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

Date: 13.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f = 2450 MHz;  $\sigma = 2.02$  S/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

#### DASY52 Configuration:

• Probe: EX3DV4 - SN7349; ConvF(8.01, 8.01, 8.01) @ 2450 MHz; Calibrated: 30.12.2017

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

Electronics: DAE4 Sn601; Calibrated: 26.10.2017

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

• DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

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

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

Reference Value = 107.0 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 25.3 W/kg

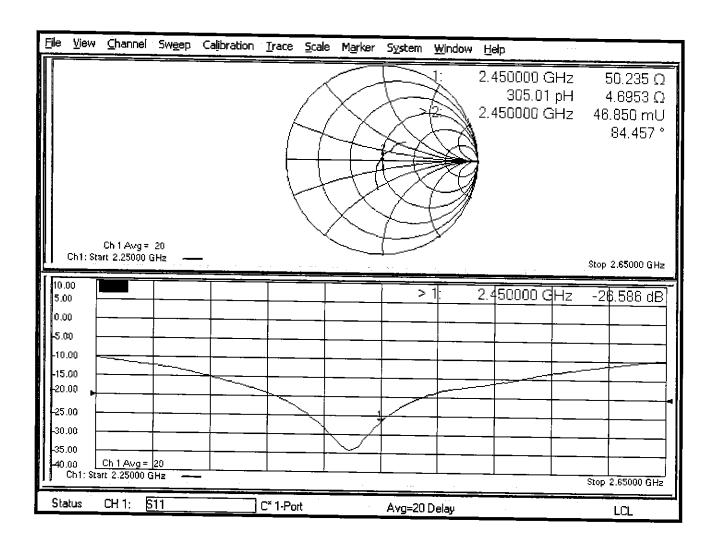
SAR(1 g) = 13 W/kg; SAR(10 g) = 6.11 W/kg

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



0 dB = 20.7 W/kg = 13.16 dBW/kg

# Impedance Measurement Plot for Body TSL



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

Date: 16.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f = 2450 MHz;  $\sigma = 1.85$  S/m;  $\epsilon_r = 40.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

### DASY52 Configuration:

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

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

Reference Value = 116.2 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 26.4 W/kg

SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.33 W/kg

Maximum value of SAR (measured) = 22.0 W/kg

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

Reference Value = 116.9 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 26.3 W/kg

SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.35 W/kg

Maximum value of SAR (measured) = 21.7 W/kg

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

Reference Value = 112.0 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 24.1 W/kg

SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.11 W/kg

Maximum value of SAR (measured) = 20.5 W/kg

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

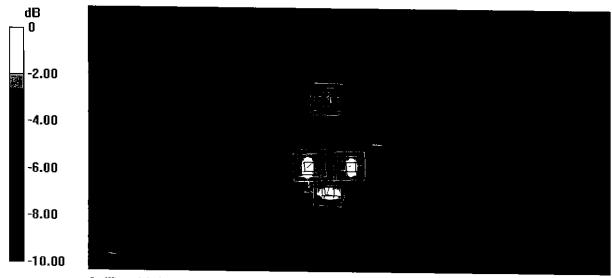
Reference Value = 91.03 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 15.8 W/kg

SAR(1 g) = 8.74 W/kg; SAR(10 g) = 4.4 W/kg

Maximum value of SAR (measured) = 13.5 W/kg

Certificate No: D2450V2-981\_Aug18



0 dB = 22.0 W/kg = 13.42 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 D2450V2 – SN: 981

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

Calibration date: 08/09/2019

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

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

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

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

## **DIPOLE CALIBRATION EXTENSION**

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

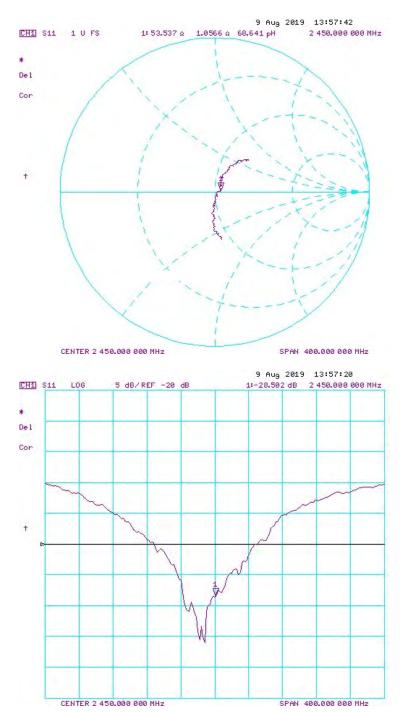
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  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
8/16/2018	8/9/2019	1.162	5.23	5.53	5.74%	2.44	2.56	4.92%	55	53.5	1.5	2.3	1.1	1.2	-25.6	-28.5	-11.30%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	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
8/16/2018	8/9/2019	1.162	5.09	4.98	-2.16%	2.42	2.28	-5.79%	50.2	47.8	2.4	4.7	1.1	3.6	-26.6	-31.8	-19.60%	PASS

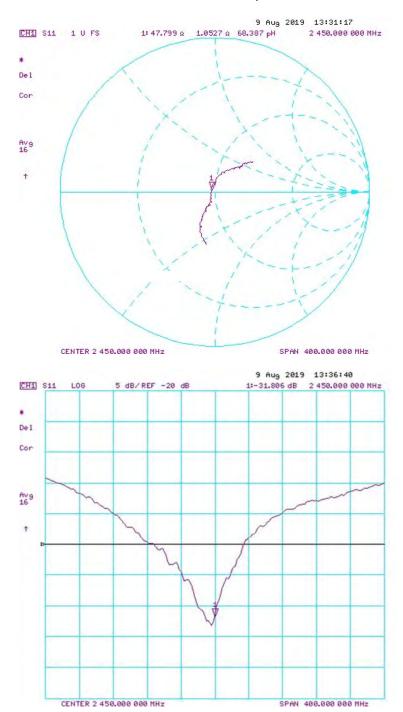
Object:	Date Issued:	Page 2 of 4	
D2450V2 – SN: 981	08/09/2019	Fage 2 01 4	

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



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

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



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

#### Calibration Laboratory of Schmid & Partner

Engineering AG







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

Accreditation No.: SCS 0108

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

PC Test Client

Certificate No: D3500V2-1059\_Jan18

Object .	-D3500V2 - SN:10	059	
Calibration procedure(s)	QA CAL-22.v2 Calibration proce	dure for dipole validation kits bet	ween 3-6 GHz
Calibration date:	January 11, 2018	3	BNV 01-26-201
This calibration certificate docum	ents the traceability to nati	ional standards, which realize the physical un	its of measurements (SI),
The measurements and the uncer	dainties with confidence p	probability are given on the following pages an	d are part of the certificate.
All calibrations have been conduc	cted in the closed laborato	ry facility: environment temperature (22 $\pm$ 3)°(	and humidity < 70%. 02 06 12 01 05 12 0
Calibration Equipment used (M&7	TE critical for calibration)		. HV
Primary Standards	10#	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
and comparing Ear	i i		1
	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Power sensor NRP-Z91	SN: 103245 SN: 5058 (20k)	04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02528)	Apr-18 Apr-18
Power sensor NRP-Z91 Reference 20 dB Atlenuator		04-Apr-17 (No. 217-02522) 07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529)	Apr-18
Power sensor NRP-Z91 Reference 20 dB Atlenuator Type-N mismatch combination	SN: 5058 (20k)	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529)	Apr-18 Apr-18
Power sensor NRP-Z91 Reference 20 dB Atlenuator Type-N mismatch combination Reference Probe EX3DV4	SN: 5058 (20k) SN: 5047.2 / 06327	07-Apr-17 (No. 217-02528)	Apr-18
Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17)	Apr-18 Apr-18 Dec-18
Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17)	Apr-18 Apr-18 Dec-18 Oct-18
Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17) Check Date (in house)	Apr-18 Apr-18 Dec-18 Oct-18 Scheduled Check
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	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601 ID # SN: GB37480704	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17) Check Date (in house) 07-Oct-15 (in house check Oct-16)	Apr-18 Apr-18 Dec-18 Oct-18 Scheduled Check In house check: Oct-18
Power sensor NRP-Z91 Reference 20 dB Atlenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601  ID # SN: GB37480704 SN: US37292783	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17)  Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-16 (in house check Oct-16)	Apr-18 Apr-18 Dec-18 Oct-18 Scheduled Check In house check: Oct-18 In house check: Oct-18
Power sensor NRP-Z91 Reference 20 dB Atlencator Type-N mismatch combination Reference Probe EX3DV4 DAE4  Secondary Standards Power meter EPM-442A Power sensor HP 8481A RF generator R&S SMT-06	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601  ID # SN: GB37480704 SN: US37292783 SN: MY41092317	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17)  Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	Apr-18 Apr-18 Dec-18 Oct-18 Scheduled Check In house check: Oct-18 In house check: Oct-18 In house check: Oct-18
Power sensor NRP-Z91 Reference 20 dB Atlenuator 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 Network Analyzer HP 8753E	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601  ID # SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17)  Check Date (in house)  07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16)	Apr-18 Apr-18 Dec-18 Oct-18 Scheduled Check In house check: Oct-18
Power sensor NRP-Z91 Reference 20 dB Atlenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4  Secondary Standards Power meter EPM-442A Power sensor HP 8481A RF generator R&S SMT-06	SN: 5058 (20K) SN: 5047.2 / 06327 SN: 3503 SN: 601  ID # SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US37390585	07-Apr-17 (No. 217-02528) 07-Apr-17 (No. 217-02529) 30-Dec-17 (No. EX3-3503_Dec17) 26-Oct-17 (No. DAE4-601_Oct17)  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) 18-Oct-01 (in house check Oct-17)	Apr-18 Apr-18 Dec-18 Oct-18 Scheduled Check In house check: Oct-18

Certificate No: D3500V2-1059\_Jan18

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

Glossarv:

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: D3500V2-1059\_Jan18

## **Measurement Conditions**

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

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

Head TSL parameters

The following parameters and calculations were applied.

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

### SAR result with Head TSL

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

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

## **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	51.3	3.31 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.0 ± 6 %	3.32 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

## SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	6.55 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	65.1 W/kg ± 19.9 % (k=2)

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

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

### Antenna Parameters with Head TSL

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

## **Antenna Parameters with Body TSL**

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

## General Antenna Parameters and Design

Electrical Delay (one direction)	1.136 ns

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

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

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

## **Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	January 20, 2017

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

Date: 11.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 3500 MHz

Medium parameters used: f = 3500 MHz;  $\sigma = 2.91 \text{ S/m}$ ;  $\varepsilon_r = 38.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

## **DASY52 Configuration:**

Probe: EX3DV4 - SN3503; ConvF(7.8, 7.8, 7.8); Calibrated: 30.12.2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 26.10,2017

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

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

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

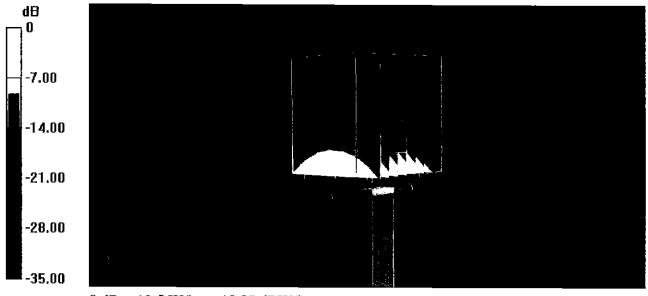
(8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 69.59 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 17.6 W/kg

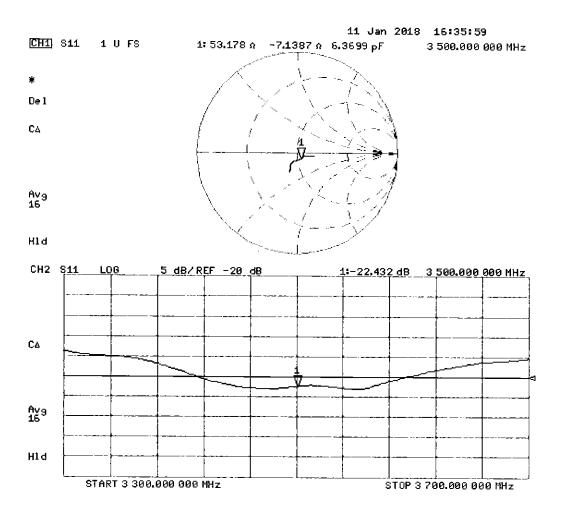
SAR(1 g) = 6.44 W/kg; SAR(10 g) = 2.43 W/kg

Maximum value of SAR (measured) = 12.5 W/kg



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

# Impedance Measurement Plot for Head TSL



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

Date: 10.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 3500 MHz

Medium parameters used: f = 3500 MHz;  $\sigma = 3.32 \text{ S/m}$ ;  $\varepsilon_r = 50$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN3503; ConvF(7.43, 7.43, 7.43); Calibrated: 30.12.2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 26.10,2017

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

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

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

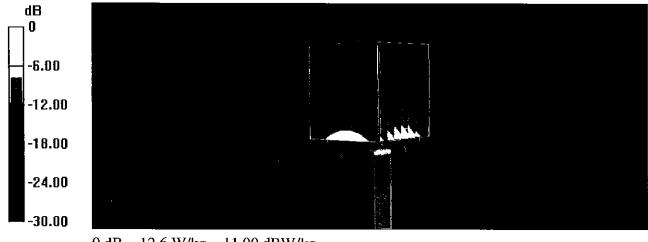
(8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 66.18 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 17.9 W/kg

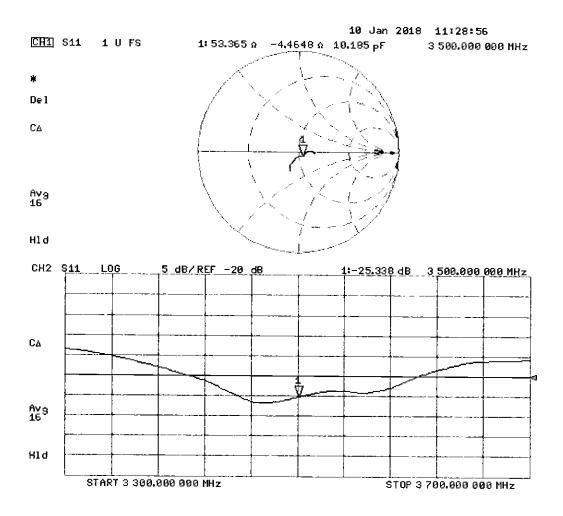
SAR(1 g) = 6.55 W/kg; SAR(10 g) = 2.43 W/kg

Maximum value of SAR (measured) = 12.6 W/kg



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

## Impedance Measurement Plot for Body TSL



## PCTEST ENGINEERING LABORATORY, INC.



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# **Certification of Calibration**

Object D3500V2 – SN: 1059

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

Extension Calibration date: 1/11/2019

Description: SAR Validation Dipole at 3500 MHz.

Calibration Equipment used:

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

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

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

Object:	Date Issued:	Page 1 of 5
D3500V2 – SN: 1059	01/11/2019	rage 1015

#### **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:

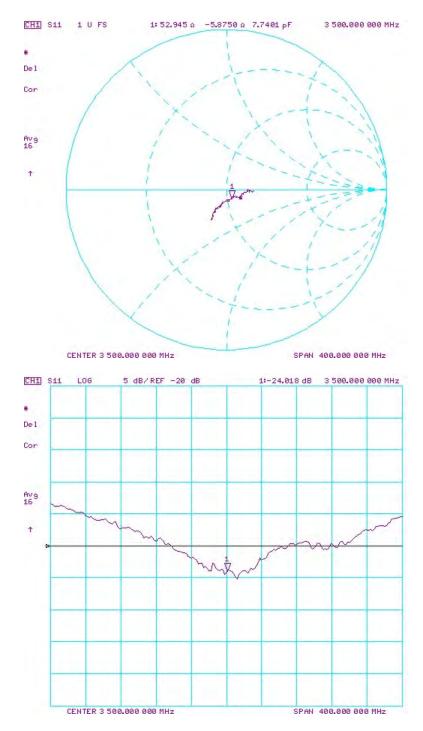
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

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

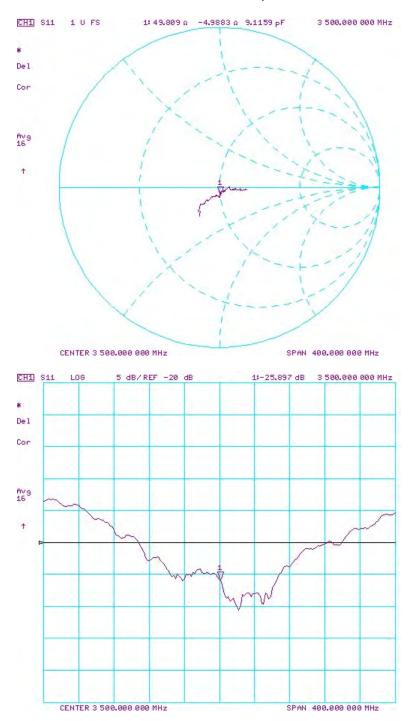
Object:	Date Issued:	Page 2 of 5
D3500V2 - SN: 1059	01/11/2019	raye 2 01 3

Impedance & Return-Loss Measurement Plot for Head TSL



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

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



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



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# **Certification of Calibration**

Object D3500V2 – SN: 1059

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

Extension Calibration date: 1/11/2020

Description: SAR Validation Dipole at 3500 MHz.

Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAKS-3.5	Portable DAK	9/10/2019	Annual	9/10/2020	1045
Anritsu	MA2411B	Pulse Power Sensor	8/14/2019	Annual	8/14/2020	1315051
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
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	2/19/2019	Annual	2/19/2020	3914
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272

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

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	201

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

### **DIPOLE CALIBRATION EXTENSION**

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

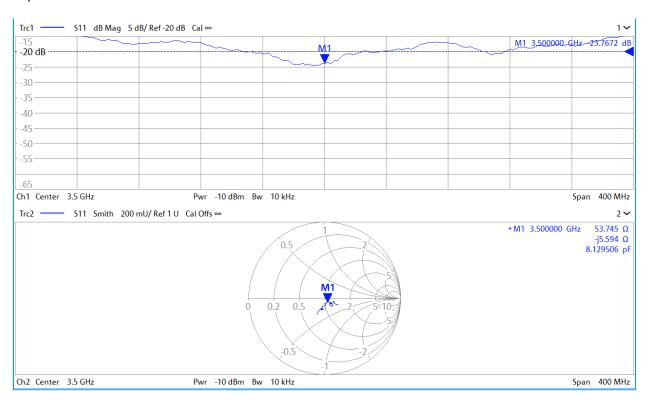
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

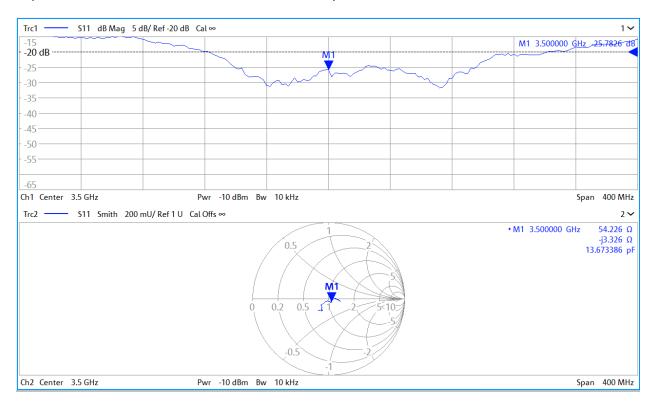
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Head SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real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

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





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)

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

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

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

## SAR result with Body TSL at 5600 MHz

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

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

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

The following parameters and calculations were applied.

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

## SAR result with Body TSL at 5750 MHz

SAR averaged over 1 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	$52.7 \Omega + 0.0 j\Omega$
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 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.6 W/kg ± 19.9 % (k=2)

## SAR result with SAM Head (Mouth)

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

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

## SAR result with SAM Head (Neck)

SAR averaged over 1 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,

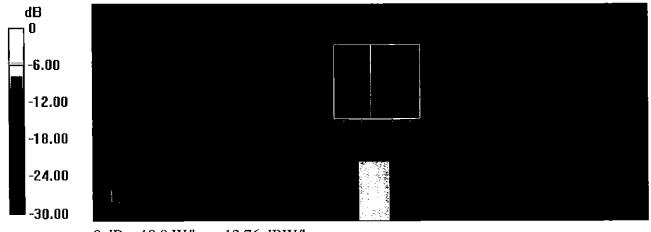
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

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

Peak SAR (extrapolated) = 31.4 W/kg

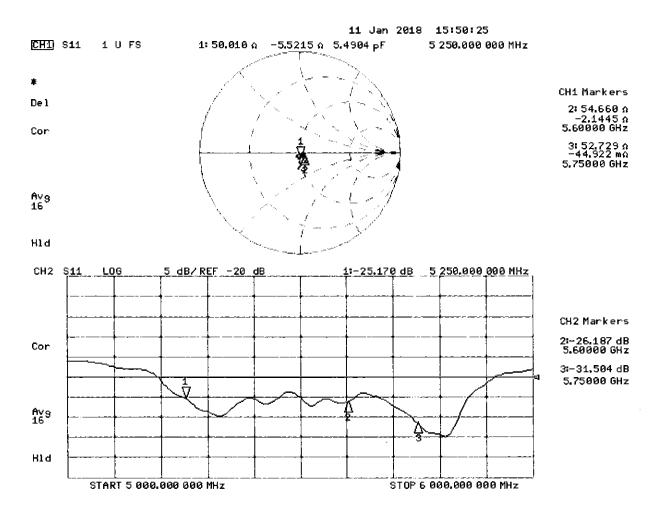
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.3 W/kg

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

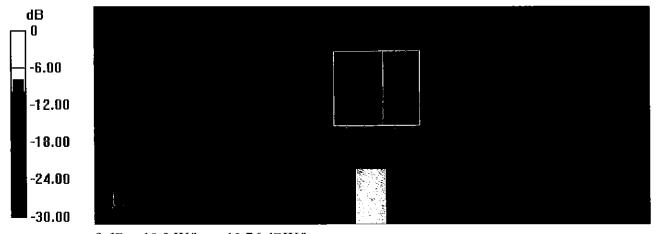
#### Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,

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

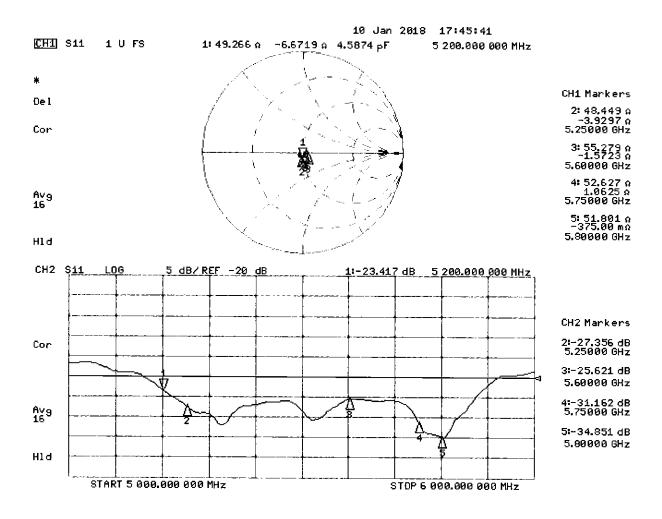
Peak SAR (extrapolated) = 33.3 W/kg

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

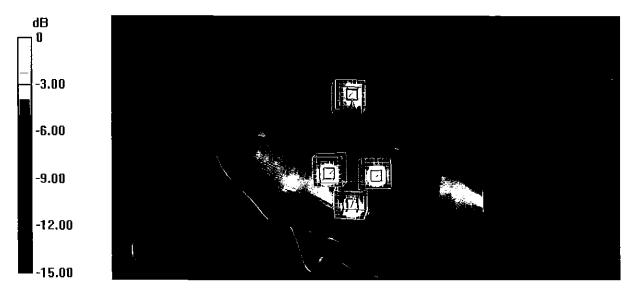
# SAM Head/Ear - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

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	rage 1014

#### **DIPOLE CALIBRATION EXTENSION**

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

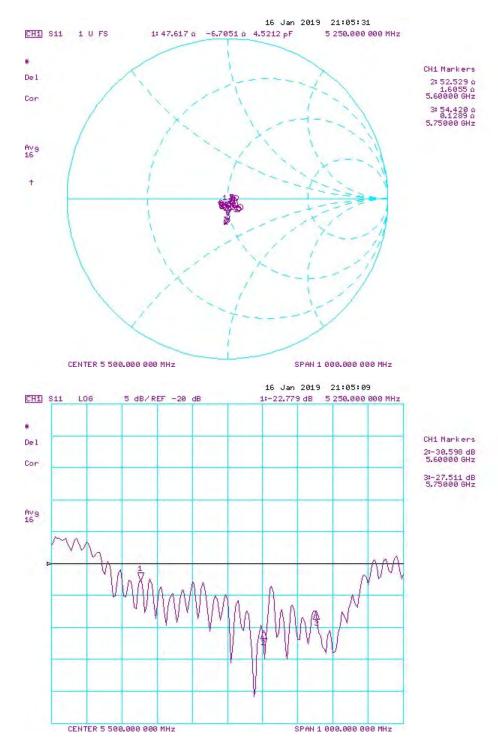
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

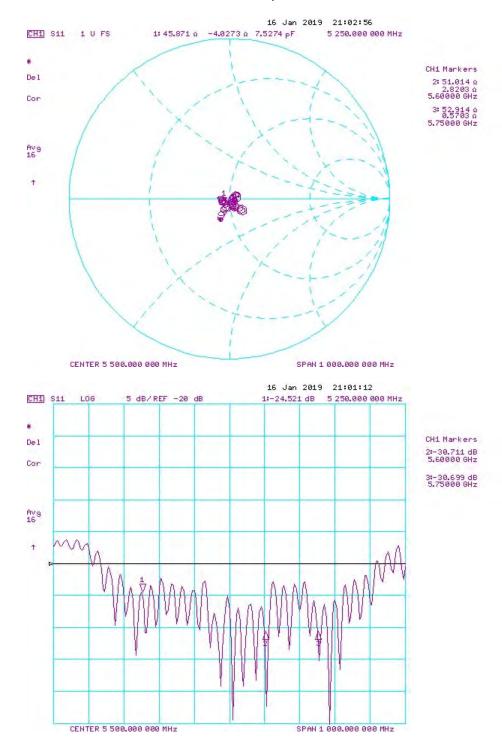
Object:	Date Issued:	Page 2 of 4	
D5GHzV2 – SN: 1057	01/16/2019	Fage 2 01 4	

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



Object:	Date Issued:	Page 3 of 4
D5GHzV2 – SN: 1057	01/16/2019	rage 3 or 4

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



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



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: 1/16/2020

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	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:

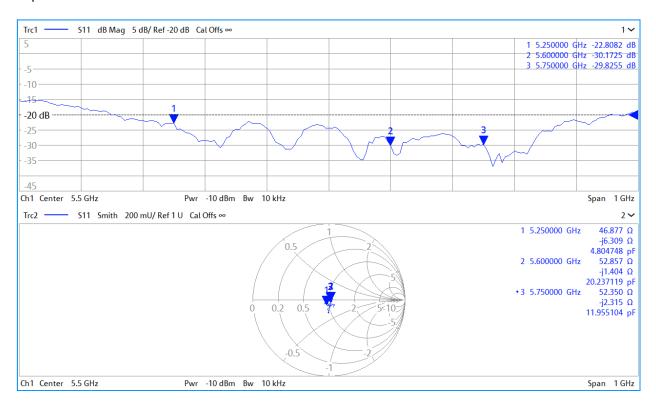
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

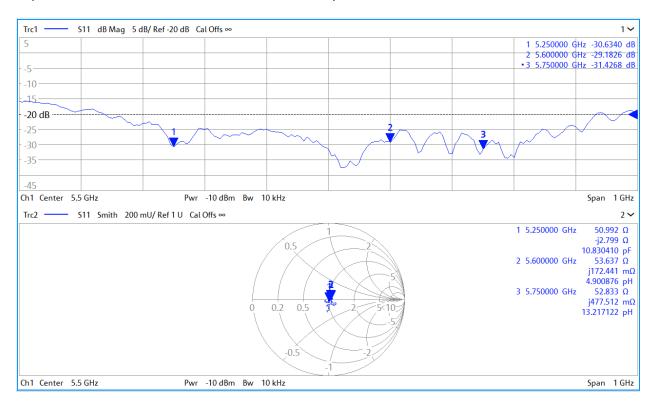
Object:	Date Issued:	Page 2 of 4
D5GHzV2 – SN: 1057	01/16/2020	raye 2 01 4

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



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

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



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

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Client

**PC Test** 

Certificate No: D750V3-1003\_Mar20

### CALIBRATION CERTIFICATE

Object

D750V3 - SN:1003

Calibration procedure(s)

QA CAL-05.v11

Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date:

March 16, 2020

BNV 130 12020 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  $(22 \pm 3)^{\circ}$ 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-19 (No. EX3-7349_Dec19)	Dec-20
DAE4	SN: 601	27-Dec-19 (No. DAE4-601_Dec19)	Dec-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-19)	In house check: Oct-20
	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
			1-12-
	pilotejitentile intervenen järkettanet ja vest		V
Approved by:	Katja Pokovic	Technical Manager	ALC
de de la constant de			

Issued: March 16, 2020

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Certificate No: D750V3-1003\_Mar20

Page 1 of 8

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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: D750V3-1003\_Mar20 Page 2 of 8

#### **Measurement Conditions**

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

DASY Version	DASY5	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

#### **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.5 ± 6 %	0.88 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	2.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.78 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	1.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.77 W/kg ± 16.5 % (k=2)

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54. <b>7</b> ± 6 %	0.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	naw.	No ale sas Ma

### 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	2.16 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	8.61 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	1.42 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	5.67 W/kg ± 16.5 % (k=2)

Certificate No: D750V3-1003\_Mar20

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

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.9 Ω - 0.1 jΩ
Return Loss	- 26.7 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.8 Ω - 2.4 jΩ
Return Loss	- 30.6 dB

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.043 ns

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

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

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

#### **Additional EUT Data**

Manufactured by	SPEAG
,	

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

Date: 16.03.2020

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used: f = 750 MHz;  $\sigma = 0.88 \text{ S/m}$ ;  $\varepsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(10.07, 10.07, 10.07) @ 750 MHz; Calibrated: 31.12.2019

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

Electronics: DAE4 Sn601; Calibrated: 27.12.2019

Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

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

Reference Value = 60.72 V/m; Power Drift = -0.04 dB

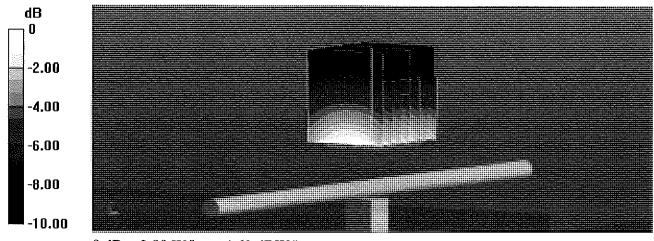
Peak SAR (extrapolated) = 3.27 W/kg

#### SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.43 W/kg

Smallest distance from peaks to all points 3 dB below = 16.5 mm

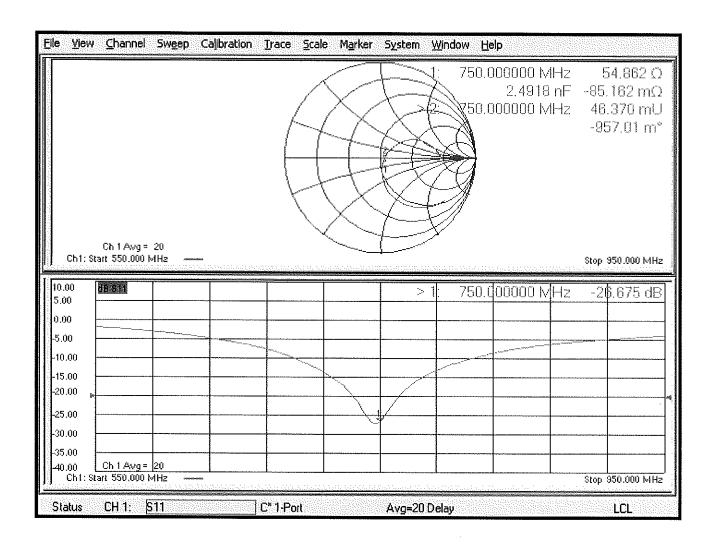
Ratio of SAR at M2 to SAR at M1 = 66.2%

Maximum value of SAR (measured) = 2.90 W/kg



0 dB = 2.90 W/kg = 4.62 dBW/kg

#### Impedance Measurement Plot for Head TSL



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

Date: 16.03.2020

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used: f = 750 MHz;  $\sigma = 0.96 \text{ S/m}$ ;  $\varepsilon_r = 54.7$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(10.61, 10.61, 10.61) @ 750 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 52.10.4(1527); SEMCAD X 14.6.14(7483)

#### 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 = 57.60 V/m; Power Drift = -0.06 dB

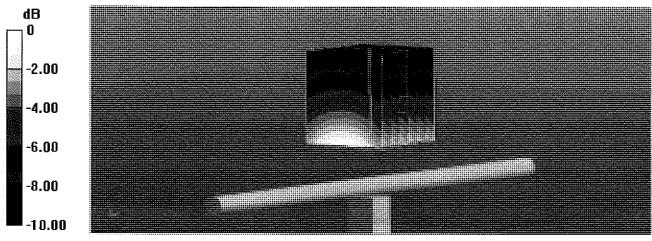
Peak SAR (extrapolated) = 3.23 W/kg

#### SAR(1 g) = 2.16 W/kg; SAR(10 g) = 1.42 W/kg

Smallest distance from peaks to all points 3 dB below = 21.2 mm

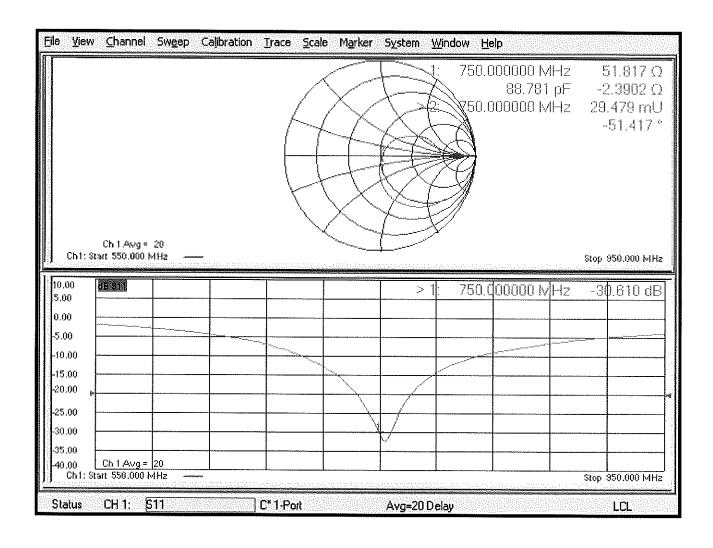
Ratio of SAR at M2 to SAR at M1 = 66.6%

Maximum value of SAR (measured) = 2.87 W/kg



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

#### Impedance Measurement Plot for Body TSL



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Client

PC Test

Certificate No: D835V2-4d047 Mar19

#### CALIBRATION CERTIFICATE Object Calibration procedure(s) QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz Calibration date: This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration) 1D# Primary Standards Cal Date (Certificate No.) Scheduled Calibration Power meter NRP SN: 104778 04-Apr-18 (No. 217-02672/02673) Арг-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 31-Dec-18 (No. EX3-7349\_Dec18) Dec-19 DAE4 SN: 601 04-Oct-18 (No. DAE4-601\_Oct18) Oct-19 Secondary Standards ID# Check Date (in house) Scheduled Check Power meter E4419B SN: GB39512475 07-Oct-15 (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 SN: US41080477 Network Analyzer Agilent E8358A 31-Mar-14 (in house check Oct-18) In house check: Oct-19 Name Function Signature Calibrated by: Manu Seitz Laboratory Technician Approved by: Katia Pokovic Technical Manager Issued: March 13, 2019

Certificate No: D835V2-4d047\_Mar19

Page 1 of 8

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Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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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%.

