)         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 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.39 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
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, SO32, Full Rate         CDMA2000         3.39         ± 9.6 % </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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, SO35, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 % </td <td></td> <td></td> <td></td> <td></td> <td>***************************************</td> <td>,</td>					***************************************	,
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, SO35, Full Rate         CDMA2000         3.39         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 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, SO3, Full Rate         CDMA2000         3.50         ± 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 %						
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         5.72         ± 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 %						
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 %						
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 %						
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 %						
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 %				PHS		
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 %						
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 %						
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 %				·		± 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 %				CDMA2000	3.50	± 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 %	10295		CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	
	10297	AAD				± 9.6 %
10299   AAD   LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   LTE-FDD   6.39   ± 9.6 %						
	10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

10300	AAD	LITE EDD (SC EDMA FOR DD 2 MILE CA CAMA)	LITE EDD	0.00	1000
10300	AAA	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM) IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	LTE-FDD WiMAX	6.60 12.03	±9.6 % ±9.6 %
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL	WIMAX	12.03	± 9.6 %
10002	/ 001	symbols)	VVIIVIAA	12.57	19.0 %
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)			
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WiMAX	14.67	±9.6%
		symbols)			
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WiMAX	14.49	± 9.6 %
40000		symbols)			
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	WiMAX	14.57	± 9.6 %
10010	1 777	symbols)	VVIIVIAA	14.57	I 9.0 %
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 10404	AAB AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A) CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	3.77	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	CDMA2000 LTE-TDD	5.22 7.82	±9.6 % ±9.6 %
10710	/ "	Subframe=2,3,4,7,8,9, Subframe Conf=4)	LIETIDD	1.02	I 9.0 %
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)			
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.19	± 9.6 %
		Short preambule)			
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	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8,41	± 9.6 %
10430 10431	AAD 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 (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.38	±9.6 %
10432	AAC	LTE-FDD (OFDMA, 13 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6 %
	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	LTE-FDD WCDMA	8.34 8.60	± 9.6 % ± 9.6 %
10434				7.82	± 9.6 %
10434 10435		LITE-TDD (SC-EDMA 1 RB 20 MHz OPSK III			1 0.0 70
10434 10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2.3.4.7.8.9)	LTE-TDD	7.02	
	AAF	Subframe=2,3,4,7,8,9)			
10435		Subframe=2,3,4,7,8,9) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10435 10447	AAF AAD	Subframe=2,3,4,7,8,9)	LTE-FDD LTE-FDD	7.56 7.53	± 9.6 % ± 9.6 %
10435 10447 10448	AAF AAD AAD	Subframe=2,3,4,7,8,9) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.56	± 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 %
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 Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6%
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	± 9.6 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 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	± 9.6 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
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 Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8,18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
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 Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	±9.6 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	±9.6 %
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
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 %

10493   AAE   LIE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL   LIE-TDD   8.41   ± 9.6 % Subframe-23,47,8.9     10494   AAF   LIE-TDD (SC-FDMA, 50% RB, 25 MHz, 20 Hz, 20 H	10493 10494 10495	AAE AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)			
10494   AAE	10494	AAF	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	10495		Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UI,			
ASUBrame=2,3,47,8,9    10496   AAF   LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL   LTE-TDD   8.34   ± 9.6 %     10497   AAF   LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.54   ± 9.6 %     10497   AAF   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL   LTE-TDD   7.67   ± 9.6 %     10498   AAA   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL   LTE-TDD   8.40   ± 9.6 %     10499   AAA   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL   LTE-TDD   8.40   ± 9.6 %     10500   AAB   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL   LTE-TDD   8.68   ± 9.6 %     10501   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, 16-QAM, UL   LTE-TDD   8.44   ± 9.6 %     10502   AAB   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL   LTE-TDD   8.44   ± 9.6 %     10503   AAE   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, 3 MHz, 64-QAM, UL   LTE-TDD   8.52   ± 9.6 %     10504   AAE   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD   8.52   ± 9.6 %     10505   AAE   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD   8.51   ± 9.6 %     10506   AAE   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD   8.51   ± 9.6 %     10506   AAE   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD   8.54   ± 9.6 %     10506   AAE   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD   8.54   ± 9.6 %     10507   AAE   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL   LTE-TDD   8.54   ± 9.6 %     10508   AAE   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL   LTE-TDD   8.56   ± 9.6 %     10509   AAE   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL   LTE-TDD   8.56   ± 9.6 %     10509   AAE   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL   LTE-TDD   8.56   ± 9.6 %     10509   AAE   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL   LTE-TDD   8.56   ± 9.6 %     10510   AAE   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL   LTE-TDD   8.57   ± 9.6 %     10511   AAE   LTE-TDD (SC-FDMA, 100% RB	10495		LTE-TDD (SC-FDMA: 50% RB: 20 MHz: QPSK: UL:		L	
10495   AAF		AAF		LTE-TDD	7.74	± 9.6 %
10496				LTE-TDD	8.37	± 9.6 %
No.   No.	40400	^ ^ =		LTE TOO	0.54	
10497   AAA   LTE-TDD   ISC-FDMA, 100% RB, 1.4 MHz, QPSK, UL   LTE-TDD   7.67   ± 9.6 %   Subframe-2,3.4,7.8.9   Subframe-2,3.4,7.8.9   LTE-TDD   ISC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL   LTE-TDD   ISC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL   LTE-TDD   ISC-FDMA, 100% RB, 3.4 MHz, QPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 5.4 MHz, QPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 10 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 15 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 10 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 10 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 10 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 20 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 20 MHz, GPSK, UL   LTE-TDD   ISC-FDMA, 100% RB, 20 MHz, GPSK, UL   LTE-TDD   ISC	10496	AAF		LIE-IDD	8.54	±9.6%
10498	10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.67	± 9.6 %
Subframe=2,3,4,7,8,9	10409	A A A	Subframe=2,3,4,7,8,9)	LIE IDD	9.40	1060/
Subframe=2,3,4,7,8,9    Subf	10490	AAA		LIE-IDD	0.40	19.0%
10500	10499	AAA		LTE-TDD	8.68	± 9.6 %
Subframe=2,3,4,7,8,9	10500	AAR	Subtrame=2,3,4,7,8,9)  LTF-TDD (SC-FDMA 100% RB 3 MHz OPSK UII	I TE-TOD	7.67	+96%
Subframe=2,3,4,7,8,9			Subframe=2,3,4,7,8,9)			
10502	10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.44	±9.6%
Subframe=2,3,4,7,8,9    10504   AAE   LTE-TDD (SC-PDMA, 100% RB, 5 MHz, QPSK, UL   LTE-TDD (SC-PDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD (SC-PDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD (SC-PDMA, 100% RB, 5 MHz, 16-QAM, UL   LTE-TDD   8.31   ±9.6 %   Subframe=2,3,4,7,8,9    Subframe=2,3,4,7,8	10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.52	± 9.6 %
Subframe=2,3,4,7,8,9    Subf			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 %   Subframe=2,3,4,7,8,9   Subframe=2,3,4,7,8,9   Subframe=2,3,4,7,8,9   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL   LTE-TDD   7.74   ± 9.6 %   Subframe=2,3,4,7,8,9   Subframe=2,3,4,7,8,9   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL   LTE-TDD   8.36   ± 9.6 %   Subframe=2,3,4,7,8,9   Subframe=2,3,4,7	10503	AAE		LTE-TDD	7.72	± 9.6 %
10505   AAE   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL   LTE-TDD   8.54   ± 9.6 % Subframe=2,3,4,7,8,9)   Subframe=2,3,4,7,8,9)   Subframe=2,3,4,7,8,9)   Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL   LTE-TDD   8.36   ± 9.6 % Subframe=2,3,4,7,8,9)   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)   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL   LTE-TDD   7.99   ± 9.6 % 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)   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 (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL   LTE-TDD   8.51   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL   LTE-TDD   8.51   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, GPSK, UL   LTE-TDD   8.42   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.42   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 9.6 % Subframe=2,3,4,7,8,9)   LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL   LTE-TDD   8.45   ± 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 %
Subframe=2,3,4,7,8,9    LTE-TDD   SC-FDMA, 100% RB, 10 MHz, QPSK, UL   LTE-TDD   S. Seb   Subframe=2,3,4,7,8,9    LTE-TDD   SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL   LTE-TDD   S. Seb   Subframe=2,3,4,7,8,9    LTE-TDD   SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL   LTE-TDD   S. Seb   Seb   Subframe=2,3,4,7,8,9    LTE-TDD   SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL   LTE-TDD   S. Seb   Seb	40505		Subframe=2,3,4,7,8,9)			
10506   AAE	10505	AAL	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2 3 4 7 8 9)	LIE-IDD	8.54	± 9.6 %
10507   AAE	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	A A E		LTC TOD	0.26	1060/
10508	10307	AAL		FIE-IDD	0.30	19.0%
10509	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 (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 LTE-TDD	10509	AAF	Subtrame=2,3,4,7,8,9)  I TE-TDD (SC-EDMA 100% RB 15 MHz OPSK 11)	I TE-TOD	7 99	+96%
Subframe=2,3,4,7,8,9    LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL   LTE-TDD   S.51			Subframe=2,3,4,7,8,9)			
10511	10510	AAE		LTE-TDD	8.49	± 9.6 %
10512	10511	AAE		LTE-TDD	8.51	± 9.6 %
Subframe=2,3,4,7,8,9	10512	۸۸۲		LTE TOD		1000
10513	10512	AAF	Subframe=2,3,4,7,8,9)	LIE-IUU	7.74	± 9.6 %
10514	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	10514	A A E		I TE TOO	0.45	1069/
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	10314	771		LIE-IDD	0.40	19.0%
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, MCS2, 99pc duty cycle)         WLAN         8.21         ± 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         8.21         ± 9.6 %           10529         AAB         IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)         WLAN         8.36         ± 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         8.21         ± 9.6 %           10527         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 %					·}···	
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, MCS3, 99pc duty cycle)       WLAN       8.36       ± 9.6 %         10528       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, MCS6, 99pc duty cycle)						
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 %         10531       AAB       IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)       WLAN       8.43       ± 9.6 %         10532       AAB       IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)       WLAN       8.43       ± 9.6 %			IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)			
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 %           10532         AAB         IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)         WLAN         8.29         ± 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 %           10532         AAB         IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)         WLAN         8.29         ± 9.6 %						1
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 %         10532       AAB       IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)       WLAN       8.29       ± 9.6 %			IEEE 802.11a/n WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)			
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       AAB       IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)       WLAN       8.29       ± 9.6 %			IEEE 802.11a/n WIFI 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)		<del>-</del>	
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       8.29       ± 9.6 %			IEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)			
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         8.29         ± 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         8.29         ± 9.6 %	10026					± 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         8.29         ± 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         8.29         ± 9.6 %						<del>†</del>
10532 AAB IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) WLAN 8.29 ± 9.6 %						· · · · · · · · · · · · · · · · · · ·
T TOOOD T MAN T LEEE OUZ, I TAG WIFT (ZUMITIZ, MICOO, MADG CHER CYCHE) T VYLANI T 1 X 3X T + 9 K % T						
10534 AAB   IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)   WLAN   8.45   ± 9.6 %	10004	WYD	TELE OUZ. Frac WIFT (40WIFIZ, WICOU, 99PC duty cycle)	IVVLAIN	0.45	I 3.0 %