Certificate No: D835V2-4d047\_Mar19 Page 2 of 8

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

#### **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.9 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.42 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	1.54 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.13 W/kg ± 16.5 % (k=2)

**Body TSL parameters**The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.3 ± 6 %	1.01 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	2.45 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	9.47 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	1.61 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	6.27 W/kg ± 16.5 % (k=2)

Certificate No: D835V2-4d047\_Mar19 Page 3 of 8

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

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

Impedance, transformed to feed point	51.4 Ω - 2.6 jΩ
Return Loss	- 30.7 dB

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

Impedance, transformed to feed point	46.8 Ω - 6.1 jΩ
Return Loss	- 22.9 dB

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

Electrical Delay (one direction)	1.387 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

Certificate No: D835V2-4d047\_Mar19 Page 4 of 8

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

Date: 13.03.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

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

Medium parameters used: f = 835 MHz;  $\sigma = 0.91$  S/m;  $\varepsilon_r = 41.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

#### DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(10, 10, 10) @ 835 MHz; Calibrated: 31.12.2018

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

• Electronics: DAE4 Sn601; Calibrated: 04.10.2018

• Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001

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

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

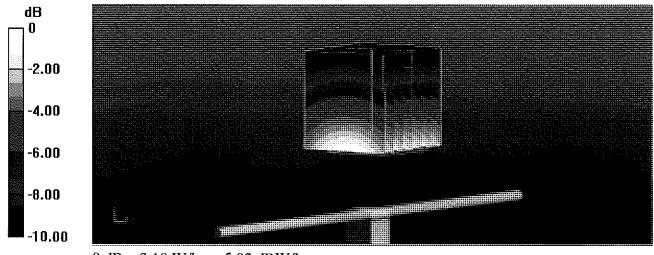
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 62.48 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.60 W/kg

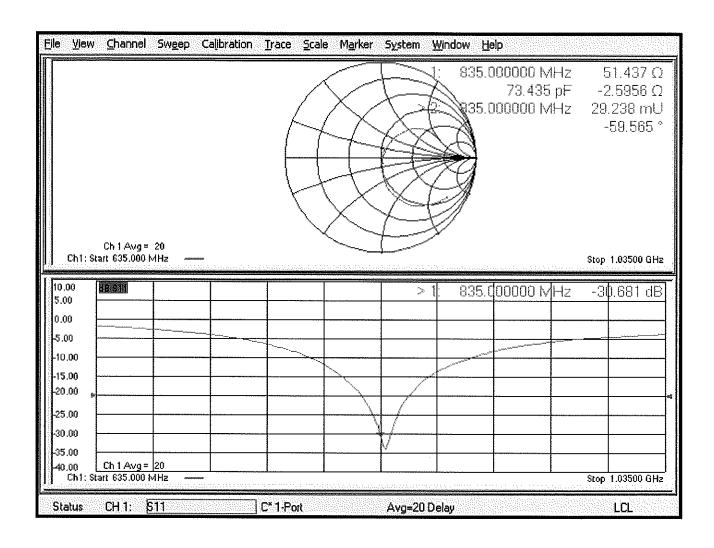
SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.54 W/kg

Maximum value of SAR (measured) = 3.18 W/kg



0 dB = 3.18 W/kg = 5.02 dBW/kg

#### **Impedance Measurement Plot for Head TSL**



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

Date: 13.03.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

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

Medium parameters used: f = 835 MHz;  $\sigma = 1.01 \text{ S/m}$ ;  $\varepsilon_r = 54.3$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### **DASY52 Configuration:**

Probe: EX3DV4 - SN7349; ConvF(10.15, 10.15, 10.15) @ 835 MHz; Calibrated: 31.12.2018

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

Electronics: DAE4 Sn601; Calibrated: 04.10.2018

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

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

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

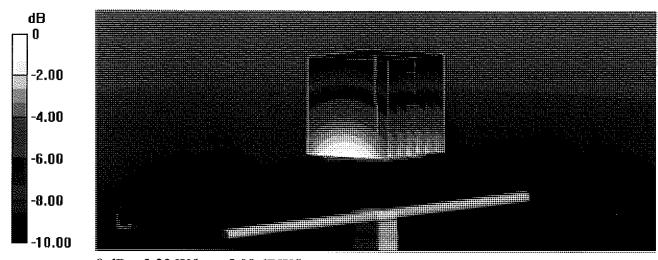
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 60.49 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.58 W/kg

SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.61 W/kg

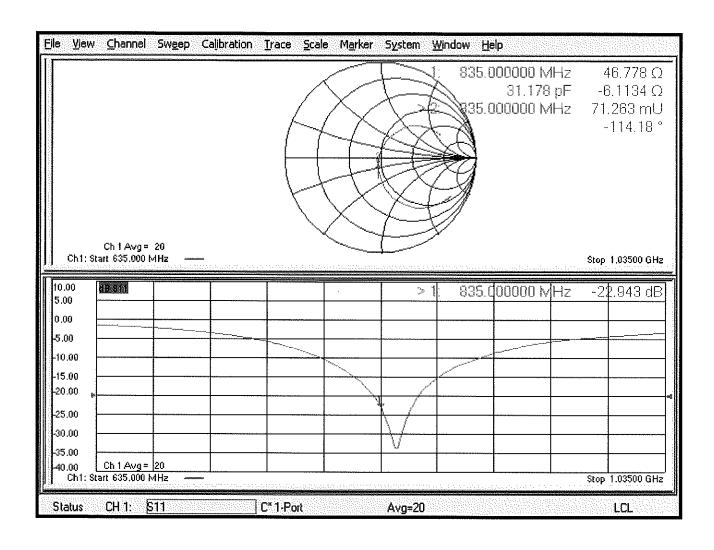
Maximum value of SAR (measured) = 3.23 W/kg



0 dB = 3.23 W/kg = 5.09 dBW/kg

Certificate No: D835V2-4d047\_Mar19

### 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 D835V2 – SN: 4d047

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

Extension Calibration date: 3/13/2020

Description: SAR Validation Dipole at 835 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	1/21/2020	Annual	1/21/2021	7488
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530

#### 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
D835V2 - SN: 4d047	03/13/2020	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:

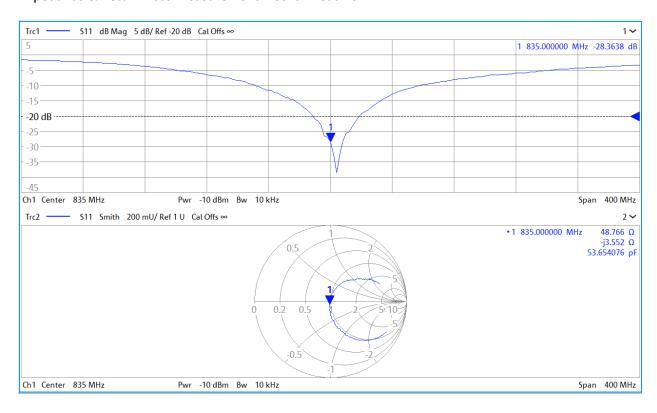
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

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

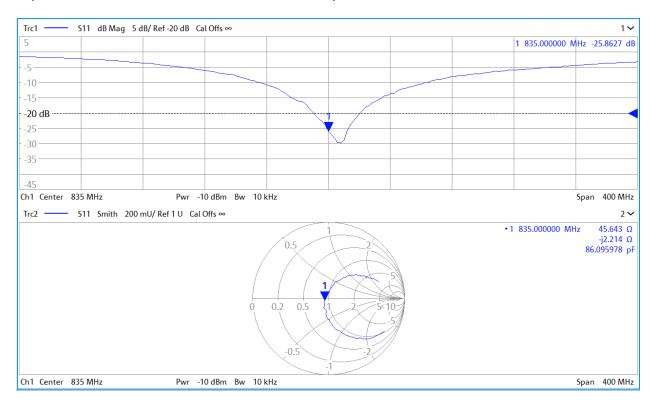
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(40=) M(4== (C)	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (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
3/13/2019	3/13/2020	1.387	1.884	1.87	-0.74%	1.226	1.22	-0.49%	51.4	48.8	2.6	-2.6	-3.6	1.0	-30.7	-28.4	7.60%	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	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
3/13/2019	3/13/2020	1.387	1.894	1.91	0.84%	1.254	1.26	0.48%	46.8	45.6	1.2	-6.1	-2.2	3.9	-22.9	-25.9	-12.90%	PASS

Object:	Date Issued:	Page 2 of 4
D835V2 - SN: 4d047	03/13/2020	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





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: D1750V2-1148\_May20

# **CALIBRATION CERTIFICATE**

Object

D1750V2 - SN:1148

Calibration procedure(s)

QA CAL-05.v11

Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

BN 1-1-2024

Calibration date:

May 12, 2020

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	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: BH9394 (20k)	31-Mar-20 (No. 217-03106)	Apr-21
Type-N mismatch combination	SN: 310982 / 06327	31-Mar-20 (No. 217-03104)	Apr-21
Reference Probe EX3DV4	SN: 7349	31-Dec-19 (No. EX3-7349_Dec19)	Dec-20
DAE4	SN: 601	27-Dec-19 (No. DAE4-601_Dec19)	Dec-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-19)	In house check: Oct-20
	Name	Function	Signature
Calibrated by:	Jeffrey Katzman	Laboratory Technician	11,-1
			H. Kyno
Approved by:	Katja Pokovic	Technical Manager	
			al at

Issued: May 13, 2020

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 Zurlch, Switzerland





S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S wiss 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	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	TTT MARKET COLUMN TO THE TOTAL COLUMN TO THE T
Frequency	1750 MHz ± 1 MHz	1,7754WW 1,7754WW

# **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	40.3 ± 6 %	1.35 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	8.88 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	35.9 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	4.69 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	18.9 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	54.1 ± 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	8.98 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	36.3 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	4.80 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	19.3 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	49.2 Ω - 1.9 jΩ
Return Loss	- 33.6 dB

## **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	45.0 Ω - 1.7 jΩ
Return Loss	- 25.2 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

Certificate No: D1750V2-1148\_May20 Page 4 of 8

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

Date: 12.05.2020

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;  $\sigma = 1.35 \text{ S/m}$ ;  $\varepsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### **DASY52** Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.76, 8.76, 8.76) @ 1750 MHz; Calibrated: 31.12.2019

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

Electronics: DAE4 Sn601; Calibrated: 27.12.2019

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

• DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

## 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 = 105.6 V/m; Power Drift = -0.03 dB

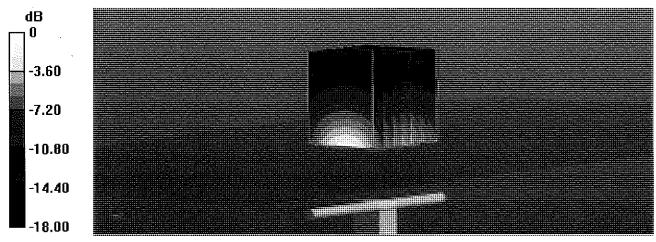
Peak SAR (extrapolated) = 16.4 W/kg

#### SAR(1 g) = 8.88 W/kg; SAR(10 g) = 4.69 W/kg

Smallest distance from peaks to all points 3 dB below = 10 mm

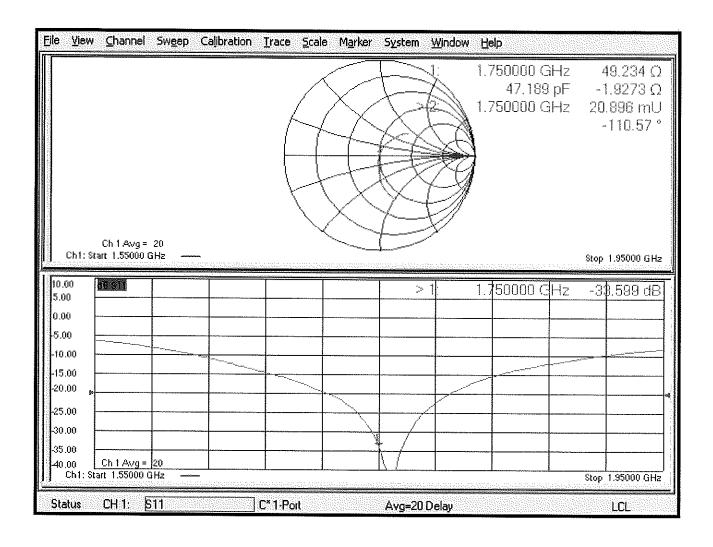
Ratio of SAR at M2 to SAR at M1 = 54.4%

Maximum value of SAR (measured) = 13.8 W/kg



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

# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 12.05.2020

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;  $\sigma = 1.47$  S/m;  $\epsilon_r = 54.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

## DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.61, 8.61, 8.61) @ 1750 MHz; Calibrated: 31.12.2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 27.12.2019

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

• DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

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

Reference Value = 99.95 V/m; Power Drift = -0.05 dB

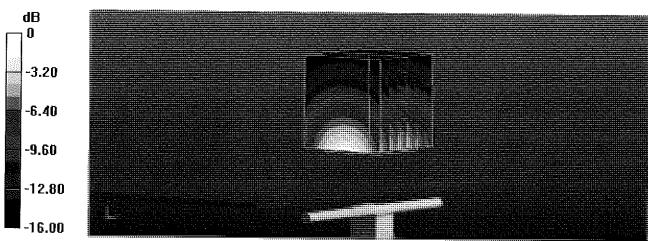
Peak SAR (extrapolated) = 16.1 W/kg

# SAR(1 g) = 8.98 W/kg; SAR(10 g) = 4.8 W/kg

Smallest distance from peaks to all points 3 dB below = 10 mm

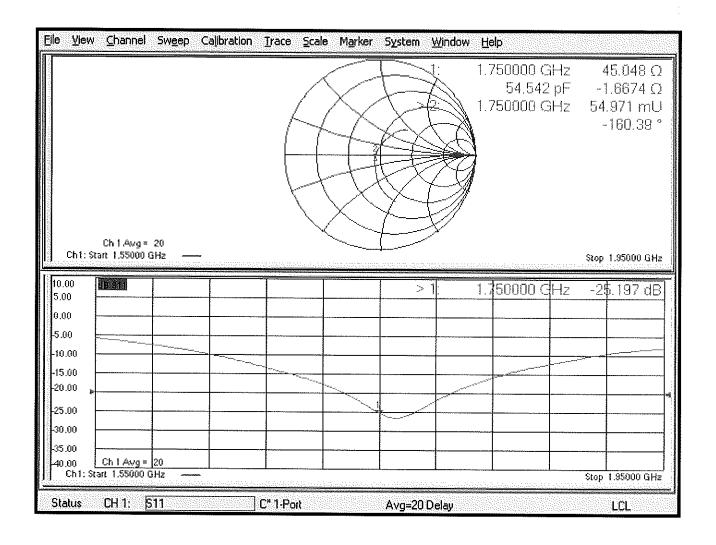
Ratio of SAR at M2 to SAR at M1 = 57.1%

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



# Calibration Laboratory of Schmid & Partner

**Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





C

Schweizerischer Kalibrierdienst Service sulsse 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

Certificate No: D1900V2-5d080\_Oct18

CALIBRATION C	ERTIFICATE		
Dbject	D1900V2 - SN:50	080	
Calibration procedure(s)	QA CAL-05.v10		- 700 MI
	Calibration proce	dure for dipole validation kits a	DOVE FOU WITE
			BN \
Calibration date:	October 23, 2018		BN 10-30-2018 BN 10-30-2018
			BN 20
	•	onal standards, which realize the physical robability are given on the following pages	units of theasurements (51). 10 -
Tio model of the area and the area are	ando war oo moonse p	pages	
all calibrations have been conducted	ed in the closed laborator	y facility; environment temperature (22 ± 3	3)°C and humidity < 70%.
Calibration Equipment used (M&TE	Ecritical for calibration)		
Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
ower meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
ower sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
ower 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 mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
ower meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
ower sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
ower 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:	Jeton Kastrati	Laboratory Technician	te la
Approved by:	Katja Pokovic	Technical Manager	V GAG
	and the control of th	errekteri kar mit Lanneskerrekter sillherrekteren en grif i sunette en errektig fraggeste	Issued: October 23, 2018

Certificate No: D1900V2-5d080\_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





S 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:**

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: D1900V2-5d080\_Oct18 Page 2 of 8

## **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	do to to	

## 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	9.93 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.8 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	5.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.7 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	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	9.62 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	39.2 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	5.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.6 W/kg ± 16.5 % (k=2)

Certificate No: D1900V2-5d080\_Oct18

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

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.5 Ω + 7.9 jΩ
Return Loss	- 21.8 dB

## **Antenna Parameters with Body TSL**

Impedance, transformed to feed point	48.1 Ω + 8.1 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	June 28, 2006

Certificate No: D1900V2-5d080\_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:5d080

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:

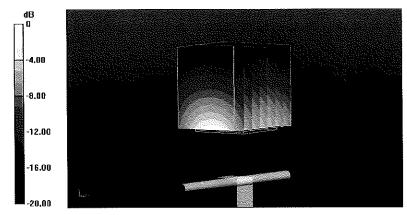
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 110.0 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 18.7 W/kg

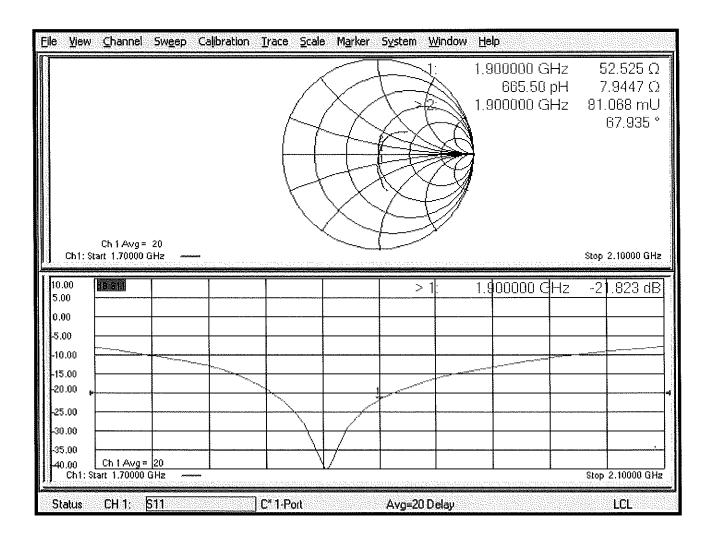
SAR(1 g) = 9.93 W/kg; SAR(10 g) = 5.18 W/kg

Maximum value of SAR (measured) = 15.6 W/kg



0 dB = 15.6 W/kg = 11.93 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:5d080

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:

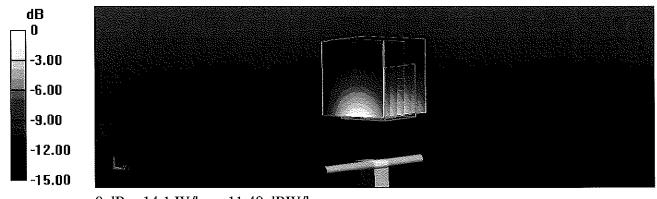
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 99.86 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 17.3 W/kg

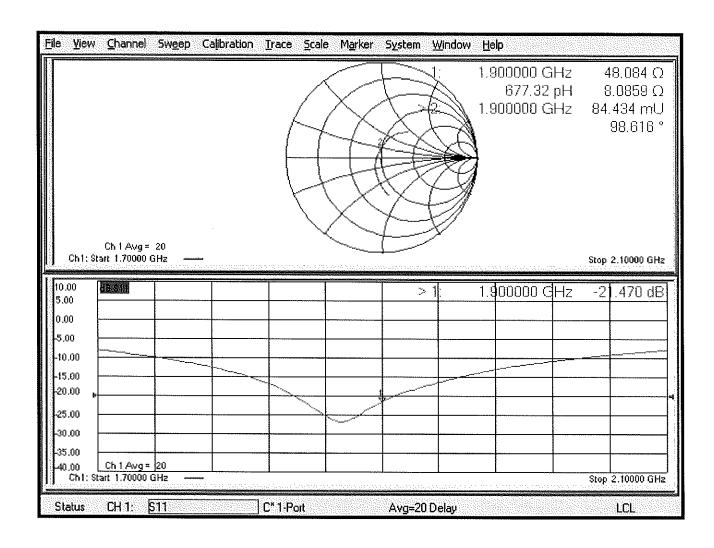
SAR(1 g) = 9.62 W/kg; SAR(10 g) = 5.09 W/kg

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



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

# Impedance Measurement Plot for 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:5d080

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	20K

Object:	Date Issued:	Page 1 of 4
D1900V2 - SN: 5d080	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:

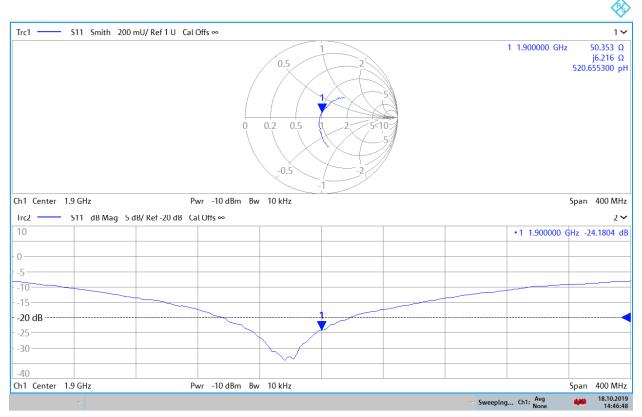
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance 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)		Measured Head SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	(40-) M(4 G)	Deviation 10g (%)		Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
10/23/2018	10/18/2019	1.193	3.98	4.16	4.52%	2.07	2.13	2.90%	52.5	50.4	2.1	7.9	6.2	1.7	-21.8	-24.2	-10.90%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm	(0/)		(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
10/23/2018	10/18/2019	1.193	3.92	4.21	7.40%	2.06	2.16	4.85%	48.1	46.5	1.6	8.1	6.6	1.5	-21.5	-22.2	-3.40%	PASS

Object:	Date Issued:	Page 2 of 4
D1900V2 - SN: 5d080	10/18/2019	raye 2 01 4

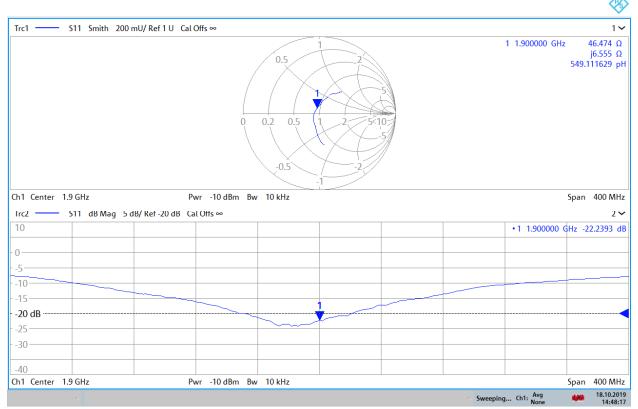
## Impedance & Return-Loss Measurement Plot for Head TSL



14:46:49 18.10.2019

Object:	Date Issued:	Page 3 of 4
D1900V2 - SN: 5d080	10/18/2019	rage 3 01 4

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



14:48:18 18.10.2019

Object:	Date Issued:	Page 4 of 4
D1900V2 - SN: 5d080	10/18/2019	Page 4 of 4

## Calibration Laboratory of

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





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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→
	Gailbrailon proce	dure for dipole validation kits abo	IVE 700 MITZ
			$\rho_{ m N}V$
	Total Control of the		BNV 10-30-2018 10-20-20
Calibration date:	October 23, 2018	3	10-30-
			BNY
The state of the s			10-20-1
	•	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.
All actibrations have been analyst			O I b I-da- 2700/
ui caidiations have been conque	ed in the closed laborato	ry facility: environment temperature (22 ± 3)°C	Jana numidity < 70%.
Colibration Equipment used (MRT)	E critical for calibration)		
Jauniauon Equipinen used (Mai)			
Januarion Equipment used (Math	E crided for calibrationy		
, ,	ID#	Cal Date (Certificate No.)	Scheduled Calibration
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:

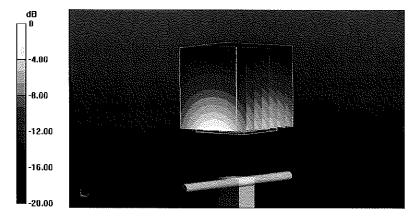
Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 18.5 W/kg

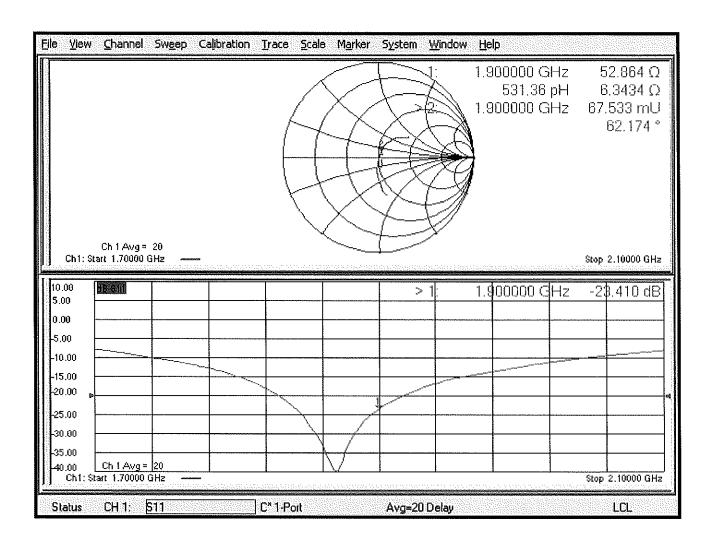
SAR(1 g) = 9.8 W/kg; SAR(10 g) = 5.11 W/kg

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:

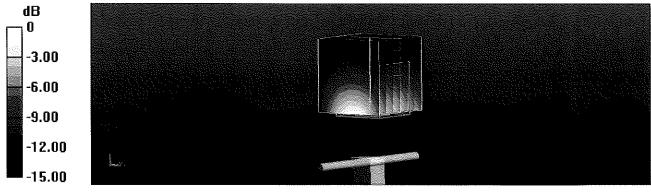
Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 17.5 W/kg

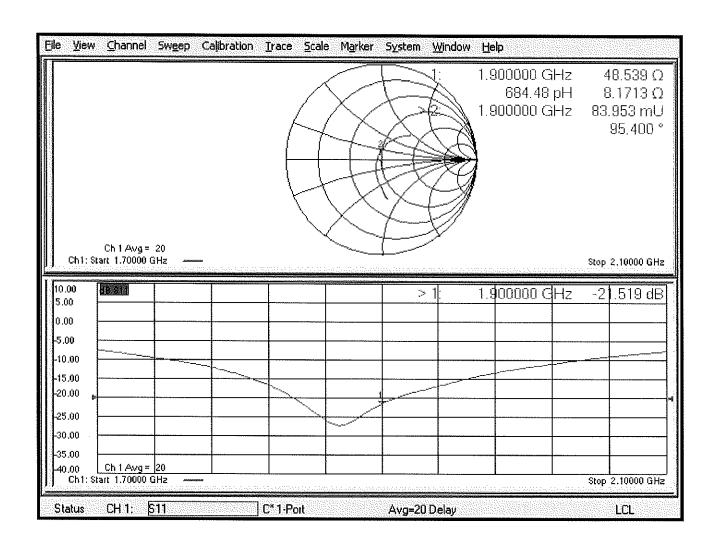
SAR(1 g) = 9.68 W/kg; SAR(10 g) = 5.11 W/kg

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



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# **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	20K

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:

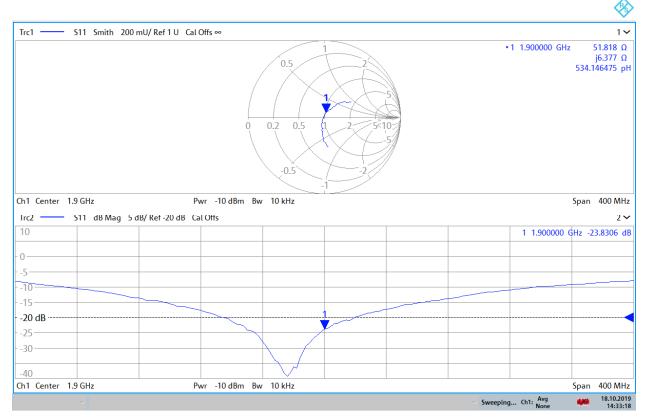
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

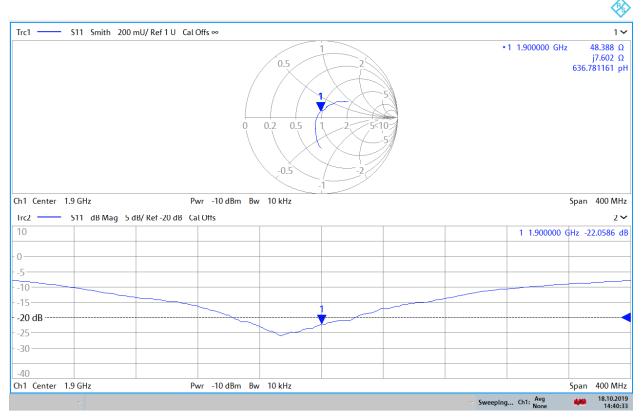
## Impedance & Return-Loss Measurement Plot for Head TSL



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
Zeughausstrasse 43, 8004 Zurich, Switzerland





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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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

Client

**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

Page 1 of 8

## **Calibration Laboratory of**

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Schweizerischer Kalibrierdienst Service suisse d'étalonnage 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:**

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:

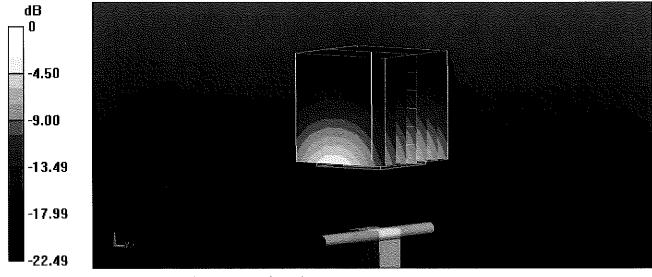
Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

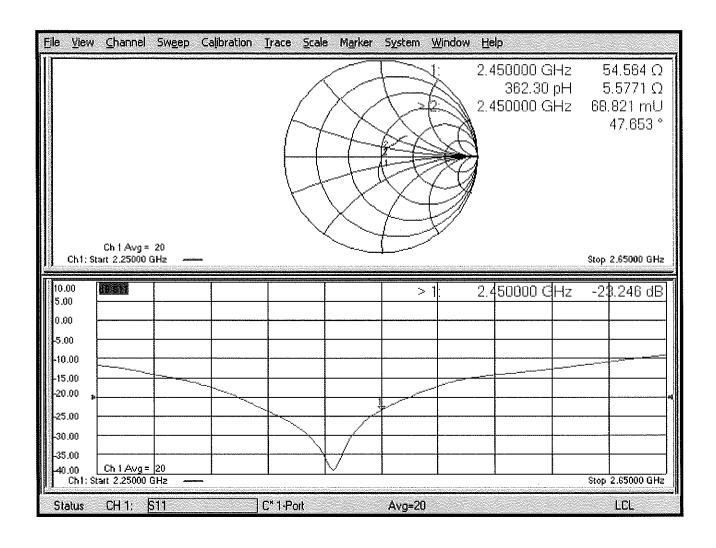
Maximum value of SAR (measured) = 21.8 W/kg



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:

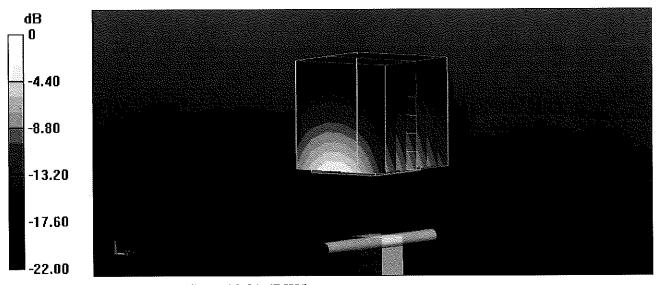
Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 25.6 W/kg

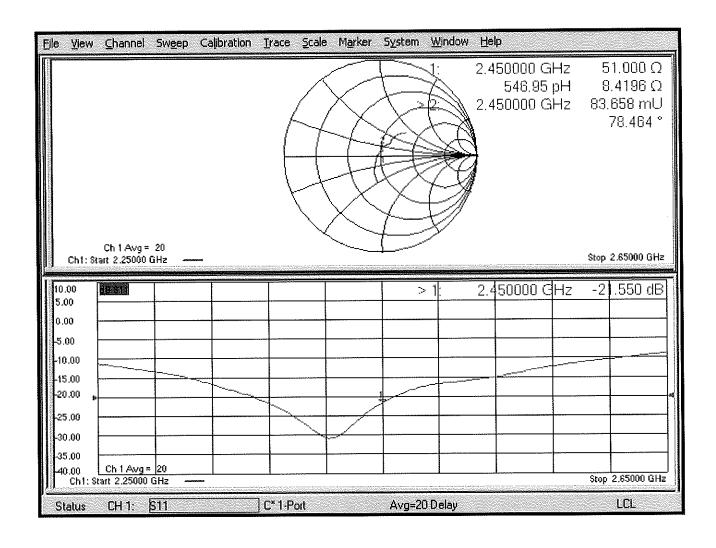
SAR(1 g) = 13 W/kg; SAR(10 g) = 6.09 W/kg

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



#### Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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Client

**PC Test** 

Certificate No: D5GHzV2-1191\_Sep19

# **CALIBRATION CERTIFICATE**

Object D5GHzV2 - SN:1191

Calibration procedure(s) QA CAL-22.v4

Calibration Procedure for SAR Validation Sources between 3-6 GHz

09/26/2019

Calibration date:

Primary Standards

September 17, 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)

ID#

· minur j oturiuu. 20	1.5 "	our pare (corrinduto ric.)	Corrodated Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 3503	25-Mar-19 (No. EX3-3503_Mar19)	Mar-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Manu Seltz	Laboratory Technician	
Approved by	Valla Balcada	<del> </del>	
Approved by:	Katja Pokovic	Technical Manager	MUX.
			ran Martin and plant and a second

Cal Date (Certificate No.)