19553 AAB ILEEE 802.11ac WIF1 (doWHz, MCS2, 99pc duty cycle) WILAN 8.32 9.96 % 1957 AAB ILEEE 802.11ac WIF1 (doWHz, MCS3, 99pc duty cycle) WILAN 8.44 19.65 %	40505	T 4 4 5				
1993   AAB	10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	± 9.6 %
1958a   AAB		AAB		WLAN	8.32	±9.6 %
1953a   AAB	10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	
19540   AAB	10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99nc duty cycle)			
10541   AAB			IEEE 802 11ac WiFi (40MHz, MCS6, 00pc duty cyclo)			
10542   AAB   EEE 802.11ac WIFI (40MHz, MCS8, 99bc duty cycle)						
10544   AAB   EEE 802.11ac WIFI (40MHz, MCS9, 99bc duty cycle)						
10545   AAB   IEEE 802.11ac WIFI (60MHz, MCS0, 99pc duty cycle)			IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	1	8.65	
19546   AAB   EEE 802.11ac Wirri (80Mtz, MCS1, 99bc duty cycle)			IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10546	10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	
10547   AAB   IEEE 802.11ac WIF (80MHz, MCS2, 99pc duty cycle)   WLAN   8.35   ± 9.6 %   10547   AAB   IEEE 802.11ac WIF (80MHz, MCS3, 99pc duty cycle)   WLAN   8.37   ± 9.6 %   10548   AAB   IEEE 802.11ac WIF (80MHz, MCS4, 99pc duty cycle)   WLAN   8.37   ± 9.6 %   10550   AAB   IEEE 802.11ac WIF (80MHz, MCS6, 99pc duty cycle)   WLAN   8.38   ± 9.6 %   10551   AAB   IEEE 802.11ac WIF (80MHz, MCS6, 99pc duty cycle)   WLAN   8.42   ± 9.6 %   10551   AAB   IEEE 802.11ac WIF (80MHz, MCS6, 99pc duty cycle)   WLAN   8.42   ± 9.6 %   10552   AAB   IEEE 802.11ac WIF (80MHz, MCS6, 99pc duty cycle)   WLAN   8.42   ± 9.6 %   10553   AAB   IEEE 802.11ac WIF (80MHz, MCS6, 99pc duty cycle)   WLAN   8.44   ± 9.6 %   10554   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.48   ± 9.6 %   10555   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.48   ± 9.6 %   10555   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.50   ± 9.6 %   10555   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.50   ± 9.6 %   10555   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.50   ± 9.6 %   10555   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.50   ± 9.6 %   10556   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.50   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS1, 99pc duty cycle)   WLAN   8.61   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS3, 99pc duty cycle)   WLAN   8.61   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS3, 99pc duty cycle)   WLAN   8.61   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS7, 99pc duty cycle)   WLAN   8.61   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS9, 99pc duty cycle)   WLAN   8.60   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS9, 99pc duty cycle)   WLAN   8.60   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS9, 90pc duty cycle)   WLAN   8.60   ± 9.6 %   10566   AAC   IEEE 802.11ac WIF (100MHz, MCS9, 90pc duty cycle)   WLAN	10545	AAB				
10549						
10549						
10550						
10951						
10552				WLAN	8.38	± 9.6 %
10552	10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±9.6%
19553	10552	AAB				
10554					****	
109555         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS1, 99pc duty cycle)         WLAN         8.47         ± 9.6 %           10556         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS2, 99pc duty cycle)         WLAN         8.50         ± 9.6 %           10557         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS3, 99pc duty cycle)         WLAN         8.52         ± 9.6 %           10560         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS3, 99pc duty cycle)         WLAN         8.61         ± 9.6 %           10561         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS9, 99pc duty cycle)         WLAN         8.53         ± 9.6 %           10562         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS9, 99pc duty cycle)         WLAN         8.56         ± 9.6 %           10563         AAC         IEEE 802.11 ac WiF1 (160MHz, MCS9, 99pc duty cycle)         WLAN         8.56         ± 9.6 %           10564         AAA         IEEE 802.11 g WiF1 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty         WLAN         8.25         ± 9.6 %           10565         AAA         IEEE 802.11 g WiF1 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty         WLAN         8.13         ± 9.6 %           10566         AAA         IEEE 802.11 g WiF1 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty         WLAN         8.37         ± 9.6 %						
10556						
10557         AAC         IEEE 802.11ac WiFI (160MHz, MCS3, 99pc duty cycle)         WLAN         8.52         ± 9.6 %           10560         AAC         IEEE 802.11ac WiFI (160MHz, MCS6, 99pc duty cycle)         WLAN         8.61         ± 9.6 %           10560         AAC         IEEE 802.11ac WiFI (160MHz, MCS7, 99pc duty cycle)         WLAN         8.73         ± 9.6 %           10561         AAC         IEEE 802.11ac WiFI (160MHz, MCS8, 99pc duty cycle)         WLAN         8.75         ± 9.6 %           10563         AAC         IEEE 802.11ac WiFI (160MHz, MCS9, 99pc duty cycle)         WLAN         8.77         ± 9.6 %           10564         AAC         IEEE 802.11g WiFI (2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)         WLAN         8.77         ± 9.6 %           10565         AAA         IEEE 802.11g WiFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)         WLAN         8.75         ± 9.6 %           10566         AAA         IEEE 802.11g WiFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)         WLAN         8.13         ± 9.6 %           10567         AAA         IEEE 802.11g WiFI 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)         WLAN         8.01         ± 9.6 %           10568         AAA         IEEE 802.11g WiFI 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)         WLAN         8.37         ±			TEEE 802.11ac WIFI (160MHz, MCS1, 99pc duty cycle)			
10558		AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	±9.6%
10558         AAC         IEEE 802.11ac WIFI (160MHz, McS6, 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, McS8, 99pc duty cycle)         WLAN         8.56         ± 9.6 %           10563         AAC         IEEE 802.11ac WIFI (160MHz, McS8, 99pc duty cycle)         WLAN         8.77         ± 9.6 %           10564         AAA         IEEE 802.11ag WIFI 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)         WLAN         8.75         ± 9.6 %           10565         AAA         IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)         WLAN         8.45         ± 9.6 %           10566         AAA         IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)         WLAN         8.13         ± 9.6 %           10567         AAA         IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)         WLAN         8.37         ± 9.6 %           10569         AAA         IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)         WLAN         8.37         ± 9.6 %           10570         AAA         IEEE 802.11g WIFI 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)         WLAN         1.99 & %	10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	±9.6 %
10560	10558	AAC				
10561						
10562						
10563						
10564						
Copyole		AAC		WLAN	8.77	± 9.6 %
Copyole   Copy	10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
10565		}	cycle)			
Cycle	10565	AAA		VA/LANI	8.45	+06%
10566	10000	1,000		VVLAIN	0.43	1 3.0 %
Cycle   Cycl	10500	^ ^ ^		10/1 001		
10567	10566	AAA		WLAN	8.13	± 9.6 %
Cycle   Cycl						
10568	10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
Cycle    10569			cycle)			
Cycle    10569	10568	AAA	IEEE 802,11g WiFi 2,4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	±9.6%
10569	1				0.0.	
Cycle   10570	10569	ΔΔΔ		MAI ANI	9.10	406%
10570	10303	777		AATTAIA	0.10	4 9.0 /6
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, 5.5 Mbps, 90pc duty cycle)   WLAN   1.98   ± 9.6 %   10575   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)   WLAN   8.59   ± 9.6 %   10576   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)   WLAN   8.60   ± 9.6 %   10577   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)   WLAN   8.70   ± 9.6 %   10578   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)   WLAN   8.49   ± 9.6 %   10579   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)   WLAN   8.36   ± 9.6 %   10580   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)   WLAN   8.76   ± 9.6 %   10581   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)   WLAN   8.35   ± 9.6 %   10582   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)   WLAN   8.67   ± 9.6 %   10583   AAB   IEEE 802.11g WiFi 5 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)   WLAN   8.59   ± 9.6 %   10583   AAB   IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)   WLAN   8.50   ± 9.6 %   10586   AAB   IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)   WLAN   8.60   ± 9.6 %   10586   AAB   IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)   WLAN   8.60   ± 9.6 %   10586   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, 13 Mbps, 90pc duty cycle)   WLAN   8.49   ± 9.6 %   10586   AAB   IEEE 802.11a/h WiFi 5 GHz (OFDM, 13 Mbps, 90pc duty cycle)   WLAN   8.49   ± 9.6 %   10586   AAB   IEEE 802.11a/h WiFi 5 GHz (OFDM, 13 Mbps, 90pc duty cycle)   WLAN   8.49   ± 9.6 %   10586   AAB   IEEE 802.11	40570	A A A		1471 661		
10571         AAA         IÉEÉ 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)         WLAN         1.99         ± 9.6 %           10572         AAA         IEEÉ 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)         WLAN         1.99         ± 9.6 %           10573         AAA         IEEÉ 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)         WLAN         1.98         ± 9.6 %           10574         AAA         IEEÉ 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)         WLAN         1.98         ± 9.6 %           10575         AAA         IEEÉ 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)         WLAN         8.59         ± 9.6 %           10576         AAA         IEEÉ 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)         WLAN         8.60         ± 9.6 %           10577         AAA         IEEÉ 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)         WLAN         8.70         ± 9.6 %           10578         AAA         IEEÉ 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)         WLAN         8.36         ± 9.6 %           10579         AAA         IEEÉ 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)         WLAN         8.76         ± 9.6 %           10580         AAA         IEEÉ 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)         WLAN	10570	AAA		WLAN	8.30	±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 cycle)         WLAN         8.59         ± 9.6 %           10576         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)         WLAN         8.60         ± 9.6 %           10577         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)         WLAN         8.70         ± 9.6 %           10578         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)         WLAN         8.49         ± 9.6 %           10579         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)         WLAN         8.36         ± 9.6 %           10580         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)         WLAN         8.76         ± 9.6 %           10581         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
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 cycle)         WLAN         8.59         ± 9.6 %           10576         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)         WLAN         8.60         ± 9.6 %           10577         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)         WLAN         8.70         ± 9.6 %           10578         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)         WLAN         8.49         ± 9.6 %           10579         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)         WLAN         8.36         ± 9.6 %           10580         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)         WLAN         8.76         ± 9.6 %           10581         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)         WLAN         8.67         ± 9.6 %           10582         AAA         IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) <t< td=""><td>10571</td><td>AAA</td><td>IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)</td><td>WLAN</td><td>1.99</td><td>± 9.6 %</td></t<>	10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 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 cycle)         WLAN         8.59         ± 9.6 %           10576         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)         WLAN         8.60         ± 9.6 %           10577         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)         WLAN         8.70         ± 9.6 %           10578         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)         WLAN         8.49         ± 9.6 %           10579         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)         WLAN         8.36         ± 9.6 %           10580         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)         WLAN         8.76         ± 9.6 %           10581         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)         WLAN         8.67         ± 9.6 %           10582         AAA         IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) <t< td=""><td>10572</td><td>AAA</td><td>IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)</td><td>WLAN</td><td>1.99</td><td>+9.6%</td></t<>	10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	+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 cycle)         WLAN         8.59         ± 9.6 %           10576         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)         WLAN         8.60         ± 9.6 %           10577         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)         WLAN         8.70         ± 9.6 %           10578         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)         WLAN         8.49         ± 9.6 %           10579         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)         WLAN         8.36         ± 9.6 %           10580         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)         WLAN         8.76         ± 9.6 %           10581         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)         WLAN         8.35         ± 9.6 %           10582         AAA         IEEE 802.11g WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)         WLAN         8.67         ± 9.6 %           10583         AAB         IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)         WL						
10575         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)         WLAN         8.59         ± 9.6 %           10576         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)         WLAN         8.60         ± 9.6 %           10577         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)         WLAN         8.70         ± 9.6 %           10578         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)         WLAN         8.49         ± 9.6 %           10579         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)         WLAN         8.36         ± 9.6 %           10580         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)         WLAN         8.76         ± 9.6 %           10581         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)         WLAN         8.35         ± 9.6 %           10582         AAA         IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)         WLAN         8.67         ± 9.6 %           10583         AAB         IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)         WLAN         8.59         ± 9.6 %           10585         AAB         IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)						
Cycle		<del></del>				
10576       AAA       IÉEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)       WLAN       8.60       ± 9.6 %         10577       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)       WLAN       8.70       ± 9.6 %         10578       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)       WLAN       8.49       ± 9.6 %         10579       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)       WLAN       8.36       ± 9.6 %         10580       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         10583       AAB       IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)       WLAN       8.59       ± 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 %	105/5	AAA	, , , , ,	WLAN	8.59	± 9.6 %
Cycle   10577		<u> </u>			1	
10577       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)       WLAN       8.70       ± 9.6 %         10578       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)       WLAN       8.49       ± 9.6 %         10579       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)       WLAN       8.36       ± 9.6 %         10580       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         10583       AAB       IEEE 802.11g/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, 12 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 %	10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	± 9.6 %
10577       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)       WLAN       8.70       ± 9.6 %         10578       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)       WLAN       8.49       ± 9.6 %         10579       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)       WLAN       8.36       ± 9.6 %         10580       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         10583       AAB       IEEE 802.11g/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, 12 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 %	-				Transman.	
cycle)         10578       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)       WLAN       8.49       ± 9.6 %         10579       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)       WLAN       8.36       ± 9.6 %         10580       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         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, 12 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 %	10577	AAA		WLAN	8.70	±9.6%
10578       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)       WLAN       8.49       ± 9.6 %         10579       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)       WLAN       8.36       ± 9.6 %         10580       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         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, 12 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 %	1	,			1	/
Cycle   10579   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)   WLAN   8.36   ± 9.6 % cycle   10580   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)   WLAN   8.76   ± 9.6 % cycle   10581   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle   WLAN   8.35   ± 9.6 % cycle   10582   AAA   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle   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 %	10579	1 A A A		10/1 001	9.40	+069/
10579       AAA       IÉEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)       WLAN       8.36       ± 9.6 %         10580       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         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, 12 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 %	10076	1	1	VALAIN	0.49	± 3.0 %
Cycle     10580   AAA     IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)   WLAN   8.76   ± 9.6 %						
10580       AAA       IÉEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)       WLAN       8.76       ± 9.6 %         10581       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         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 %	10579	AAA	, , , , , , , , , , , , , , , , , , , ,	WLAN	8.36	± 9.6 %
Cycle						
Cycle	10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN	8.76	± 9.6 %
10581       AAA       IÉEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)       WLAN       8.35       ± 9.6 %         10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         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 %			, , , , , , , , , , , , , , , , , , , ,	1		
Cycle	10581	ААА		WLAN	8.35	+96%
10582       AAA       IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)       WLAN       8.67       ± 9.6 %         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 %	.555,	,,,,,	,	**************************************	0.00	- 5.5 /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 %	10500	ΛΛΛ		1011 001	0.67	1069/
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 %	10582	AAA		VVLAN	10.07	± 9.0 %
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 %	L	<b> </b>				
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 %					8.59	
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 %	10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10586 AAB IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle) WLAN 8.49 ± 9.6 %		AAB				
10001   AND   IEEE 002.11a/11 WIF1 0 GIT2 (OFDIVI, 24 WIDPS, 30PC duty Cycle)   WEAR   0.30   13.0 %						
	10001	רעעה	TILLE OUZ. I TAITI VVII TO OTIZ (OT DIVI, Z4 WIDPS, 30PC duty Cycle)	1 AA 11/4	1 0.30	± 3.0 /0