Issued: September 18, 2019

Scheduled Calibration

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

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

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

### SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.8 W/kg ± 19.9 % (k=2)

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

Certificate No: D5GHzV2-1191\_Sep19

# Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.6 ± 6 %	4.88 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	W 44 10 M	

### SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.7 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	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.4 W/kg ± 19.5 % (k=2)

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

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

### SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.08 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80,2 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.29 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.7 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

To following parameters and executations were appro-	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.44 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.55 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	74.9 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.9 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	46.9 ± 6 %	5.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5250 MHz

Certificate No: D5GHzV2-1191\_Sep19

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

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.16 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.4 W/kg ± 19.5 % (k=2)

Page 5 of 19

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

no lonowing parameters and careers and the same and the s	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.2 ± 6 %	5.98 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.93 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	78.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <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	21.9 W/kg ± 19.5 % (k=2)

**Body TSL parameters at 5750 MHz** 

The following parameters and calculations were applied.

no tonoming parameters and exceedings of	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.0 ± 6 %	6.19 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

### SAR result with Body TSL at 5750 MHz

Certificate No: D5GHzV2-1191\_Sep19

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

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

Page 6 of 19

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

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

# SAR result with Body TSL at 5800 MHz

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

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.12 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.0 W/kg ± 19.5 % (k=2)

Certificate No: D5GHzV2-1191\_Sep19

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

### Antenna Parameters with Head TSL at 5250 MHz

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

# Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	56.4 Ω - 4.3 jΩ
Return Loss	- 22,8 dB

# Antenna Parameters with Head TSL at 5750 MHz

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

Certificate No: D5GHzV2-1191\_Sep19 Page 8 of 19

### Antenna Parameters with Body TSL at 5200 MHz

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

### Antenna Parameters with Body TSL at 5250 MHz

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

## Antenna Parameters with Body TSL at 5600 MHz

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

### Antenna Parameters with Body TSL at 5750 MHz

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

# Antenna Parameters with Body TSL at 5800 MHz

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

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

Flootrical Dalay (one direction)		
Liectifical Delay (offe direction)	Electrical Delay (one direction)	1.202 ns

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

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

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

#### **Additional EUT Data**

Manufactured by	SPEAG

Certificate No: D5GHzV2-1191\_Sep19 Page 9 of 19

# 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.

- 7	, , , , , , , , , , , , , , , , , , ,		
	Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

## 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	8.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.4 W/kg ± 20.3 % (k=2)

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

# SAR result with SAM Head (Mouth)

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

SAR averaged over 10 cm <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	23.6 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	8.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.4 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm <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	23.6W/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	5.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.1 W/kg ± 20.3 % (k=2)

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

Certificate No: D5GHzV2-1191\_Sep19 Page 10 of 19

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

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

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

_	3 - 1		
	Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

## SAR result with SAM Head (Top)

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.7 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.3 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	8.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	85.5 W/kg ± 20.3 % (k=2)

SAR averaged over 10 cm <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	23.6 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	7.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	78.9 W/kg ± 20.3 % (k=2)

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

### SAR result with SAM Head (Ear)

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

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

Certificate No: D5GHzV2-1191\_Sep19

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

Date: 13.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: f = 5250 MHz;  $\sigma = 4.53$  S/m;  $\epsilon_r = 35.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used: f = 5600 MHz;  $\sigma = 4.88$  S/m;  $\epsilon_r = 34.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>,

Medium parameters used: f = 5750 MHz;  $\sigma = 5.03 \text{ S/m}$ ;  $\varepsilon_r = 34.4$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

### DASY52 Configuration:

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

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

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

Reference Value = 76.95 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 28.0 W/kg

SAR(1 g) = 8.13 W/kg; SAR(10 g) = 2.32 W/kg

Maximum value of SAR (measured) = 18.2 W/kg

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

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

Reference Value = 76.89 V/m: Power Drift = 0.02 dB

Peak SAR (extrapolated) = 30.9 W/kg

SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.36 W/kg

Maximum value of SAR (measured) = 19.2 W/kg

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

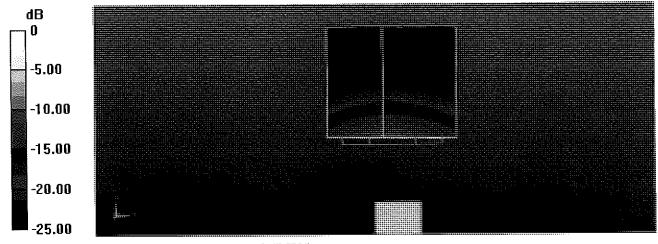
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 74.20 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 31.6 W/kg

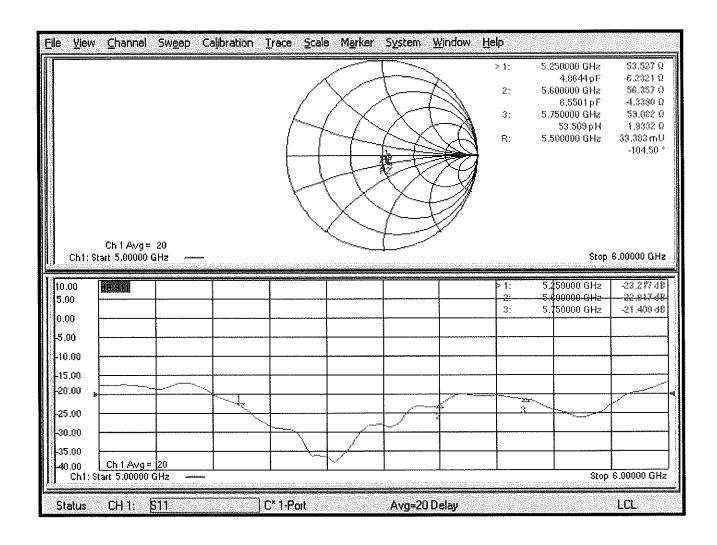
SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.29 W/kg

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



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

### Impedance Measurement Plot for Head TSL



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

Date: 16.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

MHz, Frequency: 5750 MHz, Frequency: 5800 MHz

Medium parameters used: f = 5200 MHz;  $\sigma = 5.44$  S/m;  $\varepsilon_r = 46.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>,

Medium parameters used: f = 5250 MHz;  $\sigma = 5.51 \text{ S/m}$ ;  $\varepsilon_r = 46.9$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Medium parameters used: f = 5600 MHz;  $\sigma = 5.98$  S/m;  $\varepsilon_r = 46.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>,

Medium parameters used: f = 5750 MHz;  $\sigma = 6.19 \text{ S/m}$ ;  $\varepsilon_r = 46$ ;  $\rho = 1000 \text{ kg/m}^3$ ,

Medium parameters used: f = 5800 MHz;  $\sigma = 6.26 \text{ S/m}$ ;  $\varepsilon_r = 45.9$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

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

#### DASY52 Configuration:

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

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

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

Reference Value = 68.78 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 28.7 W/kg

SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.11 W/kg

Maximum value of SAR (measured) = 17.3 W/kg

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

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

Reference Value = 69.09 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 30.3 W/kg

SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.16 W/kg

Maximum value of SAR (measured) = 18.1 W/kg

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

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

Reference Value = 68.19 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 34.3 W/kg

SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.22 W/kg

Maximum value of SAR (measured) = 19.0 W/kg

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

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

Reference Value = 66.80 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 35.1 W/kg

SAR(1 g) = 7.75 W/kg; SAR(10 g) = 2.15 W/kg

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

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

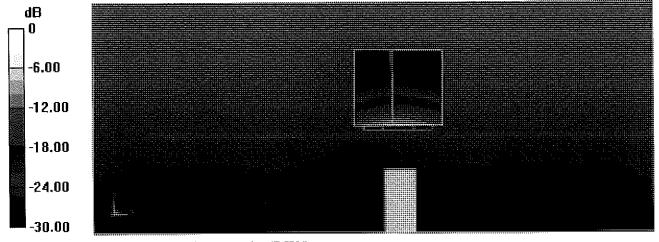
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 67.13 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 33.8 W/kg

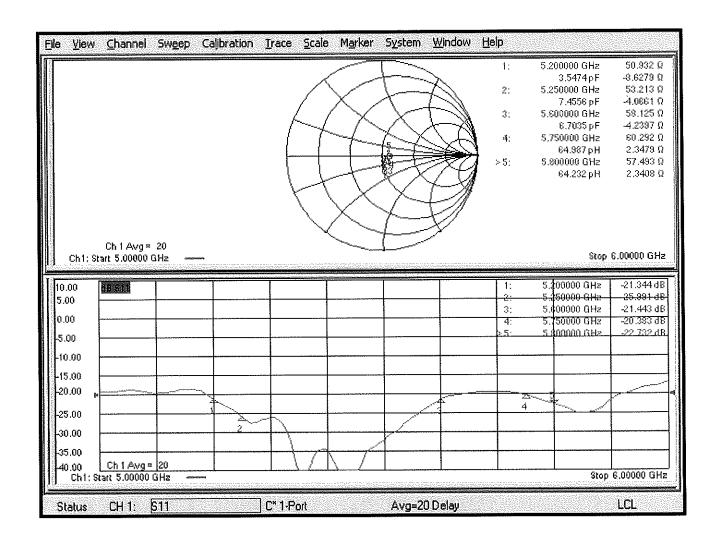
SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.12 W/kg

Maximum value of SAR (measured) = 18.5 W/kg



0 dB = 18.5 W/kg = 12.67 dBW/kg

### Impedance Measurement Plot for Body TSL



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

Date: 17.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5800 MHz Medium parameters used: f = 5200 MHz;  $\sigma$  = 4.55 S/m;  $\epsilon_r$  = 36.2;  $\rho$  = 1000 kg/m³ , Medium parameters used: f = 5800 MHz;  $\sigma$  = 5.28 S/m;  $\epsilon_r$  = 34.9;  $\rho$  = 1000 kg/m³

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

### DASY52 Configuration:

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

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

dz=1.4mm

Reference Value = 74.84 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.34 W/kg

Maximum value of SAR (measured) = 18.5 W/kg

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

dz=1.4mm

Reference Value = 70.45 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 32.3 W/kg

SAR(1 g) = 8.18 W/kg; SAR(10 g) = 2.33 W/kg

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

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

dz=1.4mm

Reference Value = 76.86 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 29.3 W/kg

SAR(1 g) = 8.37 W/kg; SAR(10 g) = 2.36 W/kg

Maximum value of SAR (measured) = 19.8 W/kg

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

Page 18 of 19

dz=1.4mm

Reference Value = 71.46 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 34.0 W/kg

SAR(1 g) = 8.56 W/kg; SAR(10 g) = 2.37 W/kg

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

Certificate No: D5GHzV2-1191\_Sep19

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

dz=1.4mm

Reference Value = 74.71 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 28.8 W/kg

SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.36 W/kg

Maximum value of SAR (measured) = 19.2 W/kg

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

Reference Value = 71.62 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 32.1 W/kg

SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.26 W/kg

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

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

Reference Value = 57.89 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 5.11 W/kg; SAR(10 g) = 1.78 W/kg

Maximum value of SAR (measured) = 11.4 W/kg

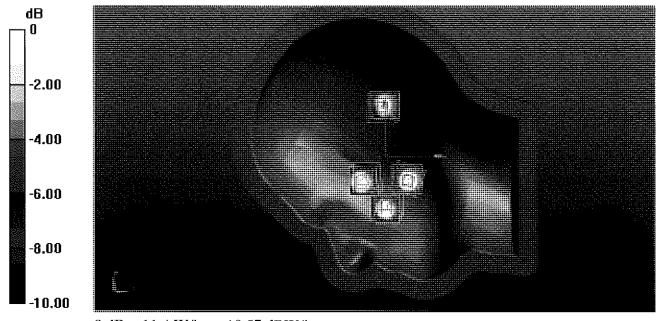
# SAM/Head/Ear - 5800/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 58.22 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 21.0 W/kg

SAR(1 g) = 5.6 W/kg; SAR(10 g) = 1.92 W/kg

Maximum value of SAR (measured) = 13.4 W/kg



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

### **Calibration Laboratory of**

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





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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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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
			que
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

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

### 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)

Certificate No: D5GHzV2-1237\_Aug18 Page 5 of 13

# 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

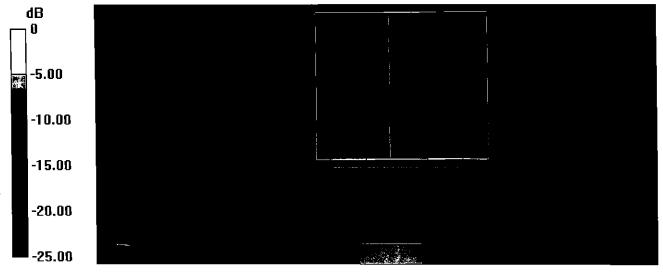
Reference Value = 73.04 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.1 W/kg

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

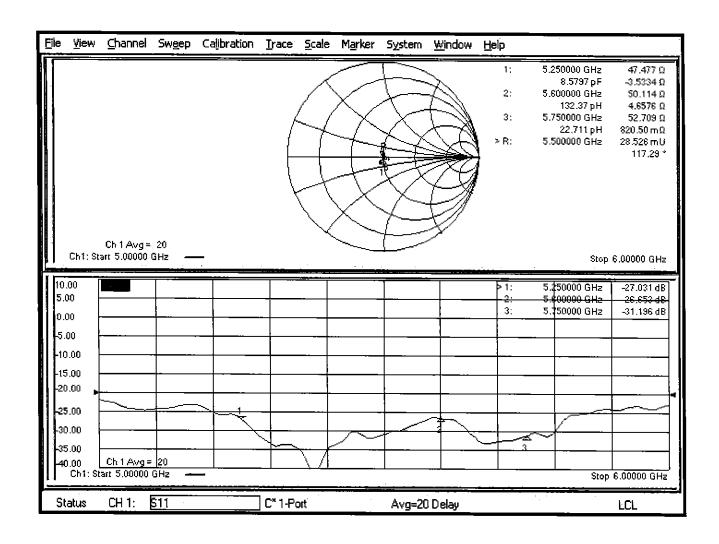
Maximum value of SAR (measured) = 19.9 W/kg

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

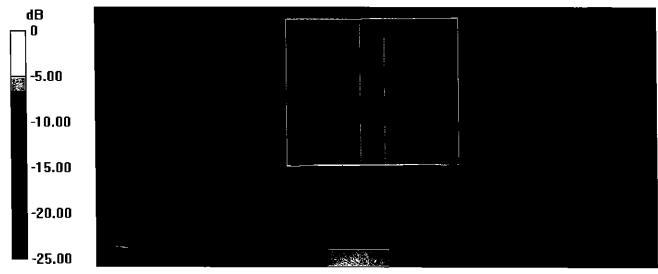
Reference Value = 65.91 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 31.7 W/kg

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

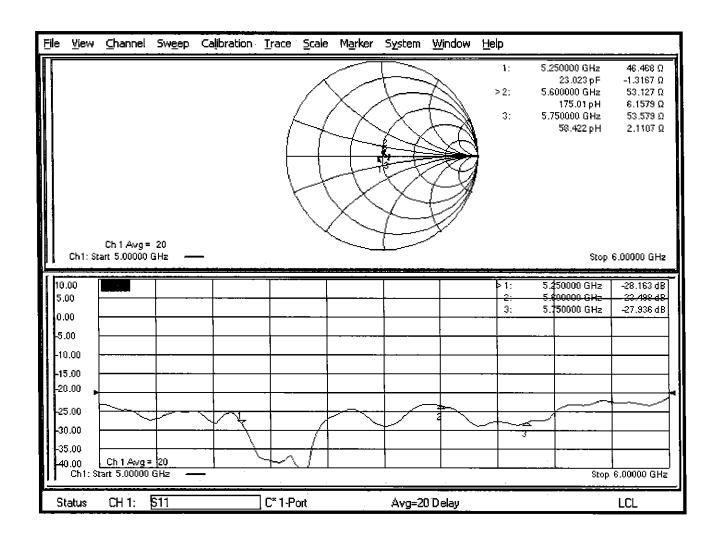
Maximum value of SAR (measured) = 18.0 W/kg

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

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	30K

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:

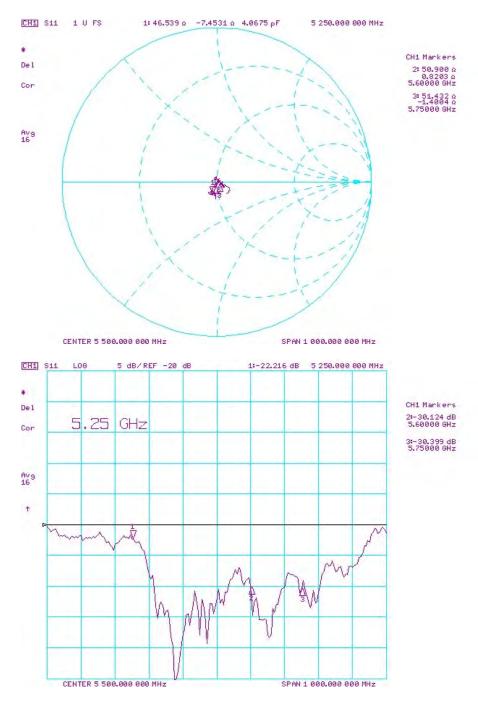
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance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

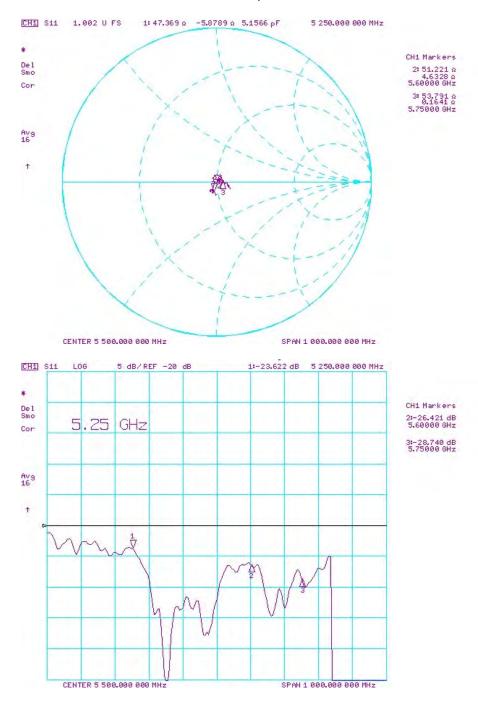
Frequ (M		Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 17.0 dBm	Measured Head SAR (1g) W/kg @ 17.0 dBm	(96)	Certificate SAR Target Head (10g) W/kg @ 17.0 dBm	(10a) M//ka @	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance 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





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Accreditation No.: SCS 0108

Client

**PC Test** 

Certificate No: EX3-3589\_Jan20/2

## CALIBRATION CERTIFICATE (Replacement of No: EX3-3589\_Jan20)

Object

EX3DV4 - SN:3589

Calibration procedure(s)

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

BNV N413012020

Calibration date:

January 21, 2020

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	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec19)	Dec-20
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-19)	In house check: Oct-20

Calibrated by:

Leif Klysner

Laboratory Technician

Approved by:

Katja Pokovic

Technical Manager

Issued: March 31, 2020

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)

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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

Certificate No: EX3-3589\_Jan20/2

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).

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3589

#### **Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) <sup>2</sup> ) <sup>A</sup>	0.44	0.40	0.39	± 10.1 %
DCP (mV) <sup>B</sup>	101.5	97.7	97.9	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	C	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	Х	0.00	0.00	1.00	0.00	138.1	± 3.5 %	± 4.7 %
		Υ	0.00	0.00	1.00		148.9		
		Z	0.00	0.00	1.00		137.1		
10352-	Pulse Waveform (200Hz, 10%)	Х	20.00	93.40	23.88	10.00	60.0	± 1.9 %	± 9.6 %
AAA		Υ	20.00	90.04	21.55		60.0		
		Z	20.00	93.40	23.50		60.0		
10353-	Pulse Waveform (200Hz, 20%)	Х	20.00	93.53	22.66	6.99	80.0	± 1.0 %	± 9.6 %
AAA		Υ	20.00	90.11	20.16		80.0		
		Z	20.00	93.36	22.20		80.0		
10354-	Pulse Waveform (200Hz, 40%)	Х	20.00	95.38	22.01	3.98	95.0	± 1.0 %	± 9.6 %
AAA		Y	20.00	88.87	17.82	]	95.0		
		Z	20.00	94.79	21.35		95.0		
10355-	Pulse Waveform (200Hz, 60%)	Х	20.00	102.43	23.98	2.22	120.0	± 1.1 %	± 9.6 %
AAA		Υ	20.00	86.64	15.26		120.0	]	
		Z	20.00	97.99	21.51		120.0		
10387-	QPSK Waveform, 1 MHz	Х	0.93	64.33	11.56	0.00	150.0	± 3.3 %	± 9.6 %
AAA		Υ	0.54	60.00	7.11	]	150.0	]	
		Z	0.68	61.48	9.17		150.0		
10388-	QPSK Waveform, 10 MHz	X	2.38	69.01	16.27	0.00	150.0	± 1.3 %	± 9.6 %
AAA		Y	2.02	66.96	14.92	]	150.0	]	
		Z	2.15	67.54	15.53		150.0		
10396-	64-QAM Waveform, 100 kHz	X	3.79	73.46	20.06	3.01	150.0	± 0.6 %	± 9.6 %
AAA		Υ	3.12	69.91	18.24		150.0		
		Z	4.11	75.05	20.59		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.59	67.56	16.03	0.00	150.0	± 2.5 %	± 9.6 %
AAA		Υ	3.37	66.67	15.43		150.0	]	
		Z	3.46	66.93	15.67		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	Х	4.95	65.82	15.63	0.00	150.0	± 4.6 %	± 9.6 %
AAA		Υ	4.77	65.46	15.41	1	150.0	]	
		Z	4.80	65.52	15.45		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.

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:3589

### **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	52.5	386.65	34.73	26.61	1.15	5.10	1.30	0.45	1.01
Υ	44.4	339.10	36.93	20.74	1.47	5.06	0.00	0.71	1.01
Z	44.1	325.90	34.85	22.88	1.09	5.07	1.71	0.36	1.01

### **Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	-32.6
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:3589

### 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	8.70	8.70	8.70	0.38	1.00	± 12.0 %
835	41.5	0.90	8.58	8.58	8.58	0.47	0.80	± 12.0 %
1750	40.1	1.37	7.55	7.55	7.55	0.52	0.87	± 12.0 %
1900	40.0	1.40	7.25	7.25	7.25	0.43	0.87	± 12.0 %
2300	39.5	1.67	7.11	7.11	7.11	0.45	0.86	± 12.0 %
2450	39.2	1.80	6.85	6.85	6.85	0.47	0.85	± 12.0 %
2600	39.0	1.96	6.60	6.60	6.60	0.41	0.86	± 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.

<sup>6</sup> MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

the ConvF uncertainty for indicated target tissue parameters.

Gauge the ConvF uncertainty for indicated target tissue parameters.

Gauge the 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:3589

### 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	8.49	8.49	8.49	0.49	0.81	± 12.0 %
835	55.2	0.97	8.27	8.27	8.27	0.29	1.03	± 12.0 %
1750	53.4	1.49	6.93	6.93	6.93	0.41	0.87	± 12.0 %
1900	53.3	1.52	6.72	6.72	6.72	0.35	0.87	± 12.0 %
2300	52.9	1.81	6.62	6.62	6.62	0.34	0.86	± 12.0 %
2450	52.7	1.95	6.60	6.60	6.60	0.40	0.86	± 12.0 %
2600	52.5	2.16	6.35	6.35	6.35	0.37	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 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.

<sup>6</sup> MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

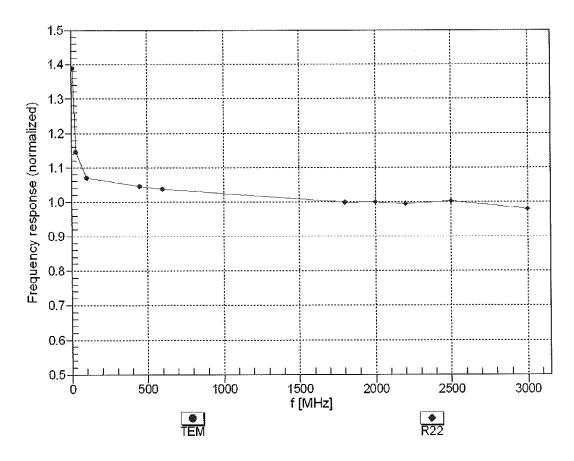
F At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty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

the ConvF uncertainty for indicated target tissue parameters.

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.

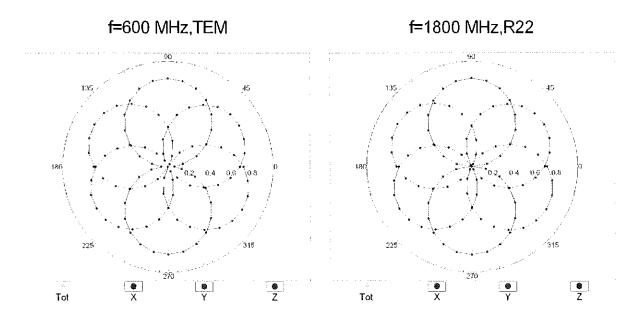
## Frequency Response of E-Field

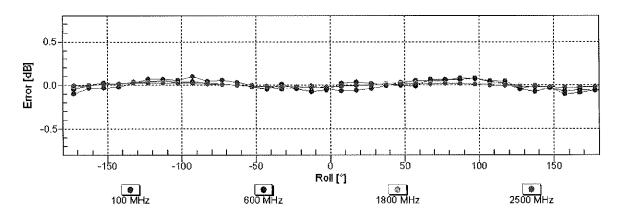
(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

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

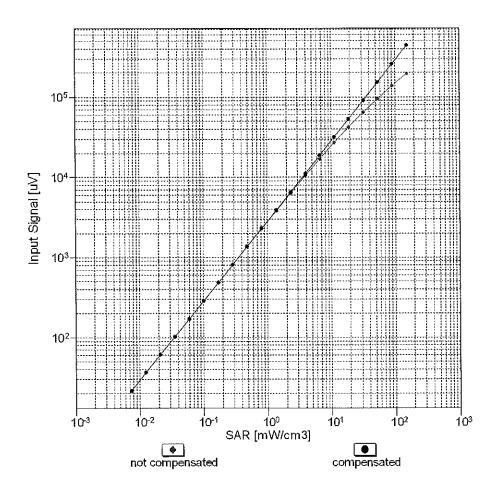


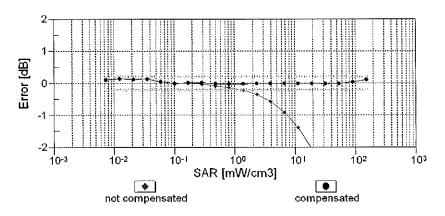


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

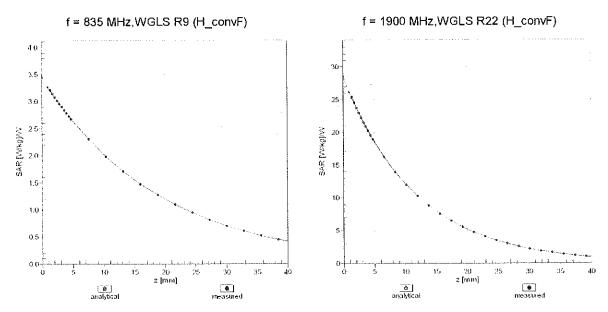
(TEM cell , f<sub>eval</sub>= 1900 MHz)



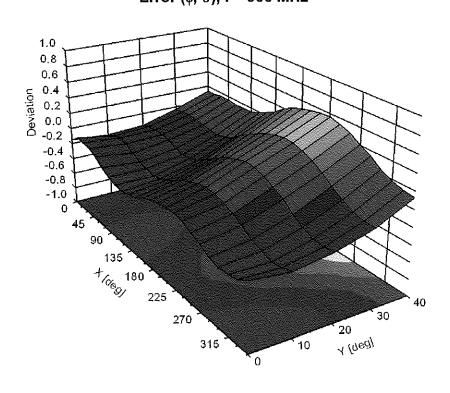


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

## **Conversion Factor Assessment**



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



## **Appendix: Modulation Calibration Parameters**

DID	Rev	Communication System Name	Group	PAR	Unc
		CVI.	CIN	(dB)	(k=2)
0		CW (2)	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test WCDMA	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)		2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	GSM	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6%
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0) GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	9.57 6.56	± 9.6 % ± 9.6 %
10024 10025	DAC	EDGE-FDD (TDMA, 8MSK, TN 0-1)	GSM	12.62	±9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10026	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	3.55	± 9.6 %
10028	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	7.78	±9.6 %
10029	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	±9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6 %
10035	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 %
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 %
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-TOD	9.29	±9.6%
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	±9.6%
10105 10108		LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)  LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	10.01 5.80	± 9.6 %
10100	CAG	<u>ן ביביי טט (סט־רטואה, וטטאו אם, וט אורוב, ערסת)</u>	LIL-FUU	1 0.00	± 9.6 %

			1.75.555	1 0 (0 )	
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6%
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	±9.6%
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	±9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	±9.6%
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	±9.6%
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±96%
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	±96%
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 %
	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10198 10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %

EX3DV4-SN:3589

40220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10220	CAC		WLAN	8.27	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM) IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10222	CAC		WLAN		
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48 8.08	± 9.6 % ± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WCDMA	5.97	
10225	CAB	UMTS-FDD (HSPA+)	LTE-TDD		± 9.6 % ± 9.6 %
10226	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)		9.49	
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	CAG	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	± 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 WIMAX	6.60 12.03	± 9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WIMAX	12.57	± 9.6 % ± 9.6 %
10303		IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC) IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
	AAA		WIMAX	15.24	
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)	WIMAX		± 9.6 %
10306	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)		14.67	± 9.6 %
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)	WIMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	iDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8,36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)	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 dc)	WLAN	8.37	±9.6%
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	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	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	±9.6%
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	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 Sub)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10453	AAD	Validation (Square, 10ms, 1ms)	Test	10.00	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)	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 Sub)	LTE-TDD	7.82	± 9.6 %
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10462	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 %

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10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	±9.6%
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	±9.6%
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	±9.6%
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	±9.6%
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8,57	± 9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	± 9.6 %
10484	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %
10488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %
10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	± 9.6 % ± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	
10497	AAB	<del> </del>			±9.6%
10497	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)  LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10500	AAC		LTE-TDD	8.68	± 9.6 %
		LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	±9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	±9.6%
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	±9.6%
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	±9.6%
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	±9.6%
1 40004	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	±9.6%
10524		IEEE 902 44cc MIEI (20MLH: MCCO, 00cc do)	WLAN	1 0.00	±9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)		8.36	1.0.0 /6
	AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)  IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)  IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.42	± 9.6 %

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10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.36	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.43	± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.29	±9.6%
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc dc)	WLAN	8.38	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8,45	± 9.6 %
10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN	8.32	± 9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	± 9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	±9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc dc)	WLAN	8.39	±9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10544	<del>}</del>		WLAN		
	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)		8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	± 9.6 %
10552	AAB	IEEÉ 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	±9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	±9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc dc)	WLAN	8.50	±9.6%
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	±9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	±9.6%
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	±9.6%
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	±9.6 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	±9.6%
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	±9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	±9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	±9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	±9.6 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	±9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	±9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 44 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 16 Mbps, 90pc dc)	WLAN		
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.76 8.35	±9.6%
1		IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)			±9.6%
10590	AAB		WLAN	8.67	±9.6%
10591 10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN WLAN	8.63	± 9.6 %
	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)		8.79	±9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN WLAN	8.64	±9.6%
10594 10595	AAB AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10090	WAD	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc dc)	IAAFVIA	8.74	± 9.6 %

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10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	±9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	±9.6%
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	±9.6%
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.77	
10612	+		WLAN		±9.6%
,	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)		8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.59	±9.6%
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN	8.58	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	±9.6%
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.83	±9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.88	±9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.71	± 9,6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	±9.6%
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)	WLAN	8.72	±9.6%
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8,83	±9.6%
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802,11ac WiFi (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN		± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MC32, 90pc dc)	WLAN	8.86	
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	±9.6%
10640	AAC		WLAN	8.98	±9.6%
	<u> </u>	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)		9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)	WLAN	8.89	±9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	±9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	± 9.6 %
10646	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAE	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAE	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 %
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2,22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc dc)	WLAN	9.09	± 9.6 %
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10672         AAA         IEEE 802.11ax (20MHz, MCS1, 90pc dc)         WLAN           10673         AAA         IEEE 802.11ax (20MHz, MCS2, 90pc dc)         WLAN           10674         AAA         IEEE 802.11ax (20MHz, MCS3, 90pc dc)         WLAN           10675         AAA         IEEE 802.11ax (20MHz, MCS4, 90pc dc)         WLAN           10676         AAA         IEEE 802.11ax (20MHz, MCS5, 90pc dc)         WLAN           10677         AAA         IEEE 802.11ax (20MHz, MCS6, 90pc dc)         WLAN           10678         AAA         IEEE 802.11ax (20MHz, MCS7, 90pc dc)         WLAN           10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN           10681         AAA         IEEE 802.11ax (20MHz, MCS10, 90pc dc)         WLAN	8.57 8.78 8.74 8.90 8.77 8.73 8.78 8.89 8.80 8.62 8.83 8.42	±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %
10674         AAA         IEEE 802.11ax (20MHz, MCS3, 90pc dc)         WLAN           10675         AAA         IEEE 802.11ax (20MHz, MCS4, 90pc dc)         WLAN           10676         AAA         IEEE 802.11ax (20MHz, MCS5, 90pc dc)         WLAN           10677         AAA         IEEE 802.11ax (20MHz, MCS6, 90pc dc)         WLAN           10678         AAA         IEEE 802.11ax (20MHz, MCS7, 90pc dc)         WLAN           10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN	8.74 8.90 8.77 8.73 8.78 8.89 8.80 8.62 8.83	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10675         AAA         IEEE 802.11ax (20MHz, MCS4, 90pc dc)         WLAN           10676         AAA         IEEE 802.11ax (20MHz, MCS5, 90pc dc)         WLAN           10677         AAA         IEEE 802.11ax (20MHz, MCS6, 90pc dc)         WLAN           10678         AAA         IEEE 802.11ax (20MHz, MCS7, 90pc dc)         WLAN           10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN	8.90 8.77 8.73 8.78 8.89 8.80 8.62 8.83	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10676         AAA         IEEE 802.11ax (20MHz, MCS5, 90pc dc)         WLAN           10677         AAA         IEEE 802.11ax (20MHz, MCS6, 90pc dc)         WLAN           10678         AAA         IEEE 802.11ax (20MHz, MCS7, 90pc dc)         WLAN           10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN	8.77 8.73 8.78 8.89 8.80 8.62 8.83	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10677         AAA         IEEE 802.11ax (20MHz, MCS6, 90pc dc)         WLAN           10678         AAA         IEEE 802.11ax (20MHz, MCS7, 90pc dc)         WLAN           10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN	8.73 8.78 8.89 8.80 8.62 8.83	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10678         AAA         IEEE 802.11ax (20MHz, MCS7, 90pc dc)         WLAN           10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN	8.78 8.89 8.80 8.62 8.83	± 9.6 % ± 9.6 % ± 9.6 %
10679         AAA         IEEE 802.11ax (20MHz, MCS8, 90pc dc)         WLAN           10680         AAA         IEEE 802.11ax (20MHz, MCS9, 90pc dc)         WLAN	8.89 8.80 8.62 8.83	± 9.6 % ± 9.6 %
10680 AAA IEEE 802.11ax (20MHz, MCS9, 90pc dc) WLAN	8.80 8.62 8.83	± 9.6 %
10000 7001 1222 00211101 (1001012) 1177 1177	8.62 8.83	
1 10681   AAA   IEEE 802.11ax (20MHz. MCS10. 90pc dc)   WLAN   WLAN	8.83	1 #9n% '
10001 1201 1201 1201 1201 1201 1201 120		
10682 AAA IEEE 802.11ax (20MHz, MCS11, 90pc dc) WLAN	8.42	± 9.6 %
10683 AAA IEEE 802.11ax (20MHz, MCS0, 99pc dc) WLAN		± 9.6 %
10684 AAA IEEE 802.11ax (20MHz, MCS1, 99pc dc) WLAN	8.26	± 9.6 %
10685 AAA IEEE 802.11ax (20MHz, MCS2, 99pc dc) WLAN	8.33	± 9.6 %
10686 AAA IEEE 802.11ax (20MHz, MCS3, 99pc dc) WLAN	8.28	± 9.6 %
10687 AAA IEEE 802.11ax (20MHz, MCS4, 99pc dc) WLAN	8.45	± 9.6 %
10688 AAA IEEE 802.11ax (20MHz, MCS5, 99pc dc) WLAN	8.29	± 9.6 %
10689 AAA IEEE 802.11ax (20MHz, MCS6, 99pc dc) WLAN	8.55	± 9.6 %
10690 AAA IEEE 802.11ax (20MHz, MCS7, 99pc dc) WLAN	8.29	± 9.6 %
10691 AAA IEEE 802.11ax (20MHz, MCS8, 99pc dc) WLAN	8.25	± 9.6 %
10692 AAA IEEE 802.11ax (20MHz, MCS9, 99pc dc) WLAN	8.29	± 9.6 %
10693 AAA IEEE 802.11ax (20MHz, MCS10, 99pc dc) WLAN	8.25	± 9.6 %
10694 AAA IEEE 802.11ax (20MHz, MCS11, 99pc dc) WLAN	8.57	± 9.6 %
10695 AAA IEEE 802.11ax (40MHz, MCS0, 90pc dc) WLAN	8.78	± 9.6 %
10696 AAA IEEE 802.11ax (40MHz, MCS1, 90pc dc) WLAN	8.91	± 9.6 %
10697 AAA IEEE 802.11ax (40MHz, MCS2, 90pc dc) WLAN	8.61	± 9.6 %
10698 AAA IEEE 802.11ax (40MHz, MCS3, 90pc dc) WLAN	8.89	± 9.6 %
10699 AAA IEEE 802.11ax (40MHz, MCS4, 90pc dc) WLAN	8.82	± 9.6 %
10700 AAA IEEE 802.11ax (40MHz, MCS5, 90pc dc) WLAN	8.73	± 9.6 %
10701 AAA IEEE 802.11ax (40MHz, MCS6, 90pc dc) WLAN	8.86	± 9.6 %
10702 AAA IEEE 802.11ax (40MHz, MCS7, 90pc dc) WLAN	8.70	± 9.6 %
10703 AAA IEEE 802.11ax (40MHz, MCS8, 90pc dc) WLAN	8.82	± 9.6 %
10704 AAA IEEE 802.11ax (40MHz, MCS9, 90pc dc) WLAN	8.56	± 9.6 %
10705 AAA IEEE 802.11ax (40MHz, MCS10, 90pc dc) WLAN	8.69	± 9.6 %
10706 AAA IEEE 802.11ax (40MHz, MCS11, 90pc dc) WLAN	8.66	± 9.6 %
10707 AAA IEEE 802.11ax (40MHz, MCS0, 99pc dc) WLAN	8.32	± 9.6 %
10708 AAA IEEE 802.11ax (40MHz, MCS1, 99pc dc) WLAN	8.55	± 9.6 %
10709 AAA IEEE 802.11ax (40MHz, MCS2, 99pc dc) WLAN	8.33	± 9.6 %
10710 AAA IEEE 802.11ax (40MHz, MCS3, 99pc dc) WLAN	8.29	± 9.6 %
10711 AAA IEEE 802.11ax (40MHz, MCS4, 99pc dc) WLAN	8.39	± 9.6 %
10712 AAA IEEE 802.11ax (40MHz, MCS5, 99pc dc) WLAN	8.67	± 9.6 %
10713 AAA IEEE 802.11ax (40MHz, MCS6, 99pc dc) WLAN	8.33	± 9.6 %
10714 AAA IEEE 802.11ax (40MHz, MCS7, 99pc dc) WLAN	8.26	± 9.6 %
10715 AAA IEEE 802.11ax (40MHz, MCS8, 99pc dc) WLAN	8.45	±9.6%
10716 AAA IEEE 802.11ax (40MHz, MCS9, 99pc dc) WLAN	8.30	± 9.6 %
10717 AAA IEEE 802.11ax (40MHz, MCS10, 99pc dc) WLAN	8.48	± 9.6 %
10718 AAA IEEE 802.11ax (40MHz, MCS11, 99pc dc) WLAN	8.24	±9.6 %
10719 AAA IEEE 802.11ax (80MHz, MCS0, 90pc dc) WLAN	8.81	±9.6%
10720 AAA IEEE 802.11ax (80MHz, MCS1, 90pc dc) WLAN	8.87	± 9.6 %
10721 AAA IEEE 802.11ax (80MHz, MCS2, 90pc dc) WLAN	8.76	± 9.6 %
10722 AAA IEEE 802.11ax (80MHz, MCS3, 90pc dc) WLAN	8.55	± 9.6 %
10723 AAA IEEE 802.11ax (80MHz, MCS4, 90pc dc) WLAN	8.70	±9.6 %
10724 AAA IEEE 802.11ax (80MHz, MCS5, 90pc dc) WLAN	8.90	± 9.6 %
10725 AAA IEEE 802.11ax (80MHz, MCS6, 90pc dc) WLAN	8.74	± 9.6 %
10726 AAA IEEE 802.11ax (80MHz, MCS7, 90pc dc) WLAN	8.72	± 9.6 %
10727 AAA IEEE 802.11ax (80MHz, MCS8, 90pc dc) WLAN	8.66	± 9.6 %
10728 AAA IEEE 802.11ax (80MHz, MCS9, 90pc dc) WLAN	8.65	± 9.6 %
10729 AAA IEEE 802.11ax (80MHz, MCS10, 90pc dc) WLAN	8.64	± 9.6 %
10730 AAA IEEE 802.11ax (80MHz, MCS11, 90pc dc) WLAN	8.67	± 9.6 %
10731 AAA IEEE 802.11ax (80MHz, MCS0, 99pc dc) WLAN	8.42	±9.6%
10732 AAA IEEE 802.11ax (80MHz, MCS1, 99pc dc) WLAN	8.46	± 9.6 %
10733 AAA IEEE 802.11ax (80MHz, MCS2, 99pc dc) WLAN	8.40	± 9.6 %
10734 AAA IEEE 802.11ax (80MHz, MCS3, 99pc dc) WLAN	8.25	± 9.6 %
10735 AAA IEEE 802.11ax (80MHz, MCS4, 99pc dc) WLAN	8.33	± 9.6 %