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, MCS1, 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, MCS0, 30pc duty cycle)	WLAN		
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)		8.79	± 9.6 %
		TEEE 902.11 ac WIFT (TOUWITZ, WOSZ, SUPC QULY CYCIE)	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		CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
,	AAA			U. TU	± 0.0 /0
10652	AAA			***********	+060/
10652 10653	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±9.6 %
10652 10653 10654				***********	± 9.6 % ± 9.6 % ± 9.6 %

40055	TAAE	LITE TOD (OFDIA COLUMN E TIACA OF A COLUMN	T	T = = :	
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658 10659	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
	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 10673	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 %
<u> </u>	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10675 10676	AAA AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle) IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN WLAN	8.90	± 9.6 %
10677	AAA			8.77	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle) IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.89	±9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN WLAN	8.80	± 9.6 % ± 9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.62 8.83	
10683	AAA	IEEE 802.11ax (20MHz, MCS) 1, sope duty cycle)	WLAN	<del></del>	±9.6%
10684	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42 8.26	± 9.6 % ± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS1, 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	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	±96%
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 10710	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 WLAN	8.29	±9.6%
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle) IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.39 8.67	± 9.6 % ± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	±9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 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 (40MHz, 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 %
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 %
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	± 9.6 %
			<u> </u>		

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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 %

<sup>&</sup>lt;sup>E</sup> 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





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

Client

**PC Test** 

Certificate No: EX3-7551\_Sep19

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# CALIBRATION CERTIFICATE

Object

EX3DV4 - SN:7551

Calibration procedure(s)

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

BN 2019

Calibration date:

September 19, 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)

Certificate No: EX3-7551\_Sep19

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

Approved by: Katja Pokovic Technical Manager

issued: September 19, 2019

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

#### Calibration Laboratory of

Certificate No: EX3-7551\_Sep19

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





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

Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: SCS 0108

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

#### Glossary:

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

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

Polarization  $\phi$   $\phi$  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 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).

September 19, 2019 EX3DV4 - SN:7551

# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7551

**Basic Calibration Parameters** 

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) <sup>2</sup> ) <sup>A</sup>	0.57	0.54	0.56	± 10.1 %
DCP (mV) <sup>8</sup>	104.3	99.1	95.6	

UID	Communication System Name		ponse A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	+x	0.00	0.00	1.00	0.00	181.1	± 3.0 %	±4.7 %
•		Y	0.00	0.00	1.00		174.4		
		Z	0.00	0.00	1.00		174.0		
10352-	Pulse Waveform (200Hz, 10%)	X	15.00	89.60	21.65	10.00	60.0	± 3.9 %	± 9.6 %
AAA		Y	15.00	87.33	19.66		60.0		
		Z	15.00	88.48	20.15		60.0		
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	90.79	21.23	6.99	80.0	± 2.7 %	± 9.6 %
AAA	, , , ,	Y	15.00	87.95	18.66		80.0		
		Z	15.00	90.69	19.98		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	94.66	21.81	3.98	95.0	± 1.2 %	± 9.6 %
AAA	· · · · · · · · · · · · · · · · · · ·	Y	15.00	89.03	17.62	]	95.0		
		Z	15.00	94.85	20.37		95.0		
10355-	Pulse Waveform (200Hz, 60%)	Х	15.00	102.60	24.35	2,22	120.0	± 1.1 %	± 9.6 %
AAA	, , , , , , , , , , , , , , , , , , ,	Y	15.00	87.27	15.36		120.0		
		Z	15.00	97.27	19.82		120.0	]	
10387-	QPSK Waveform, 1 MHz	X	1.24	68.72	13.42	0.00	150.0	± 3.2 %	± 9.6 %
AAA		Y	0.54	60.00	7.02		150.0	Ì	
		Z	0.39	60.00	3.70		150.0		
10388-	QPSK Waveform, 10 MHz	X	2.73	71.86	17.85	0.00	150.0	± 1.4 %	± 9.6 %
AAA		Y	1.99	66.53	14.73		150.0		
		Z	2.16	69.95	16.98		150.0		
10396-	64-QAM Waveform, 100 kHz	X	3.60	74.00	20.55	3.01	150.0	± 0.9 %	± 9.6 %
AAA		Υ	2.73	68.63	17.73	_	150.0		
		Z	2.22	67.94	18.36		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.66	68.17	16.52	0.00	150.0	± 2.1 %	± 9.6 %
AAA		Y	3.37	66.52	15.34	]	150.0		
		Z	3.41	67.62	16.33		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	Х	4.90	65.94	15.82	0.00	150.0	± 4.2 %	± 9.6 %
AAA		Y	4.76	65.46	15.39		150.0	<u> </u>	
		Z	4.60	66.09	16.03		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 E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

B Numerical linearization parameter: uncertainty not required.

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

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# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7551

#### **Sensor Model Parameters**

	C1 fF	C2 fF	α V <sup>-1</sup>	T1 ms.V <sup>-2</sup>	T2 ms.V <sup>-1</sup>	T3 ms	T4 V <sup>-2</sup>	T5 V <sup>-1</sup>	Т6
X	47.8	351.65	34.83	22.77	0.50	5.10	0.98	0.37	1.01
Ŷ	41.0	312.25	36.63	13.13	0.44	5.08	0.35	0.46	1.01
ż	25.5	199.44	38.63	11.25	0.42	5.10	0.00	0.26	1.01

#### **Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	120.2
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

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# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7551

## Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	41.9	0.89	10.11	10.11	10.11	0.50	0.80	± 12.0 %
835	41.5	0.90	9.88	9.88	9.88	0.38	0.92	± 12.0 %
1750	40.1	1.37	8.34	8.34	8.34	0.28	0.80	± 12.0 %
1900	40.0	1.40	8.05	8.05	8.05	0.29	0.80	± 12.0 %
2300	39.5	1.67	7.74	7.74	7.74	0.30	0.90	± 12.0 %
2450	39.2	1.80	7.30	7.30	7.30	0.32	0.90	± 12.0 %
2600	39.0	1.96	7.18	7.18	7.18	0.35	0.90	± 12.0 %

<sup>&</sup>lt;sup>c</sup> 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 uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency balld. Prequency 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.

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 ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of

the ConvF uncertainty for indicated target tissue parameters.

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

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# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7551

# Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) <sup>c</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	55.5	0.96	10.09	10.09	10.09	0.45	0.80	± 12.0 %
835	55.2	0.97	9.92	9.92	9.92	0.42	0.80	± 12.0 %
1750	53.4	1.49	8.13	8.13	8.13	0.37	0.87	± 12.0 %
1900	53.3	1.52	7.69	7.69	7.69	0.41	0.80	± 12.0 %
2300	52.9	1.81	7.63	7.63	7.63	0.40	0.90	± 12.0 %
2450	52.7	1.95	7.41	7.41	7.41	0.36	0.90	± 12.0 %
2600	52.5	2.16	7.34	7.34	7.34	0.28	0.96	± 12.0 %

<sup>&</sup>lt;sup>C</sup> 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.

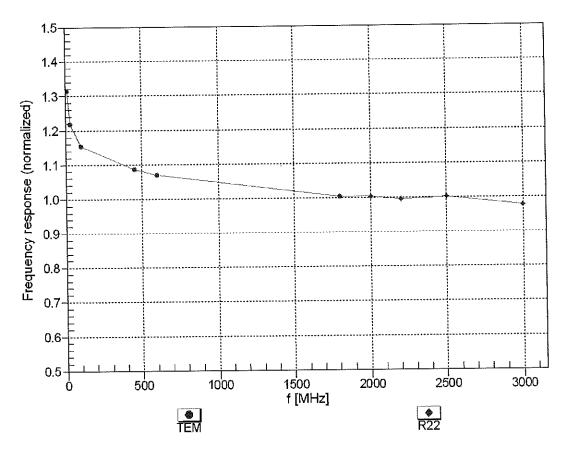
F At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to

F At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) 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 ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvE uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters.

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

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

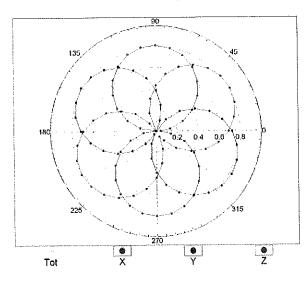


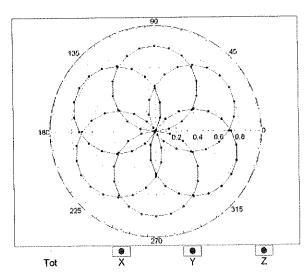
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

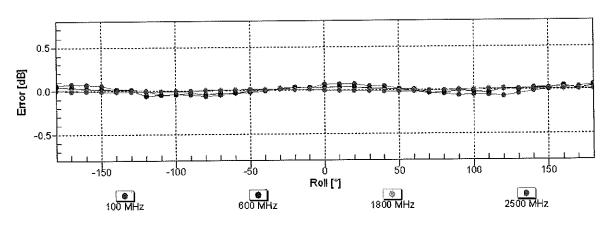
# Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

f=600 MHz,TEM

f=1800 MHz,R22

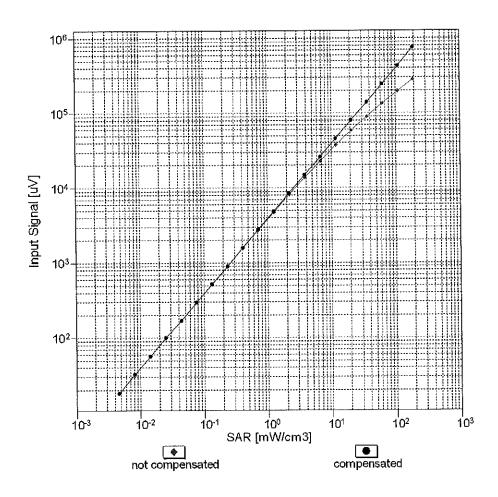


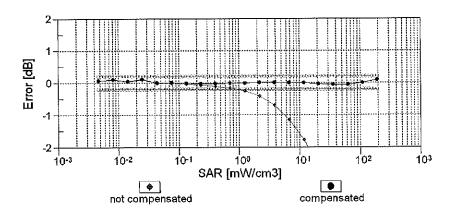




Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  (k=2)

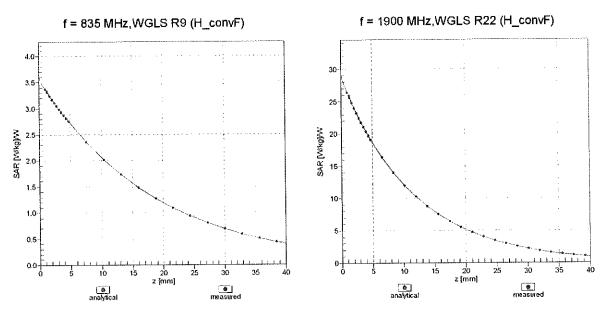
# Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)



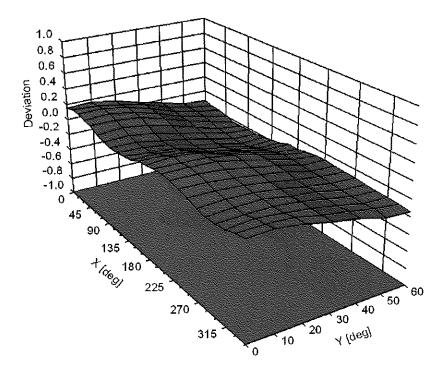


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

# **Conversion Factor Assessment**



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



EX3DV4- SN:7551

# **Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>E</sup> (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, 10 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	10.77	± 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 %
10097	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)			
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QFSK)	LTE-FDD	5.67	±9.6%
10101	CAE		LTE-FDD	6.42	±9.6 %
10102	CAG	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)  LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	6.60	±9.6%
10103	CAG		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		LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	±9.6%
10100	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

40400	040	LTE EDD (OC EDMA 4000) ED 40 MHz 46 OAM	LTE-FDD	6.43	± 9.6 %
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)  LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 10-QAM)	LTE-FDD	6.59	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10113	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±96%
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 6.42	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.60	± 9.6 % ± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	9.28	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)  LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TOD	9.92	± 9.6 %
10152 10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	10.05	± 9.6 %
10153	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 % ± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52 6.49	± 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, QPSK)	LTE-TDD	9.48	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10174	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10175 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 % ± 9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52 6.50	± 9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	VLAN	8.09	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.12	± 9.6 %
10194	CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenlied, 65 Mbps, 64-QAM)  IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10196	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BFSN) IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10197 10198	CAC	IEEE 802.11n (HT Mixed, 39 Midps, 10-QAM)	WLAN	8.27	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 00 Mbps, 64 Cally)	WLAN	8.03	± 9.6 %
10218	LOVO	The source of the traper of the		-	-1.//

10220	040	JEEE 000 dd - (UT Min old 00 Min old 00 Min			r
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		IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
	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	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6%
10230	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6%
10233	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10235	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAG	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	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	±9.6%
10242	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	±9.6%
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6 %
10246	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6 %
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6 %
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6 %
10249	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAG	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	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	±9.6 %
10258	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	±9.6 %
10261	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262		LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	±9.6 %
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAG	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 %
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	
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QFSK)	LTE-FDD	6.39	± 9.6 % ± 9.6 %
10200	, 0.32	= 1 = 1 DD   DD   DD   DD   DD   DD	FILTIUU	0.58	± 3.0 70

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)			- Laboratoria
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)			
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WiMAX	14.67	±9.6%
		symbols)			
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WiMAX	14.49	±9.6%
		symbols)			
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%
		symbols)			
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18	WiMAX	14.57	±9.6%
	L	symbols)	1 TE EDD	0.00	1000
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 WLAN	6.27 8.37	± 9.6 % ± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	CDMA2000	3.76	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.77	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A) CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10406	AAB	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	±9.6 %
10410	AAG	Subframe=2,3,4,7,8,9, Subframe Conf=4)	-, -, 00	7.02	20.070
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10414	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10415	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 %
10417	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.14	± 9.6 %
10-10	\ \tag{\tau_{\tau_{\tau_{\tau}}}}	Long preambule)	''		
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.19	± 9.6 %
10710	1,0.0.	Short preambule)	"		
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
		IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
1 1(1423	AAR				
10423 10424	AAB		WLAN	8.40	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN WLAN	8.40 8.41	± 9.6 % ± 9.6 %
10424 10425	AAB AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)			
10424 10425 10426	AAB AAB AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.41	± 9.6 %
10424 10425 10426 10427	AAB AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN WLAN	8.41 8.45	±9.6 % ±9.6 % ±9.6 % ±9.6 %
10424 10425 10426 10427 10430	AAB AAB AAB AAD	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	WLAN WLAN WLAN	8.41 8.45 8.41	± 9.6 % ± 9.6 % ± 9.6 %
10424 10425 10426 10427 10430 10431	AAB AAB AAB AAB AAD	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	WLAN WLAN WLAN LTE-FDD	8.41 8.45 8.41 8.28	±9.6 % ±9.6 % ±9.6 % ±9.6 %
10424 10425 10426 10427 10430 10431 10432	AAB AAB AAB AAD AAD AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	WLAN WLAN WLAN LTE-FDD LTE-FDD	8.41 8.45 8.41 8.28 8.38	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10424 10425 10426 10427 10430 10431 10432 10433	AAB AAB AAB AAD AAD AAC AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD	8.41 8.45 8.41 8.28 8.38 8.34	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10424 10425 10426 10427 10430 10431 10432 10433 10434	AAB AAB AAB AAD AAD AAC AAC AAA	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) W-CDMA (BS Test Model 1, 64 DPCH)	WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD	8.41 8.45 8.41 8.28 8.38 8.34 8.34	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10424 10425 10426 10427 10430 10431 10432 10433	AAB AAB AAB AAD AAD AAC AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) W-CDMA (BS Test Model 1, 64 DPCH) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD UTE-FDD WCDMA	8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	± 9.6 % ± 9.6 %
10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAD AAD AAC AAC AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) W-CDMA (BS Test Model 1, 64 DPCH) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD	8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	± 9.6 % ± 9.6 %
10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAD AAD AAC AAC AAC AAA	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) W-CDMA (BS Test Model 1, 64 DPCH) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD LTE-FDD LTE-TDD	8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAD AAD AAC AAC AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) W-CDMA (BS Test Model 1, 64 DPCH) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD	8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±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 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	±9.6%
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10462	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	± 9.6 %
10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10468	AAF	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	AAF	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	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAF	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	AAF	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 Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	±9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	±9.6 %
10483	AAC	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	AAC	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	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	± 9.6 %
10486	AAF	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	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	± 9.6 %
10488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	± 9.6 %
10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
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 %

10100		LITE TOD (OO EDMA FOW DD 45 MIL 40 OAM III	LITE TOD	0.44	± 9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	
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	AAB	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	AAB	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	AAB	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	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10501	AAC	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	AAC	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	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	± 9.6 %
10504	AAF	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	AAF	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	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10507	AAF	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	AAF	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 %
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 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.45	± 9.6 %

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	
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	***		± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.45	±9.6 %
10555	AAC	LIFEE 902.1 Tac WIFT (100MIF, MCSU, 99pc duty cycle)	WLAN	8.48	± 9.6 %
		IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556 10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
	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 %
Ì		cycle)	172 (1)	0.20	= 0.0 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
		cycle)	1,511	0.40	20.070
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	± 9.6 %
.0000	,,,,,	cycle)	VVEAN	0.13	19.0 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	0.00	1000
10001	777	cycle)	WLAN	8.00	±9.6%
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	341 431	0.07	1000
10306	~~~	cycle)	WLAN	8.37	± 9.6 %
10569	AAA		10/1 001		
10369	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
10570	ΛΛΛ	cycle)			2 2 2 4
105/0	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
10==1		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)	''	50	- 5.5 /
10578	1	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN	8.49	± 9.6 %
1 10076	AAA	LIGGE OVA. HU VVIPLA.4 GITZ EDOGO-UPLJIVI HA MIDAS MODE AGAV		1 0.70	~ 5.5 /6
10076	AAA	cycle)	***		
	ļ	cycle)		8 36	+96%
10578	AAA	cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN	8.36	±9.6 %
10579	AAA	cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN		
	ļ	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		8.36 8.76	± 9.6 %
10579 10580	AAA	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)	WLAN	8.76	± 9.6 %
10579	AAA	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		
10579 10580 10581	AAA AAA	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	8.76 8.35	± 9.6 %
10579 10580	AAA	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, 54 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10579 10580 10581 10582	AAA AAA AAA	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, 54 Mbps, 90pc duty cycle)	WLAN WLAN WLAN	8.76 8.35 8.67	± 9.6 % ± 9.6 % ± 9.6 %
10579 10580 10581 10582 10583	AAA AAA AAA AAA	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, 54 Mbps, 90pc duty cycle)  IEEE 802.11g WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	8.76 8.35 8.67 8.59	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10579 10580 10581 10582 10583 10584	AAA AAA AAA AAA AAB AAB	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, 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	8.76 8.35 8.67	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10579 10580 10581 10582 10583 10584 10585	AAA AAA AAA AAB AAB	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, 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)  IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	8.76 8.35 8.67 8.59	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10579 10580 10581 10582 10583 10584	AAA AAA AAA AAA AAB AAB	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, 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	8.76 8.35 8.67 8.59 8.60	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %

				0.70	
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 %
		IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10607 10608	AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.77	± 9.6 %
***************************************		IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10609	AAB_	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10610	AAB		WLAN	8.70	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)			
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%
10634	AAB	IEEE 802.11ac WiF1 (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10635	AAC	IEEE 802.11ac Wif (80MHz, MCS), sope duty cycle)	WLAN	8.83	± 9.6 %
	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10637		IEEE 802.11ac WiFi (160MHz, MCS1, 30pc daty cycle)	WLAN	8.86	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10639	AAC		WLAN	8.98	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	9.06	± 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	8.89	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)			
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 %
	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10646		The man to a court of the court of the configuration of the configuration of the configuration of the court o		11.96	± 9.6 %
10646 10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD		
10646		CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10646 10647	AAF	CDMA2000 (1x Advanced) LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	CDMA2000 LTE-TDD	3.45 6.91	± 9.6 % ± 9.6 %
10646 10647 10648	AAF AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %

10658	10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LITE TOO	7.04	T
10669				LTE-TDD	7.21	± 9.6 %
10660					···	
10661		·				
10662					<del></del>	
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, MCS2, 90pc duty cycle)   WLAN   8.74   ±9.6     10675   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.74   ±9.6     10676   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.77   ±9.6     10677   AAA   IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)   WLAN   8.77   ±9.6     10678   AAA   IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)   WLAN   8.73   ±9.6     10679   AAA   IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)   WLAN   8.78   ±9.6     10679   AAA   IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)   WLAN   8.88   ±9.6     10680   AAA   IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)   WLAN   8.89   ±9.6     10681   AAA   IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)   WLAN   8.80   ±9.6     10682   AAA   IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)   WLAN   8.62   ±9.6     10683   AAA   IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)   WLAN   8.83   ±9.6     10684   AAA   IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)   WLAN   8.26   ±9.6     10685   AAA   IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)   WLAN   8.26   ±9.6     10686   AAA   IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)   WLAN   8.26   ±9.6     10686   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.29   ±9.6     10686   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.29   ±9.6     10686   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.29   ±9.6     10687   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.29   ±9.6     10688   AAA   IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)   WLAN   8.29   ±9.6     10689   AAA   IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)   WLAN   8.29   ±9.6     10689   AAA   IEEE 802.11ax (20MHz, MCS6, 90pc	10662					± 9.6 %
10671	10670	AAA	Bluetooth Low Energy			± 9.6 %
10672		AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)			± 9.6 %
10673		AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)			± 9.6 %
10675			IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN		± 9.6 %
10676			IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6%
10677			IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)			±9.6%
10678		***************************************	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)			± 9.6 %
10679			IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)			±9.6%
10680				·· · · · · · · · · · · · · · · · · · ·		± 9.6 %
10681		****			+	± 9.6 %
10682						± 9.6 %
10683						
10684					<del>)</del>	
10685		***************************************	IEEE 802.11ax (20MHz, MCS1, 99nc duty cycle)		· · · · · · · · · · · · · · · · · · ·	± 9.6 %
10686			IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)		<del>-</del>	± 9.6 %
10687			IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)			± 9.6 %
10688	10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)		···	± 9.6 %
10689	10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)			±9.6%
10691   AAA   IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	10689	AAA			8.55	±9.6%
10692	***************************************	<del></del>		WLAN	8.29	± 9.6 %
10693		·	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)		8.25	± 9.6 %
10694         AAA         IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)         WLAN         8.57         ± 9.6           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           10700         AAA         IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)         WLAN         8.82         ± 9.6           10701         AAA         IEEE 802.11ax (40MHz, MCS5, 90pc duty cycle)         WLAN         8.73         ± 9.6           10702         AAA         IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)         WLAN         8.76         ± 9.6           10703         AAA         IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)         WLAN         8.82         ± 9.6           10704         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)         WLAN         8.66         ± 9.6           10704         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	<u>}</u>	*****	IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)			± 9.6 %
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           10700         AAA         IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)         WLAN         8.73         ± 9.6           10701         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           10701         AAA         IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)         WLAN         8.70         ± 9.6           10702         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)         WLAN         8.82         ± 9.6           10703         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)         WLAN         8.66         ± 9.6           10704         AAA         IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)         <			IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)			± 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         8.66         ± 9.6           10707         AAA         IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)		·				± 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         8.62         ± 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         8.70         ± 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         8.56         ± 9.6           10704         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)         WLAN         8.69         ± 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)				····		± 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         8.82         ± 9.6           10703         AAA         IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)         WLAN         8.56         ± 9.6           10704         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)         WLAN         8.69         ± 9.6           10705         AAA         IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)         WLAN         8.69         ± 9.6           10706         AAA         IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)         WLAN         8.32         ± 9.6           10707         AAA         IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)         WLAN         8.55         ± 9.6           10709         AAA         IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)         <					···	± 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         8.62         ± 9.6           10704         AAA         IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)         WLAN         8.69         ± 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         8.32         ± 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         8.33         ± 9.6           10710         AAA         IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	***************************************				+	
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         8.66         ± 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         8.32         ± 9.6           10707         AAA         IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)         WLAN         8.55         ± 9.6           10708         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         8.39         ± 9.6           10712         AAA         IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)						
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           10710         AAA         IEEE 802.11ax (40MHz, MCS2, 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)		-				
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       8.32       ± 9.6         10707       AAA       IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)       WLAN       8.32       ± 9.6         10708       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						
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         8.39         ± 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)						± 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)		AAA				± 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       8.29       ± 9.6         10710       AAA       IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)       WLAN       8.39       ± 9.6         10711       AAA       IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)       WLAN       8.67       ± 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	10704	AAA				± 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       8.29       ± 9.6         10710       AAA       IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)       WLAN       8.39       ± 9.6         10711       AAA       IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)       WLAN       8.67       ± 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			IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)			±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       8.33       ± 9.6		AAA		WLAN	8.66	± 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					8.32	± 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						± 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			IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)			± 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						± 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						± 9.6 %
10714 AAA IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle) WLAN 8.26 ± 9.6			IEEE OUZ.TRAX (40MHz, MOSS, 99PC duty cycle)			± 9.6 %
						± 9.6 %
A CHAPAL A DODE A LICED DAY LIMITED DAY 120 MARKATANA PARAMA A TANDANA A TANDANA A TANDANA A TANDANA A TANDANA	10715	AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.45	± 9.6 % ± 9.6 %
						± 9.6 %
						± 9.6 %
			IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)			± 9.6 %
		1			***************************************	± 9.6 %
			IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)			± 9.6 %
					***************************************	± 9.6 %
10722 AAA IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) WLAN 8.55 ± 9.6			IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)			±9.6%
10723 AAA IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle) WLAN 8.70 ± 9.6					8.70	± 9.6 %
						±9.6%
					1	± 9.6 %
					<b>•</b>	± 9.6 %
10727 AAA IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle) WLAN 8.66 ± 9.6	10/2/	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	± 9.6 %

40700		LEEE 000 44 av (00MHz, MCCO, 00ma duty avala)	WLAN	8,65	± 9.6 %
10728 10729	AAA AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle) IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS1, 30pc duty cycle)	WLAN	8.42	± 9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10732	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, MCS4, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8,42	± 9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10739	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 %
10741	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.94	± 9.6 %
		IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	± 9.6 %
10744	AAA		WLAN	8.93	± 9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.04	± 9.6 %
10747	AAA_	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN		± 9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)		8.79 8.82	± 9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN		± 9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	
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 %
10767	AAA	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	± 9.6 %
10768	AAA	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10760	AAA	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1	8.01	± 9.6 %
10769	AAA	ואות (טר-טרטוא, דותם, ואוווג, ערטת, וא תוצו	TDD	3.51	_ 5.5 /3
40770	AAA	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1	8.02	± 9.6 %
10770	AAA	OG INIX (GE*GEDIVI, 1 KD, 20 IVITIZ, QEOK, 13 KFIZ)	TDD	0.02	- 0.0 /0
10771	AAA	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1	8.02	± 9.6 %
		FO MP (OP OFFINA A PP OF ME OFFICE AS IN IN	TDD FC NP FP1	0.00	± 9.6 %
10772	AAA	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1	8.23	I 3.0 %
1		FOUND (OD OFFILM A DD AOAR) COOK AFTALE)	TDD FC ND ED4	8.03	± 9.6 %
10773	AAA	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1	0.03	1 2.0 70
45==-	+	FO NO COR OFFINA A PROFESANTE OPON A FILLEN	TDD 5G NR FR1	8.02	± 9.6 %
10774	AAA	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	1 '	0.02	I 3.0 %
		FOATD (OD OFFINA FOW DD 40 MILL ODOK 45 MILL)	TDD 5C ND ED1	0.30	± 9.6 %
10776	AAA	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1	8.30	± 9.0 76
15===		FO ND COD OTOM FOR DD CO ME. CDC// 45 LLA	TDD 6C ND ED1	8.34	± 9.6 %
10778	AAA	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1	0.34	I I 9.0 %
	+	TO VE OF OFFILE FOR THE COLUMN OFFILE S	TDD FO ND ED1	0.20	4060/
10780	AAA	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1	8.38	± 9.6 %
		SO NO COD OFFINE FOR FOR COMMITTEE CONTRACTOR	TDD 50 ND ED1	0.00	± 9.6 %
10781	AAA	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1	8.38	I 9.0 %
		TO ME OF OFFICE COMES TO THE OFFICE OF THE OFFICE O	TDD 50 ND FB1	0.40	± 9.6 %
10782	AAA	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1	8.43	E9.0 %
	1		TDD	I	

10783	AAA	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1	8.31	± 9.6 %
10784	AAA	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	TDD 5G NR FR1	8.29	1060
10785	AAA	,	TDD		± 9.6 %
		5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1	8,40	± 9.6 %
10786	AAA	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10787	AAA	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1	8.44	± 9.6 %
10788	AAA	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1	8.39	± 9.6 %
10789	AAA	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1	8.37	± 9.6 %
10790	AAA	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1	8.39	± 9.6 %
10791	AAA	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	7.83	± 9.6 %
10792	AAA	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	7.92	± 9.6 %
10793	AAA	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	7.95	± 9.6 %
10794	AAA	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	7.82	± 9.6 %
10795	AAA	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	TDD		
			5G NR FR1 TDD	7.84	± 9.6 %
10796	AAA	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10797	AAA	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10798	AAA	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10799	AAA	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10801	AAA	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10802	AAA	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1	7.87	± 9.6 %
10803	AAA	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	7.93	± 9.6 %
10805	AAA	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.34	± 9.6 %
10806	AAA	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.37	± 9.6 %
10809	AAA	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.34	± 9.6 %
10810	AAA	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.34	± 9.6 %
10812	AAA		TDD		
		5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6%
10817	AAA	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10818	AAA	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10819	AAA	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	± 9.6 %
10820	AAA	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10821	AAA	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1	8.41	± 9.6 %
10822	AAA	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.41	± 9.6 %
10823	AAA	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.36	± 9.6 %
10824	AAA	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	TDD 5G NR FR1	8.39	±9.6%
		, , , , , , , , , , , , , , , , , , , ,	TDD		

10825	AAA	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10827	AAA	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1	8.42	± 9.6 %
10828	AAA	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10829	AAA	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10830	AAA	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	± 9.6 %
10831	AAA	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	± 9.6 %
10832	AAA	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	± 9.6 %
10833	AAA	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10834	AAA	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	±9.6 %
10835	AAA	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10836	AAA	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	± 9.6 %
10837	AAA	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	± 9.6 %
10839	AAA	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10840	AAA	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	± 9.6 %
10841	AAA	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	±9.6 %
10843	AAA	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	± 9.6 %
10844	AAA	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10846	AAA	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10854	AAA	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10855	AAA	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10856	AAA	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	±9.6 %
10857	AAA	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10858	AAA	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10859	AAA	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10860	AAA	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10861	AAA	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10863	AAA	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10864	AAA	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10865	AAA	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10866	AAA	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10868	AAA	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5,89	± 9.6 %
10869	AAA	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10870	AAA	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	± 9.6 %

10871	AAA	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2	5.75	± 9.6 %
10872	AAA	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	± 9.6 %
10873	AAA	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10874	AAA	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2	6.65	± 9.6 %
10875	AAA	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10876	AAA	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2	8.39	± 9.6 %
10877	AAA	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	± 9.6 %
10878	AAA	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2	8.41	± 9.6 %
10879	AAA	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2	8.12	± 9.6 %
10880	AAA	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	± 9.6 %
10881	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2	5.75	± 9.6 %
10882	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 %
10883	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2	6.57	± 9.6 %
10884	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2	6.53	± 9.6 %
10885	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2	6.61	± 9.6 %
10886	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2	6.65	± 9.6 %
10887	AAA	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2	7.78	± 9.6 %
10888	AAA	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2	8.35	± 9.6 %
10889	AAA	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2	8.02	± 9.6 %
10890	AAA	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2	8.40	± 9.6 %
10891	AAA	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2	8.13	± 9.6 %
10892	AAA	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2	8.41	± 9.6 %

<sup>&</sup>lt;sup>E</sup> 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
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Accreditation No.: SCS 0108

Client

**PC Test** 

Certificate No: EX3-7406\_May19

# **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

BN 23-2010

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

Calibrated by:

Name

Function

Michael Weber

Laboratory Technician

Signature

Approved by:

Katja Pokovic

Technical Manager

Issued: May 16, 2019

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

### Calibration Laboratory of

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Glossary:

TSL NORMx,v,z tissue simulating liquid sensitivity in free space

ConvF DCP sensitivity in TSL / NORMx,y,z diode compression point

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

Polarization φ

φ rotation around probe axis

Polarization 8

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

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

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
- 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).

# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7406

**Basic Calibration Parameters** 

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) <sup>2</sup> ) <sup>A</sup>	0.46	0.43	0.45	± 10.1 %
DCP (mV) <sup>B</sup>	102.8	102.2	100.4	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	Х	0.00	0.00	1.00	0.00	182.0	± 2.7 %	± 4.7 %
		Y	0.00	0.00	1.00	1	172.4	1 /	/0
****		Z	0.00	0.00	1.00		174.6	1	
10352-	Pulse Waveform (200Hz, 10%)	Х	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 /-	- 313 /6
		Z	15.00	84.32	17.62		60.0	1	
10353-	Pulse Waveform (200Hz, 20%)	Х	15.00	85.05	16.36	6.99	80.0	± 1.9 %	± 9.6 %
AAA		Υ	15.00	85.57	16.70		80.0		= 0.0 /0
		Z	15.00	85.96	16.90		80.0	1	
10354-	Pulse Waveform (200Hz, 40%)	Х	15.00	83.48	13.87	3.98	95.0	± 1.3 %	± 9.6 %
AAA		Y	15.00	88.48	16.53		95.0		1 /6
		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		Υ	15.00	95.23	18.20		120.0		
		Z	0.39	62.12	5.82		120.0		
10387-	QPSK Waveform, 1 MHz	X	0.46	60.00	5.77	0.00	150.0	± 3.7 %	± 9.6 %
AAA		Υ	14.25	443.18	61.66		150.0		
		Z	0.48	60.00	6.06		150.0		
10388-	QPSK Waveform, 10 MHz	Х	2.03	67.70	15.44	0.00	150.0	± 1.2 %	± 9.6 %
AAA	1	Υ	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		Υ	3.39	68.23	16.67		150.0		
45.00		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		Y	4.47	66.54	16.20		150.0		
	details on LUD parameters and Am	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 field value.

# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7406

## **Sensor Model Parameters**

	C1 fF	C2 fF	α V <sup>-1</sup>	T1 ms.V <sup>-2</sup>	T2 ms.V <sup>-1</sup>	T3 ms	T4 V <sup>-2</sup>	T5 V <sup>-1</sup>	Т6
X	34.8	265.14	36.82	6.17	0.37	5.06	0.00	0.44	1.01
Y	19.8	147.90	35.69	7.11	0.37	5.03	0.00	0.19	1.00
Z	35.4	271.85	37.42	5.60	0.38	5.06	0.15	0.41	1.01

#### **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

# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7406

## Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (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 %

<sup>&</sup>lt;sup>c</sup> 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 ( $\epsilon$  and  $\sigma$ ) 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 ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of

the ConvF uncertainty for indicated target tissue parameters.

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

# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7406

## Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) <sup>c</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) F	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (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 %

<sup>&</sup>lt;sup>c</sup> 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

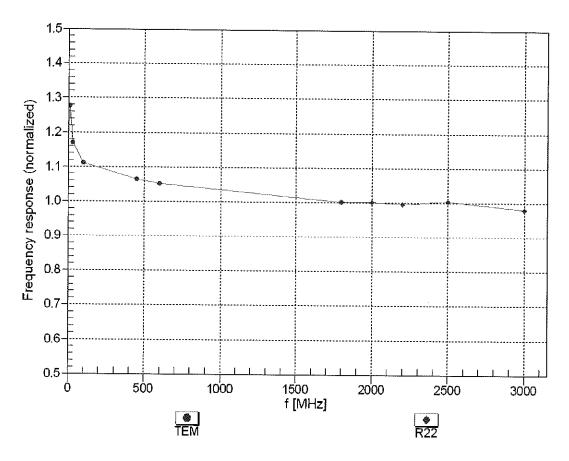
the ConvF uncertainty for indicated target tissue parameters.

A requestion of the convF uncertainty for indicated target tissue parameters.

A lipha/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)

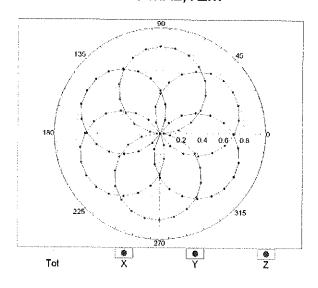


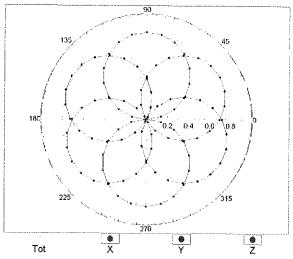
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

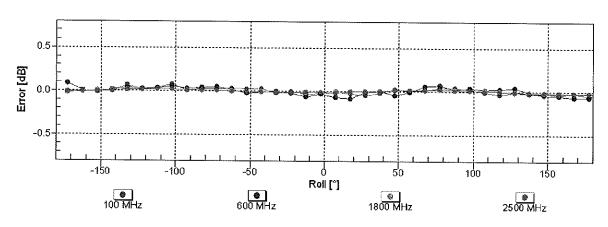
# Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

f=600 MHz,TEM

f=1800 MHz,R22

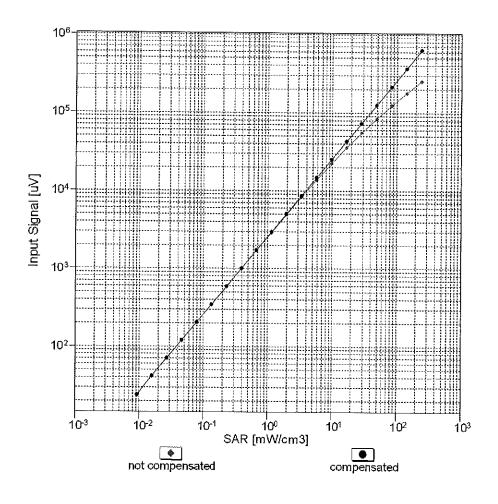


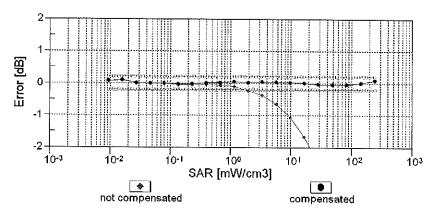




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

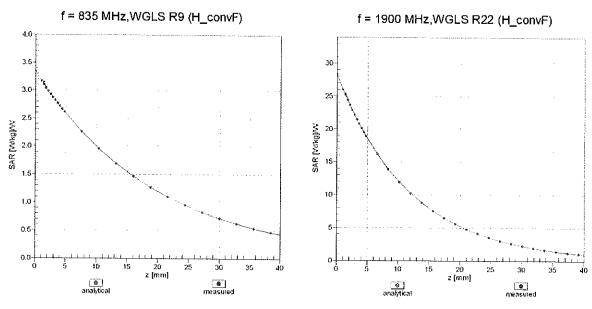
# Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)



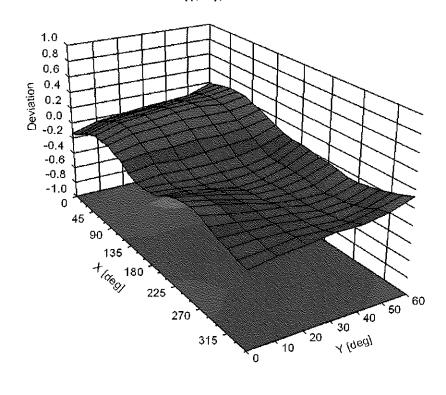


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

# **Conversion Factor Assessment**



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



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## **Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>t</sup> (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 Bluetooth	1.87	± 9.6 % ± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16 7.74	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	4.53	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3) IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10035 10036	CAA CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	4.77	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10038	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)	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 WLAN	9.62 9.94	± 9.6 % ± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps) IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10074 10075	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 WiF1 2.4 GHz (DSSS/OFDM, 46 Mibps)	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	± 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	
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 % ± 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	
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)			± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	5.75	± 9.6 %
10156	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, 16-QAM)	LTE-FDD	5.79	± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.49	±9.6%
10159	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	6.56	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	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, 15 MHz, 64-QAM)  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, QPSK)  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, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHZ, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10170	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 %
10171	AAE	LTE-PDD (SC-PDMA, 1 RB, 20 MHZ, 16-QAM)	LTE-FDD	6.52	±9.6%
10172	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10173	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 %
10175	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
		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	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10178	CAG 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 %
10182		LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10183	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
		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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40000	040	IEEE 800 44 n (UT Mixed 42 2 Mbno 46 OAM)	WLAN	8.13	± 9.6 %
10220 10221	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10221	CAC	IEEE 802.111 (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.06	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 30 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-TOD	9.21	±9.6%
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD LTE-TDD	9.82 9.86	± 9.6 % ± 9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)  LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10243	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QFSK)  LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10244 10245	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, QPSK)	LTE-TDD	9.30	±9.6 %
10246	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10247	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, 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		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 10.07	± 9.6 %
10266 10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)  LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSR)  LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 10-QAM)	LTE-TDD	10.00	± 9.6 %
10269	CAF	LTE-TDD (SC-PDMA, 100 % RB, 15 MHz, 04-QAM)	LTE-TOD	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	WiMAX	12.57	± 9.6 %
10303	AAA	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 %
10303	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15	WiMAX	15.24	± 9.6 %
10306	AAA	symbols) IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18		ļ	
10300	1 444	symbols)	WiMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	1202123		
10007	1,000	symbols)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	10/01/AN	11.10	
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18	WiMAX	14.46	± 9.6 %
	' ' ' '	symbols)	VVIIVIAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18	WIMAX	14.57	± 9.6 %
Ĺ		symbols)	VVIIVIAX	14.57	I 9.0 %
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 10403	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 %
10400	AAB AAF	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 %
10414	AAA	Subframe=2,3,4,7,8,9, Subframe Conf=4) WLAN CCDF, 64-QAM, 40MHz			
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	Generic	8.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 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 WLAN	8.23	±9.6%
1		Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.19	± 9.6 %
		Short preambule)	4 V L J. 31 4	0.15	± 9.0 %
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	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 %
10447	A A D	Subframe=2,3,4,7,8,9)			
10447 10448	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD AAC	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 %
10700	77C	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 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.82	±9.6%
10462	AAA	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	± 9.6 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 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	± 9.6 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
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 Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32 8.57	± 9.6 % ± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	± 9.6 %
10480 10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL 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 %
10481	AAA	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, 0L  Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL	LTE-TDD	7.71	± 9.6 %
10483	AAB	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.39	± 9.6 %
10483	AAB	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL	LTE-TOD	8.47	± 9.6 %
10485	AAE	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL	LTE-TDD	7.59	± 9.6 %
10486	AAE	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.38	± 9.6 %
10487	AAE	Subframe=2,3,4,7,8,9)  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 %
10491	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		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		
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)		8.39	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10527	AAB	IFFE 802 11a/h WiFi 5 CHz (OFDM 20 MF)	WLAN	7.97	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10523		IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	± 9.6 %
	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	
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	WLAN		± 9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 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 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	±9.6%
10544	AAB	IEEE 802.11ac WiF (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	± 9.6 %
		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 %
10548	AAB		WLAN	8.38	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)			
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)			
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
		cycle)			
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	± 9.6 %
		cycle)			
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
		cycle)			
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	± 9.6 %
		cycle)			
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
	<u> </u>	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 %
	1	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 %
	1.7.	cycle)			
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN	8.67	± 9.6 %
1,0002	,,,,,	cycle)	1 =		
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 %
		IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mpps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10586	AAB	HEEE OUZ. Hatti VVICTO GEIZ (OFDIN, 10 MIDPS, 30PC GUTY CYCLS)	WLAN		± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	VALAIN	8.36	1 I J.O 70