10736   AAA	F	·				
10738   AAA     IEEE B02_11sx (80MHz, MCSF, 89pc dc)	10736	1	IEEE 802.11ax (80MHz, MCS5, 99pc dc)	WLAN		± 9.6 %
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10741   AAA   EEE 802.11ax (80MHz, MCS11, 99pc dc)						
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10765   AAA   IEEE 802.11ax (160MHz, MCS10, 99pc dc)						
10766   AAA   IEEE 802.11ax (160MHz, MCS11, 99pc dc)			, , , , , , , , , , , , , , , , , , , ,			
10767   AAC   5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   7.99   ± 9.6 %   10768   AAC   5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.01   ± 9.6 %   10769   AAC   5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.01   ± 9.6 %   10770   AAC   5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10771   AAC   5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10772   AAC   5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10773   AAC   5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10773   AAC   5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.03   ± 9.6 %   10774   AAC   5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10774   AAC   5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10775   AAB   5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.02   ± 9.6 %   10776   AAC   5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.30   ± 9.6 %   10776   AAC   5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.30   ± 9.6 %   10776   AAC   5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.30   ± 9.6 %   10778   AAC   5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.30   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.32   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.33   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.33   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.33   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.33   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)   5G NR FR1 TDD   8.33   ± 9.6 %   10780   AAC   5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)   5G NR						-
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10772         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.23         ± 9.6 %           10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.03         ± 9.6 %           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.02         ± 9.6 %           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10777         AAB         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10779         AAB         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10779         AAB         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10780         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %		-				
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10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.02         ± 9.6 %           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10779         AAB         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.42         ± 9.6 %           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.42         ± 9.6 %           10781         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 % <tr< td=""><td></td><td></td><td><u></u></td><td><u> </u></td><td></td><td></td></tr<>			<u></u>	<u> </u>		
10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10781         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %      <						
10776 AAC 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.30 ±9.6 % 10777 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.30 ±9.6 % 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.34 ±9.6 % 10779 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.34 ±9.6 % 10780 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.38 ±9.6 % 10781 AAC 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.38 ±9.6 % 10782 AAC 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.38 ±9.6 % 10783 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.31 ±9.6 % 10784 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.31 ±9.6 % 10785 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.29 ±9.6 % 10786 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.29 ±9.6 % 10787 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.35 ±9.6 % 10788 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.35 ±9.6 % 10789 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.39 ±9.6 % 10790 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.39 ±9.6 % 10791 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8.39 ±9.6 % 10792 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 7.92 ±9.6 % 10793 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 7.92 ±9.6 % 10794 AAC 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.92 ±9.6 % 10795 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.82 ±9.6 % 10796 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.82 ±9.6 % 10797 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.82 ±9.6 % 10798 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.82 ±9.6 % 10796 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.82 ±9.6 % 10797 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.82 ±9.6 %						
10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.30         ± 9.6 %           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.42         ± 9.6 %           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10781         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10783         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %				<u> </u>		
10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.34         ± 9.6 %           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.42         ± 9.6 %           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %           10785         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %					<del>,                                     </del>	
10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.42         ± 9.6 %           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10787         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %						
10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10783         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10787         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 % <td><del>}</del></td> <td></td> <td></td> <td></td> <td></td> <td></td>	<del>}</del>					
10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.38         ± 9.6 %           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.43         ± 9.6 %           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10787         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %			· · · · · · · · · · · · · · · · · · ·		}	
10782       AAC       5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.43       ± 9.6 %         10783       AAC       5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.31       ± 9.6 %         10784       AAC       5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.29       ± 9.6 %         10785       AAC       5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.40       ± 9.6 %         10786       AAC       5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.35       ± 9.6 %         10787       AAC       5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.44       ± 9.6 %         10788       AAC       5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.39       ± 9.6 %         10789       AAC       5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.37       ± 9.6 %         10791       AAC       5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.39       ± 9.6 %         10792       AAC       5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.83       ± 9.6 %         10793       AAC       5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)					<del></del>	
10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.31         ± 9.6 %           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.29         ± 9.6 %           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.44         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10790         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %           10792         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.92         ± 9.6 %			<u> </u>			1
10784       AAC       5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.29       ± 9.6 %         10785       AAC       5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.40       ± 9.6 %         10786       AAC       5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.35       ± 9.6 %         10787       AAC       5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.44       ± 9.6 %         10788       AAC       5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.39       ± 9.6 %         10789       AAC       5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.37       ± 9.6 %         10790       AAC       5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.39       ± 9.6 %         10791       AAC       5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.83       ± 9.6 %         10792       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.83       ± 9.6 %         10793       AAC       5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.92       ± 9.6 %         10794       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)						
10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.40         ± 9.6 %           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.44         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10790         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %           10792         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.92         ± 9.6 %           10793         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 % <tr< td=""><td></td><td></td><td></td><td></td><td></td><td><del></del></td></tr<>						<del></del>
10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.35         ± 9.6 %           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.44         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10790         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %           10792         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.92         ± 9.6 %           10793         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.95         ± 9.6 %           10794         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 %				5G NR FR1 TDD		
10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.44         ± 9.6 %           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10790         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %           10792         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.92         ± 9.6 %           10793         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.95         ± 9.6 %           10794         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 %           10796         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %	10786			5G NR FR1 TDD	<del></del>	
10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10790         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %           10792         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.92         ± 9.6 %           10793         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.95         ± 9.6 %           10794         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 %           10796         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10797         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.89         ± 9.6 %	10787	AAC		5G NR FR1 TDD	8.44	
10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.37         ± 9.6 %           10790         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8.39         ± 9.6 %           10791         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.83         ± 9.6 %           10792         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.92         ± 9.6 %           10793         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.95         ± 9.6 %           10794         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 %           10796         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10797         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.89         ± 9.6 %           10798         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.89         ± 9.6 %	10788	AAC		5G NR FR1 TDD		
10790       AAC       5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)       5G NR FR1 TDD       8.39       ± 9.6 %         10791       AAC       5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.83       ± 9.6 %         10792       AAC       5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.92       ± 9.6 %         10793       AAC       5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.95       ± 9.6 %         10794       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10795       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.84       ± 9.6 %         10796       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10797       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.89       ± 9.6 %         10798       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.89       ± 9.6 %	10789	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD		± 9.6 %
10791       AAC       5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.83       ± 9.6 %         10792       AAC       5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.92       ± 9.6 %         10793       AAC       5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.95       ± 9.6 %         10794       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10795       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.84       ± 9.6 %         10796       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10797       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       8.01       ± 9.6 %         10798       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.89       ± 9.6 %	10790	AAC		5G NR FR1 TDD		
10792       AAC       5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.92       ± 9.6 %         10793       AAC       5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.95       ± 9.6 %         10794       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10795       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.84       ± 9.6 %         10796       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10797       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       8.01       ± 9.6 %         10798       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.89       ± 9.6 %	10791	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD		± 9.6 %
10794       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10795       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.84       ± 9.6 %         10796       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.82       ± 9.6 %         10797       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       8.01       ± 9.6 %         10798       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       7.89       ± 9.6 %		AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	± 9.6 %
10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 %           10796         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10797         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.01         ± 9.6 %           10798         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.89         ± 9.6 %	10793	AAC	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	± 9.6 %
10795         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.84         ± 9.6 %           10796         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.82         ± 9.6 %           10797         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.01         ± 9.6 %           10798         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.89         ± 9.6 %			5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	
10797         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.01         ± 9.6 %           10798         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.89         ± 9.6 %				5G NR FR1 TDD	7.84	± 9.6 %
10798 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 7.89 ± 9.6 %					7.82	± 9.6 %
					8.01	± 9.6 %
10799   AAC   5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)   5G NR FR1 TDD   7.93   ± 9.6 %	·	<del></del>				
	10799	AAC	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %

10802	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10803	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10805	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10805	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10806	9.6 % 9.6 %
10809	9.6 % 9.6 %
10810	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10812	9.6 % 9.6 %
10817 AAC 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.35 ±9 10818 AAC 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.34 ±9 10819 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.33 ±9 10820 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.30 ±9 10821 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.41 ±9 10822 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.41 ±9 10823 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.36 ±9 10824 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.36 ±9 10825 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.39 ±9 10826 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.39 ±9 10827 AAC 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.41 ±9 10828 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.42 ±9 10829 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.43 ±9 10830 AAC 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) 5G NR FR1 TDD 8.40 ±9 10831 AAC 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.73 ±9 10832 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.74 ±9 10833 AAC 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.75 ±9 10834 AAC 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.75 ±9 10835 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10836 AAC 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10837 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10839 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10839 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10839 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10840 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10841 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 7.76 ±9 10843 AAC 5G NR (CP-OFDM,	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10817	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10818         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.34         ± 9           10819         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.33         ± 9           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.30         ± 9           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10823         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10829	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10819         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.33         ± 9           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.30         ± 9           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.30         ± 9           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10830         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         7.63         ± 9           10832         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10833 <t< td=""><td>9.6 % 9.6 % 9.6 % 9.6 % 9.6 %</td></t<>	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10834         A	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.36         ± 9           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10834         A	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.39         ± 9           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10835 <td< td=""><td>9.6 % 9.6 % 9.6 % 9.6 %</td></td<>	9.6 % 9.6 % 9.6 % 9.6 %
10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.41         ± 9           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10834         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10835         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10837         AAC <td>9.6 % 9.6 % 9.6 %</td>	9.6 % 9.6 % 9.6 %
10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.42         ± 9           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.66         ± 9           10837         AAC	9.6 % 9.6 %
10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.43         ± 9           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)         5G NR FR1 TDD         8.40         ± 9           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.66         ± 9           10837         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.66         ± 9           10840         AAC	9.6 %
10829       AAC       5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)       5G NR FR1 TDD       8.40       ± 9         10830       AAC       5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.63       ± 9         10831       AAC       5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.73       ± 9         10832       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.74       ± 9         10833       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10834       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.75       ± 9         10835       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10836       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.66       ± 9         10837       AAC       5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.68       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10843       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ±	
10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.63         ± 9           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.66         ± 9           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.68         ± 9           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.67         ± 9           10841         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.71         ± 9           10843         AAC <t< td=""><td>9.6 %</td></t<>	9.6 %
10830       AAC       5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.63       ± 9         10831       AAC       5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.73       ± 9         10832       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.74       ± 9         10833       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10834       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.75       ± 9         10835       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10836       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.66       ± 9         10837       AAC       5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.68       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9 </td <td></td>	
10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.73         ± 9           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.74         ± 9           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.75         ± 9           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.66         ± 9           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.68         ± 9           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.67         ± 9           10841         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.71         ± 9           10843         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.49         ± 9           10844         AAC	9.6 %
10832       AAC       5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.74       ± 9         10833       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10834       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.75       ± 9         10835       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10836       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.66       ± 9         10837       AAC       5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.68       ± 9         10839       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ±	9.6 %
10833       AAC       5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10834       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.75       ± 9         10835       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10836       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.66       ± 9         10837       AAC       5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.68       ± 9         10839       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ± 9	9.6 %
10834       AAC       5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.75       ± 9         10835       AAC       5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10836       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.66       ± 9         10837       AAC       5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.68       ± 9         10839       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ± 9	
10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.66         ± 9           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.68         ± 9           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.67         ± 9           10841         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.71         ± 9           10843         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.49         ± 9           10844         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.34         ± 9	9.6 %
10836       AAC       5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.66       ± 9         10837       AAC       5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.68       ± 9         10839       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ± 9	9.6 %
10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.68         ± 9           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.70         ± 9           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.67         ± 9           10841         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.71         ± 9           10843         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.49         ± 9           10844         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.34         ± 9	9.6 %
10839       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ± 9	9.6 %
10839       AAC       5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.70       ± 9         10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ± 9	9.6 %
10840       AAC       5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.67       ± 9         10841       AAC       5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       7.71       ± 9         10843       AAC       5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.49       ± 9         10844       AAC       5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)       5G NR FR1 TDD       8.34       ± 9	9.6 %
10841         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         7.71         ± 9           10843         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.49         ± 9           10844         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.34         ± 9	9.6 %
10843         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.49         ± 9           10844         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)         5G NR FR1 TDD         8.34         ± 9	
10844 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 8.34 ± 9	9.6 %
	9.6 %
10846 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 8 41 ± 9	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
10859 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz) 5G NR FR1 TDD 8.34 ± 9	9.6 %
	9.6 %
	9.6 %
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10875 AAD 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz) 5G NR FR2 TDD 7.78 ± 9	9.6 %
10876 AAD 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz) 5G NR FR2 TDD 8.39 ± 9	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	70
	9.6 %
	9.6 %
	9.6 % 9.6 %
1.100   1.100   0.01   0.01   0	9.6 %

10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	± 9.6 %
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	± 9.6 %
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAA	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAA	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10899	AAA	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAA	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10901	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10902	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10904	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAA	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10906	AAA	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10907	AAA	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAA	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAA	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
10910	AAA	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10910	AAA	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10912	AAA	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6 %
10912	AAA	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6 %
10913	AAA	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	±9.6 %
10914	AAA	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10915	.]		5G NR FR1 TDD	5.87	
<u></u>	AAA	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)			±9.6%
10917	AAA	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10918	AAA	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	±9.6%
10919	AAA	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10920	AAA	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	±9.6%
10921	AAA	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10922	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 9.6 %
10923	AAA	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10924	AAA	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6 %
10925	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 9.6 %
10926	AAA	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10927	AAA	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10928	AAA	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±96%
10929	AAA	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.6%
10930	AAA	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.6%
10931	AAA	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.6%
10932	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10933	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10934	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10935	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10936	AAA	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10937	AAA	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10938	AAA	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10939	AAA	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	± 9.6 %
10940	AAA	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10941	AAA	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10942	AAA	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10943	AAA	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 9.6 %
10944	AAA	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 9.6 %
10945	AAA	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10946	AAA	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10947	AAA	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10948	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10949	AAA	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10950	AAA	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10951	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 9.6 %
10952	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.25	± 9.6 %
	1.001				
10953	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	± 9.6 %

10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	±9.6 %
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 9.6 %
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 9.6 %
10957	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	±9.6 %
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	± 9.6 %
10960	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	± 9.6 %
10961	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	±9.6 %
10962	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
10963	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10964	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	± 9.6 %
10965	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	± 9.6 %
10966	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10967	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	± 9.6 %
10968	AAA	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	± 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





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

Accreditation No.: SCS 0108

Certificate No: EX3-7551\_Sep19/2

Accredited by the Swiss Accreditation Service (SAS)

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Client

**PC Test** 

CALIBRATION CERTIFICATE (Replacement of No: EX3-7551\_Sep19)

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

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)

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

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

Issued: March 31, 2020

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

Certificate No: EX3-7551\_Sep19/2 Page 1 of 22

### Calibration Laboratory of

Schmid & Partner
Engineering AG
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Swiss Calibration Service

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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

B 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

Certificate No: EX3-7551\_Sep19/2

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).