40500	1 4 4 5				
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	
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN		±9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)		8.64	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10614	AAB	IEEE 202 11ac WIFI (20MI) MOSO, 90pc duty cycle)	WLAN	8.94	±9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	±9.6 %
10616	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10618		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 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
	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	9.03	
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		± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	11.96 3.45	± 9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD		± 9.6 %
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
	I	(	L L L L L D D	6.96	± 9.6 %

10055		LITE TOD (CEDMA COMILLE THICK OFFICE (101)	1 ( 75 755	7.04	
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21 10.00	± 9.6 %
10658 10659	AAA	Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%)	Test Test	6.99	± 9.6 % ± 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 10688	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN WLAN	8.45 8.29	± 9.6 % ± 9.6 %
		IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN	8.29	
10689 10690	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)	WLAN	8.29	± 9.6 % ± 9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle) 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	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 10710	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)   IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN WLAN	8.33 8.29	±9.6 % ±9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.67	± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10713	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 %
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 %
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	± 9.6 %

EX3DV4-- SN:7406

10728	40700	1 ^ ^ ^	JEEE COO 44 (CONTIL MOOD CO. 14			
10730	10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	± 9.6 %
10731   AAA   IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)			IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)			
10732			IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)		<del>-)</del>	
10733			IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)		8.42	
10734					8.46	± 9.6 %
10735				WLAN	8.40	± 9.6 %
10736				WLAN	8.25	± 9.6 %
10737				WLAN	8.33	± 9.6 %
10738		<del>1</del>	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10739			IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10739				WLAN	8.42	± 9.6 %
10740				WLAN		
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   8.93   ± 9.6 %   10747   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   9.11   ± 9.6 %   10748   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   9.04   ± 9.6 %   10749   AAA   IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)   WLAN   8.93   ± 9.6 %   10750   AAA   IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)   WLAN   8.90   ± 9.6 %   10751   AAA   IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)   WLAN   8.79   ± 9.6 %   10752   AAA   IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)   WLAN   8.82   ± 9.6 %   10753   AAA   IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)   WLAN   8.81   ± 9.6 %   10753   AAA   IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)   WLAN   8.81   ± 9.6 %   10755   AAA   IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)   WLAN   8.81   ± 9.6 %   10755   AAA   IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)   WLAN   8.94   ± 9.6 %   10756   AAA   IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)   WLAN   8.94   ± 9.6 %   10757   AAA   IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)   WLAN   8.77   ± 9.6 %   10758   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   8.77   ± 9.6 %   10758   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   8.77   ± 9.6 %   10760   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   8.58   ± 9.6 %   10761   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   8.58   ± 9.6 %   10760   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN   8.58   ± 9.6 %   10760   AAA   IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)   WLAN		-		WLAN	8.48	
10742				WLAN	8.40	
10743				WLAN	8.43	
10744			IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	
10745			IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	
10746		-	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	
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, MCS3, 99pc duty cycle)         WLAN         8.77         ± 9.6 %           10758         AAA         IEEE 802.11ax (160MHz, MCS4			IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	
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         8.69         ± 9.6 %           10758         AAA         IEEE 802.11ax (160MHz, MCS4			IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	
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       8.58       ± 9.6 %         10760       AAA       IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)       WLAN       8.58       ± 9.6 %				WLAN	8.93	
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, MCS6			IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN		
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       8.58       ± 9.6 %         10761       AAA       IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)       WLAN       8.54       ± 9.6 %			IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	
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         8.58         ± 9.6 %           10761         AAA         IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)         WLAN         8.58         ± 9.6 %           10762         AAA         IEEE 802.11ax (160MHz, MCS9				WLAN	8.82	
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, MCS8, 99pc duty cycle)         WLAN         8.53         ± 9.6 %           10763         AAA         IEEE 802.11ax (160MHz, MCS9			IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)			
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, MCS9, 99pc duty cycle)       WLAN       8.53       ± 9.6 %         10765       AAA       IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)       WLAN       8.54       ± 9.6 %		AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN		
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, MCS10, 99pc duty cycle)       WLAN       8.54       ± 9.6 %         10765       AAA       IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)       WLAN       8.54       ± 9.6 %			IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)			
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, MCS7, 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 %		AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)		8,64	
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, MCS9, 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 %			IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN		
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 %		L	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	<del></del>	± 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 %			IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN		
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 %		AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN		
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 %		AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)			
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 %		AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	***************************************		
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 %			IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)			
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 %		AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)			
10765 AAA IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle) WLAN 8.54 ± 9.6 %		AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)			
40700 444 400444 400444			IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)			
	10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)			

May 16, 2019

<sup>&</sup>lt;sup>E</sup> 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





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

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client

**PC Test** 

Certificate No: EX3-7410\_Jul19

## **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

BNV

07/3/12010

Calibration date:

July 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

Calibrated by:

Deton Kastrati

Laboratory Technician

Approved by:

Katja Pokovic

Technical Manager

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
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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

Glossary:

TSL NORMx,y,z tissue simulating liquid sensitivity in free space

ConvF DCP sensitivity in TSL / NORMx,y,z diode compression point

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

Polarization φ

φ rotation around probe axis

Polarization 9

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

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

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 θ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the 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).

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## DASY/EASY - Parameters of Probe: EX3DV4 - SN:7410

#### **Basic Calibration Parameters**

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

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	Х	0.00	0.00	1.00	0.00	143.3	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		136.3	/•	
		Z	0.00	0.00	1.00		146.3		
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		
		Z	15.00	86.58	19,43		60.0		
10353-	Pulse Waveform (200Hz, 20%)	Х	15.00	85.70	17.13	6.99	80.0	± 2.7 %	± 9.6 %
AAA		Y	15.00	94.26	21.82	1	80.0	·	
		Z	15.00	87.46	18.36	1	80.0		
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		
		Z	15.00	86.91	16.30	1	95.0		
10355-	Pulse Waveform (200Hz, 60%)	/aveform (200Hz, 60%) X 0.58 63.48 6.70 2.22 120.0 ± 1.4 %	± 1.4 %	± 9.6 %					
AAA	1	Y	15.00	128.91	35.05	1	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		Υ	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		Υ	3.73	68.43	16.68		150.0	150.0	
		Z	3.45	66.65	15.48		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	Х	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.

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## DASY/EASY - Parameters of Probe: EX3DV4 - SN:7410

#### **Sensor Model Parameters**

	C1 fF	C2 fF	a V <sup>-1</sup>	T1 ms.V <sup>-2</sup>	T2 ms.V <sup>-1</sup>	T3 ms	T4 V-2	T5 V <sup>-1</sup>	T6
X	44.0	341.99	38.28	7.82	0.67	5.04	0.00	0.55	1.01
Υ	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

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## DASY/EASY - Parameters of Probe: EX3DV4 - SN:7410

### Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) F	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (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 %

<sup>&</sup>lt;sup>C</sup> 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.

At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) 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 ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:7410

## Calibration Parameter Determined in Body Tissue Simulating Media

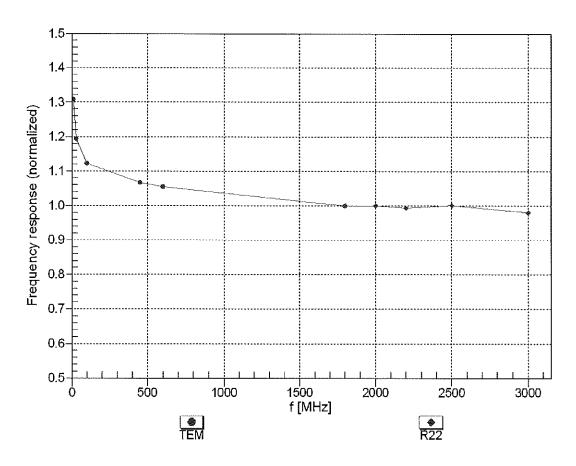
f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) F	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>6</sup> (mm)	Unc (k=2)
750	55.5	0.96	10.01	10.01	10.01	0.48	0.84	± 12.0 %
835	55.2	0.97	9.79	9.79	9.79	0.48	0.80	± 12.0 %
1750	53.4	1.49	8.08	8.08	8.08	0.38	0.86	± 12.0 %
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 %

<sup>&</sup>lt;sup>C</sup> 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 ( $\epsilon$  and  $\sigma$ ) 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 ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the Convertainty for indicated target tissue parameters.

Galpha/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)

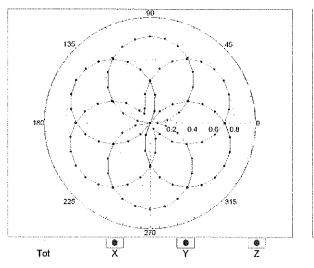


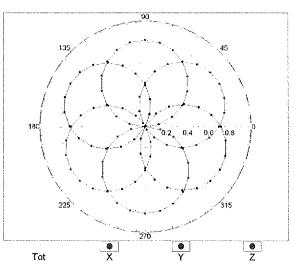
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

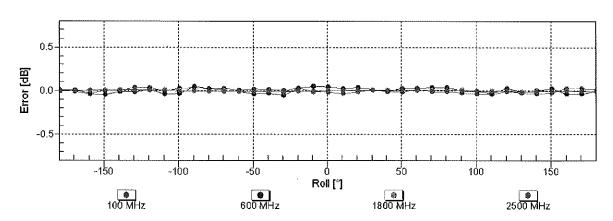
# Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

f=600 MHz,TEM

f=1800 MHz,R22

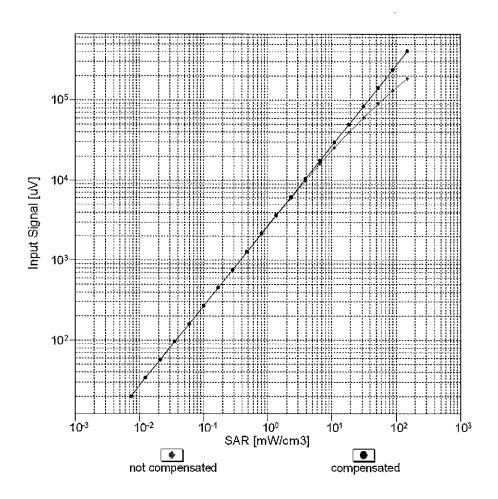


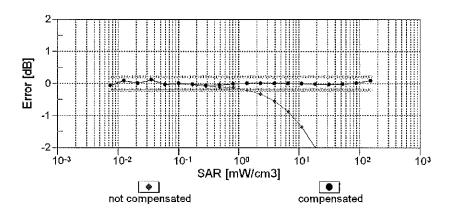




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

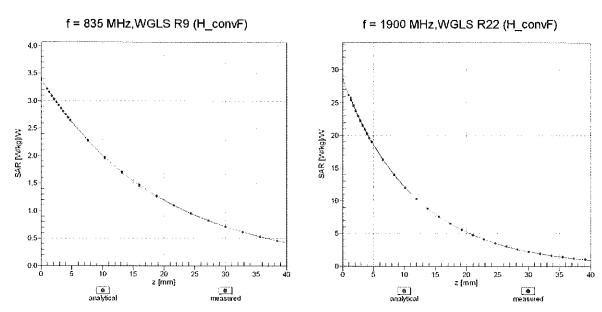
## Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)



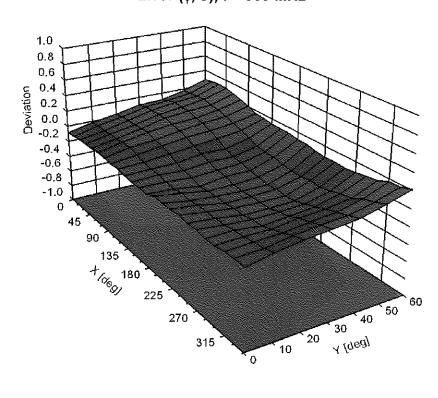


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

# **Conversion Factor Assessment**



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



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## **Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>t</sup> (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 %
10108	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	
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)			± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 61 Mbps, 64-QAM)	WLAN	8.46	± 9.6 %
10117	CAC	IEEE 002.1111 (FT Greenileid, 135 Mipps, 64-QAM)	WLAN	8.15	± 9.6 %
		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	
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)	LIC-FDD		±9.6%
10149	CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6 %
10149	CAE	LITE EDD (SO EDMA 500/ BD 00 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
		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		
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, 15 WITZ, 04-QAW)	LTE-FDD	6.58	± 9.6 %
		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 (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)	<del>  -:-:</del>		
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	6.52	±9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	5.73	± 9.6 %
10179	CAG		LTE-FDD	6.52	± 9.6 %
10179		LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
	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	~~~~	
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)		6.50	± 9.6 %
10194	CAC	IEEE 802.11n (HT Greenfield, 8.9 Mbps, 16-QAM)	WLAN	8.09	± 9.6 %
10194		IEEE 902.1111 (ITT Greenfield, 59 Miops, To-QAM)	WLAN	8.12	± 9.6 %
	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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10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN WLAN	8.13 8.27	± 9.6 % ± 9.6 %
10221		IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.06	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.48	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.08	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WCDMA	5.97	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)		9.49	
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD		± 9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD LTE-TDD	10.26 9.22	± 9.6 % ± 9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.48	± 9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10230	CAC		LTE-TDD	9.19	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.48	± 9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	10.25	± 9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	9.21	± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.48	±9.6 %
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)			***************************************
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-TOD	10.25	±9.6%
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD LTE-TDD	9.21 9.82	± 9.6 % ± 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	10.06	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)		10.06	± 9.6 %
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TOD	9.30	
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TOD	9.30	±9.6%
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	10.09	± 9.6 % ± 9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD LTE-TDD	9.29	±9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TOD	9.81	± 9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	10.17	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	9.24	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.90	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	10.14	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	9.20	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)  LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10256	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-QAM)  LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10258	CAA		LTE-TDD	9.98	± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TOD	9.24	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)  LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10262			LTE-TDD	10.16	± 9.6 %
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)  LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QFSR)  LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	±9.6 %
10265	CAF CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 10-QAM)	LTE-TDD	10.07	± 9.6 %
10266 10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.13	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 04-QAM)	LTE-TDD	9.58	± 9.6 %
10270	CAP	UMTS-FDD (SC-FDMA, 100% RB, 10 MHz, QF3R)	WCDMA	4.87	±9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	±9.6 %
10273	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10277	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10278	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 %
10290	AAB	CDMA2000, RC1, SO33, Full Rate	CDMA2000	3.46	± 9.6 %
10291	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10292	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 %
10293	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10297	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 %
10233	1,000	W. F.   DD   OO   DITH   OO / O   D   D   TH   E.   TO OO WIT			

10300	A A 12	LTE EDD (CO EDMA FOX) DD CAME OF CAME	1		1
	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 %
10303	ΛΛΛ	symbols)		ļ	
	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 %
10306	ΛΛΛ	symbols)			
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WiMAX	14.67	± 9.6 %
10307	AAA	symbols)			
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WiMAX	14.49	± 9.6 %
40200	<del>                                     </del>	symbols)			
10308 10309	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%
10310	ΑΛΛ	symbols)			
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18	WiMAX	14.57	± 9.6 %
10311	AAD	symbols)	<u> </u>		
		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	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9, Subframe Conf=4)	272 100	1.02	± 0.0 70
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	
		Long preambule)	VYLAIN	0.14	± 9.6 %
40					
⊦ 10419 l	l aaa		MAI ANI	0.40	+ O G 9/
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle.	WLAN	8.19	± 9.6 %
		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)			
10422	AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10422 10423	AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN WLAN	8.32 8.47	± 9.6 % ± 9.6 %
10422 10423 10424	AAB AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN WLAN WLAN	8.32 8.47 8.40	±9.6 % ±9.6 % ±9.6 %
10422 10423 10424 10425	AAB AAB AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN WLAN WLAN WLAN	8.32 8.47 8.40 8.41	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426	AAB AAB AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)  IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN WLAN WLAN WLAN WLAN	8.32 8.47 8.40 8.41 8.45	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427	AAB AAB AAB AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN WLAN WLAN WLAN WLAN WLAN	8.32 8.47 8.40 8.41 8.45 8.41	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430	AAB AAB AAB AAB AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430 10431	AAB AAB AAB AAB AAB AAB AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38	± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432	AAB AAB AAB AAB AAB AAB AAD AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 700 (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34	± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433	AAB AAB AAB AAB AAB AAD AAD AAC AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 700 (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34	± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433 10434	AAB AAB AAB AAB AAB AAB AAD AAD AAC AAC AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) UTE-FDD (OFDMA, 20 MHz, E-TM 3.1) W-CDMA (BS Test Model 1, 64 DPCH)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD WCDMA	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60	± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433	AAB AAB AAB AAB AAB AAB AAB AAD AAD AAC AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) ITE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) UTE-FDD (OFDMA, 20 MHz, E-TM 3.1) UTE-FDD (OFDMA, 17 MB, 20 MHz, QPSK, UL	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAB AAB AAB AAD AAD AAC AAC AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule) IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) ITE-FDD (OFDMA, 5 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) UTE-FDD (OFDMA, 20 MHz, E-TM 3.1) UTE-FDD (OFDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAB AAB AAB AAD AAC AAC AAA AAF	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)  IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)  LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)  W-CDMA (BS Test Model 1, 64 DPCH)  LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)  LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	± 9.6 % ± 9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAB AAB AAD AAC AAC AAA AAF AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)  IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)  LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)  W-CDMA (BS Test Model 1, 64 DPCH)  LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)  LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)  LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD LTE-FDD LTE-FDD UTE-FDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82 7.56 7.53	±9.6 % ±9.6 %
10422 10423 10424 10425 10426 10427 10430 10431 10432 10433 10434 10435	AAB AAB AAB AAB AAB AAB AAD AAC AAC AAA AAF	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)  IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)  IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)  IEEE 802.11n (HT Greenfield, 90 Mbps, 64-QAM)  IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)  LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)  LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)  W-CDMA (BS Test Model 1, 64 DPCH)  LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)  LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	WLAN WLAN WLAN WLAN WLAN WLAN LTE-FDD LTE-FDD LTE-FDD LTE-FDD WCDMA LTE-TDD	8.32 8.47 8.40 8.41 8.45 8.41 8.28 8.38 8.34 8.34 8.60 7.82	± 9.6 % ± 9.6 %

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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%
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
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 %
		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 %
		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)			
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)		7.00	
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)		0.53	. 0 0 0/
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
	<u> </u>	Subframe=2,3,4,7,8,9)	LTE TOD	7.82	1069/
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
	<del>   </del>	Subframe=2,3,4,7,8,9)	LTC TOO	8.32	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL	LTE-TDD	0.32	1 9.0 %
40475	0.05	Subframe=2,3,4,7,8,9)  LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10475	AAE			0.57	3.0.0
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 %
10477	AAF	Subframe=2,3,4,7,8,9)		0.02	20.070
10478	AAF	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)		0.07	
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10473	7.77	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 %
10400	' ' ' '	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 %
10101	1,,,,,,	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 %
		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 %
	1	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)			ļ <u>.</u>
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)			
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)		<b></b>	1
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)		<del>  </del>	1000
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)	1	1	1

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 %
	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10528		LIEFE DOD 44 MEE: (OOM) LANGO 4 OO 1 LL LL			
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10529 10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN WLAN	8.36 8.43	± 9.6 % ± 9.6 %
10529 10531 10532	AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)			± 9.6 %
10529 10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	

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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 %
10562		IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
	AAC	IEEE 802.11ac WiFi (180MHz, MC39, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10564	AAA		VVLAN	0.23	1 3.0 %
40565	A A A	cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
10565	AAA	, , , , , , , , , , , , , , , , , , , ,	VV EZ-VI V	0.45	1 3.0 /6
40500	0.0.0	cycle)	WLAN	8.13	±9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	0.13	I 5.0 76
40507		cycle)	144 441	<del> </del>	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
40500		cycle)	WLAN	8.37	±9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	VVLAIN	0.37	19.0%
40500		cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
10569	AAA	, , , , , ,	VVLAIN	6.10	1 2.0 %
40570		cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
10570	AAA		WLAN	0.30	I 9.0 76
40574	1000	cycle)	WLAN	1.99	±9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)		1.99	
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN		± 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)	100 051	<del> </del>	1000
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	± 9.6 %
<u></u>		cycle)	1400 440		1000
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN	8.70	±9.6%
		cycle)	1445 531		
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)		<del></del>	10000
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN	8.76	± 9.6 %
		cycle)			
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 %
	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10585	100				
10585	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 %

40500	A A D	LEEF AGO 44 / MODILE OU VOETNA AGAIN			
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)			
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6%
10596	AAB	IEEE 902.1111 (HT Wixed, 20MHz, MOS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
		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		
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)		8.97	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10608	AAB		WLAN	8.64	± 9.6 %
		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		
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)		8.58	± 9.6 %
10620	AAB	IEEE 902.11 rac WIFT (40MHz, MCC3, 90pc duty cycle)	WLAN	8.86	±9.6%
	1——	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	
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN		± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)		8.81	± 9.6 %
10632	AAB		WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
		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		
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 30pc duty cycle)		8.89	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	± 9.6 %
10646	AAF	TE TOD (SC EDMA 4 DD E MILE ODOK 111 O 17	WLAN	9.11	± 9.6 %
		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 %

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40055		LTT TDD /OFDMA OO MILE F TM 2.4 Clinging 440/	LTE-TDD	7.21	± 9.6 %
10655 10658	AAE AAA	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%) 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 %
10670	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	± 9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 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	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	±96%
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 %
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%
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	± 9.6 %

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         8.27         ± 9.6           10736         AAA         IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)         WLAN         8.36         ± 9.6           10737         AAA         IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)         WLAN         8.42         ± 9.6           10739         AAA         IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)
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           10740         AAA         IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)         WLAN         8.29         ± 9.6           10741         AAA         IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)
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           10740         AAA         IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)         WLAN         8.29         ± 9.6           10741         AAA         IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)         WLAN         8.48         ± 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         8.49         ± 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         8.48         ± 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         8.48         ± 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
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
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
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
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
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
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

<sup>&</sup>lt;sup>E</sup> Uncertainty is determined using the max, deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

### **Calibration Laboratory of**

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





S Schweizerischer Kalibrierdienst
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Swiss Calibration Service

Accreditation No.: SCS 0108

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

Client

**PC Test** 

Certificate No: EX3-7547 Jul19

## **CALIBRATION CERTIFICATE**

Object

EX3DV4 - SN:7547

Calibration procedure(s)

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

BN1 / 07/31/2019

Calibration date:

July 15, 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)	Арг-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

Calibrated by:

Claudio Leubler

Laboratory Technician

Approved by:

Katja Pokovic

Technical Manager

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





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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

Glossary:

TSL NORMx,y,z tissue simulating liquid sensitivity in free space

ConvF DCP sensitivity in TSL / NORMx,y,z diode compression point

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

Polarization φ

φ rotation around probe axis

Polarization 8

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

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

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 θ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the 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).