EX3DV4 - SN:7551 September 19, 2019

## 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>B</sup>	104.3	99.1	95.6	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	C	D dB	VR mV	Max dev.	Max Unc <sup>E</sup>
			ub	up,p.		u.			(k=2)
o   c	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		Υ	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 \	Pulse Waveform (200Hz, 40%)	X	15.00	94.66	21.81	3.98	95.0	± 1.2 %	± 9.6 %
	· · · · · · · · · · · · · · · · · · ·	Υ	15.00	89.03	17.62		95.0		
		Z	15.00	94.85	20.37		95.0		
10355- Pulse	Pulse Waveform (200Hz, 60%)	X	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	Х	1.24	68.72	13.42	0.00	150.0	± 3.2 %	± 9.6 %
AAA		Υ	0.54	60.00	7.02		150.0	]	
		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		Y	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	X	4.90	65.94	15.82	0.00	150.0	± 4.2 %	±9.6%
AAA		Y	4.76	65.46	15.39		150.0		
		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%.

Certificate No: EX3-7551\_Sep19/2

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

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

EX3DV4- SN:7551 September 19, 2019

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

**Sensor Model Parameters** 

	C1 fF	C2 fF	α <b>V</b> ⁻¹	T1 ms.V <sup>-2</sup>	T2 ms.V <sup>-1</sup>	T3 ms	T4 V <sup>-2</sup>	T5 V <sup>-1</sup>	T6
Х	47.8	351.65	34.83	22.77	0.50	5.10	0.98	0.37	1.01
Υ	41.0	312.25	36.63	13.13	0.44	5.08	0.35	0.46	1.01
Z	25.5	199.44	38.63	11.25	0.42	5.10	0.00	0.26	1.01

### **Other Probe Parameters**

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

Certificate No: EX3-7551\_Sep19/2 Page 4 of 22

September 19, 2019

## 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) F	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 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.

<sup>6</sup> 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 ba relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters.

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.

September 19, 2019

## 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.

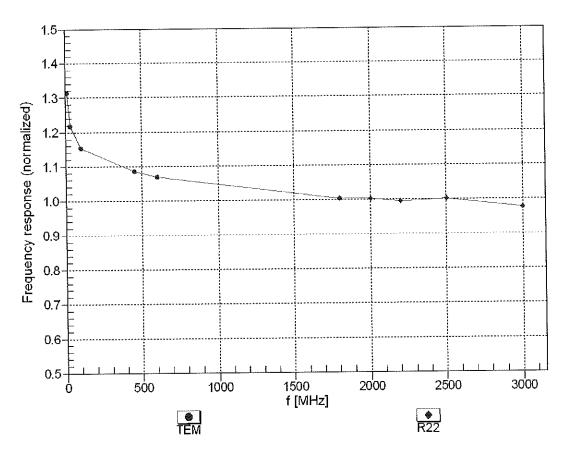
<sup>6</sup> MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

the ConvF uncertainty for indicated target tissue parameters.

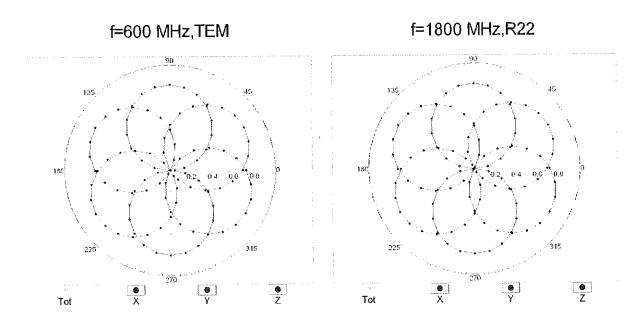
Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the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

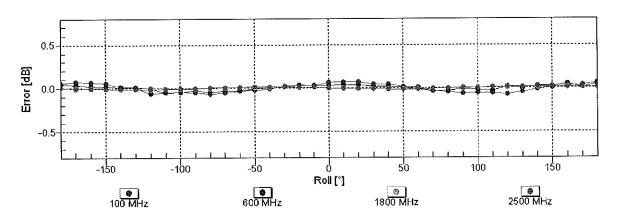
# Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm$  6.3% (k=2)

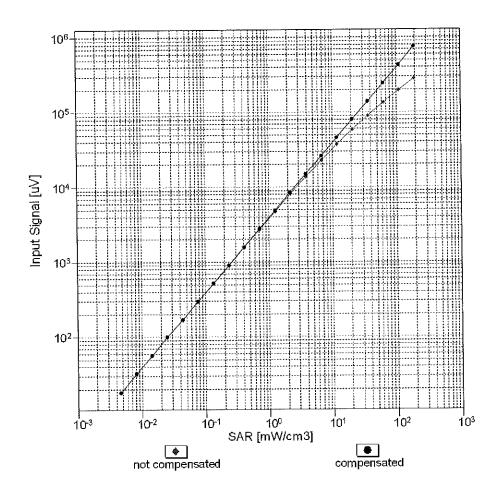
## Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

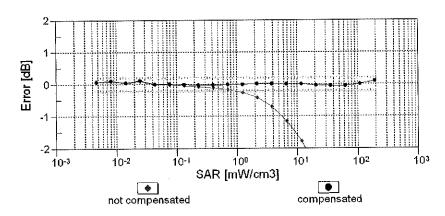




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

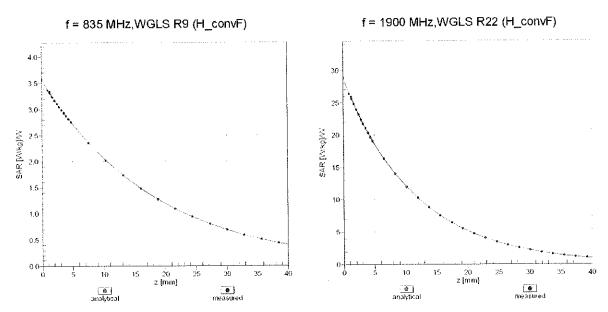
## Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)



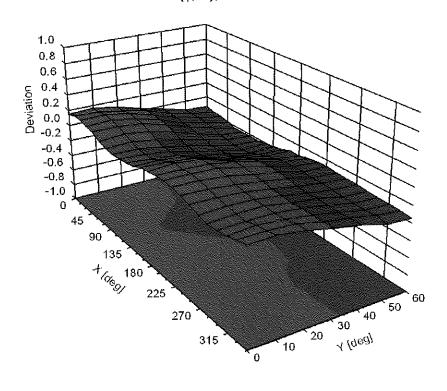


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

## **Conversion Factor Assessment**



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



September 19, 2019

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

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>E</sup> (k=2)
0	1	CW	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10010	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10011	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10012	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10013	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10021	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10023	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 %
10021	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 %
10020	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6%
10032	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (F/IA-DQF 5N, DH1)	Bluetooth	8.01	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10035	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 %
10044	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10040	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6 %
10043	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 %
10061	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 %
10067	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 %
10003	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.94	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 16 Mbps)	WLAN	10.30	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 44 Mbps)	WLAN	11.00	± 9.6 %
10077	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 %
10090	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)	LTE-FDD	5.67	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10102	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
		LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	10.01	± 9.6 %
10105 10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %
10100	UAG	LIL DD (00-1 DIVIN, 100 /0 100, 10 WITE, 01 OTY)	1 - 1 - 1 - 1 - 1	1 0.00	

			I LTE EDD	0.40	1000
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6%
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10157	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 %
10170	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
		LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 4F3A)	LTE-TDD	9.48	± 9.6 %
10173	CAG		LTE-TOD	10.25	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)  LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10175	CAG		LTE-FDD	6.52	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	<del></del>	± 9.6 %
10177	CAL	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73 6.52	± 9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)		6.50	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD		···
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)		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	
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 %
	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10197	LONG				
10197 10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM) IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN WLAN	8.27 8.03	±9.6 % ±9.6 %

10221   CAC   IEEE 802 111 (FIT MINED, 15 MBps, 8F9K)   WLAN   8.07   29.6 %			IEEE OOG 44 (UTAN) - 1 40 0 MN 40 0 MM	WLAN	8.13	± 9.6 %
10222   CAC   IEEE 802 11n (HT Mised, 19 Mbps, 16-CAM)	10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)			
10225   CAC   IEEE 802.11n (HT M96t) 50 Mbps, 64-OAM)						
19225  CAC   IEEE BIZ 11n (HT MINOS), 150 MBps, 84-DAM)   WLAN   8.08   9.9 %   9.0 %   19226   CAD   WITS-FDD (HSPA+)   WCDMA   5.97   4.9 %   19228   CAD   WITS-FDD (HSPA+)   WCDMA   5.97   4.9 %   19.8 %					<del></del>	
10225   CAB   UNITS-FDD (FISPA+)   WCDMA   5.97   ± 9.6 %   1026   CAB   LTE-TDD (SC-FDMA, T RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.49   ± 9.6 %   10227   CAB   LTE-TDD (SC-FDMA, T RB, 1.4 MHz, 64-CAM)   LTE-TDD   10.26   ± 9.6 %   10228   CAB   LTE-TDD (SC-FDMA, T RB, 1.4 MHz, 64-CAM)   LTE-TDD   9.22   ± 9.6 %   10229   CAD   LTE-TDD (SC-FDMA, T RB, 3 MHz, 64-CAM)   LTE-TDD   9.24   ± 9.6 %   10229   CAD   LTE-TDD (SC-FDMA, T RB, 3 MHz, 16-CAM)   LTE-TDD   9.49   ± 9.6 %   10230   CAD   LTE-TDD (SC-FDMA, T RB, 3 MHz, 64-CAM)   LTE-TDD   9.49   ± 9.6 %   10230   CAD   LTE-TDD (SC-FDMA, T RB, 5 MHz, 64-CAM)   LTE-TDD   9.49   ± 9.6 %   10232   CAG   LTE-TDD (SC-FDMA, T RB, 5 MHz, 64-CAM)   LTE-TDD   9.49   ± 9.6 %   10232   CAG   LTE-TDD (SC-FDMA, T RB, 5 MHz, 64-CAM)   LTE-TDD   10.25   ± 9.6 %   10233   CAG   LTE-TDD (SC-FDMA, T RB, 5 MHz, 64-CAM)   LTE-TDD   10.25   ± 9.6 %   10235   CAG   LTE-TDD (SC-FDMA, T RB, 5 MHz, 64-CAM)   LTE-TDD   10.25   ± 9.6 %   10235   CAG   LTE-TDD (SC-FDMA, T RB, 5 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.8 %   10235   CAG   LTE-TDD (SC-FDMA, T RB, 10 MHz, 64-CAM)   LTE-TDD   9.48   ± 9.8 %   10235   CAG   LTE-TDD (SC-FDMA, T RB, 10 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10235   CAG   LTE-TDD (SC-FDMA, T RB, 15 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10235   CAG   LTE-TDD (SC-FDMA, T RB, 15 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10236   CAG   LTE-TDD (SC-FDMA, T RB, 15 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10236   CAG   LTE-TDD (SC-FDMA, T RB, 15 MHz, 64-CAM)   LTE-TDD   9.21   ± 9.6 %   10234   CAB   LTE-TDD (SC-FDMA, T RB, 15 MHz, 64-CAM)   LTE-TDD   9.22   ± 9.6 %   10234   CAB   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 64-CAM)   LTE-TDD   9.22   ± 9.6 %   10234   CAB   LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 64-CAM)   LTE-TDD   9.22   ± 9.6 %   10234   CAB   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.22   ± 9.6 %   10234   CAB   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.29   ± 9.6 %   10234   CAB   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.29						
10229   CAB		CAC	<u> </u>			
10225   CAB	10225	CAB	UMTS-FDD (HSPA+)			
10229   CAB	10226	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)			
10239   CAD   TE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-OAM)	10227	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)			
10230   CAD   LTE-TDD   (SC-PDMA, 1 RB, 3 MHz, 64-CAM)   LTE-TDD   10,25   ±9.6 %   10232   CAG   LTE-TDD   (SC-PDMA, 1 RB, 5 MHz, 18-CAM)   LTE-TDD   9.48   ±9.6 %   10233   CAG   LTE-TDD   (SC-PDMA, 1 RB, 5 MHz, 18-CAM)   LTE-TDD   9.48   ±9.6 %   10234   CAG   LTE-TDD   (SC-PDMA, 1 RB, 5 MHz, 64-CAM)   LTE-TDD   9.48   ±9.6 %   10235   CAG   LTE-TDD   (SC-PDMA, 1 RB, 5 MHz, 64-CAM)   LTE-TDD   9.21   ±9.6 %   10235   CAG   LTE-TDD   (SC-PDMA, 1 RB, 10 MHz, 64-CAM)   LTE-TDD   9.21   ±9.6 %   10235   CAG   LTE-TDD   (SC-PDMA, 1 RB, 10 MHz, 64-CAM)   LTE-TDD   9.21   ±9.6 %   10235   CAG   LTE-TDD   (SC-PDMA, 1 RB, 10 MHz, 64-CAM)   LTE-TDD   9.21   ±9.6 %   10236   CAG   LTE-TDD   (SC-PDMA, 1 RB, 10 MHz, 64-CAM)   LTE-TDD   9.21   ±9.6 %   10239   CAF   LTE-TDD   (SC-PDMA, 1 RB, 15 MHz, 10 CAM)   LTE-TDD   9.21   ±9.6 %   10239   CAF   LTE-TDD   (SC-PDMA, 1 RB, 15 MHz, 64-CAM)   LTE-TDD   9.21   ±9.6 %   10239   CAF   LTE-TDD   (SC-PDMA, 1 RB, 15 MHz, 64-CAM)   LTE-TDD   9.22   ±9.6 %   10230   CAF   LTE-TDD   (SC-PDMA, 1 RB, 15 MHz, 64-CAM)   LTE-TDD   9.22   ±9.6 %   10240   CAF   LTE-TDD   (SC-PDMA, 50% RB, 1 AM Hz, 64-CAM)   LTE-TDD   9.22   ±9.6 %   10240   CAF   LTE-TDD   (SC-PDMA, 50% RB, 1 AM Hz, 64-CAM)   LTE-TDD   9.22   ±9.6 %   10240   CAF   LTE-TDD   (SC-PDMA, 50% RB, 1 AM Hz, 64-CAM)   LTE-TDD   9.46   ±9.6 %   10244   CAB   LTE-TDD   (SC-PDMA, 50% RB, 1 AM Hz, 64-CAM)   LTE-TDD   9.46   ±9.6 %   10245   CAB   LTE-TDD   (SC-PDMA, 50% RB, 1 AM Hz, 64-CAM)   LTE-TDD   9.46   ±9.6 %   10245   CAD   LTE-TDD   (SC-PDMA, 50% RB, 1 AM Hz, 64-CAM)   LTE-TDD   9.46   ±9.6 %   10246   CAD   LTE-TDD   (SC-PDMA, 50% RB, 3 MHz, 64-CAM)   LTE-TDD   9.46   ±9.6 %   10246   CAD   LTE-TDD   (SC-PDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9.46   ±9.6 %   10246   CAD   LTE-TDD   (SC-PDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9.20   ±9.6 %   10246   CAD   LTE-TDD   (SC-PDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9.20   ±9.6 %   10246   CAD   LTE-TDD   (SC-PDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9.20   ±9.6 %   10246   CAD	10228	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	
10232   CAG	10229	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD		
10231   CAO   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-CAM)   LTE-TDD   9,48   ± 9,6 %   10233   CAG   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 0 FCAM)   LTE-TDD   10,25   ± 9,6 %   10234   CAG   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 0 FCAM)   LTE-TDD   10,25   ± 9,6 %   10235   CAG   LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 0 FCAM)   LTE-TDD   9,48   ± 9,6 %   10235   CAG   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 0 FCAM)   LTE-TDD   9,48   ± 9,6 %   10236   CAG   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 0 FCAM)   LTE-TDD   9,48   ± 9,6 %   10236   CAG   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 0 FCAM)   LTE-TDD   9,21   ± 9,6 %   10237   CAG   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 0 FCAM)   LTE-TDD   9,21   ± 9,6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 16 MHz, 0 FCAM)   LTE-TDD   9,21   ± 9,6 %   10238   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 0 FCAM)   LTE-TDD   9,22   ± 9,6 %   10239   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 0 FCAM)   LTE-TDD   9,48   ± 9,6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 0 FCAM)   LTE-TDD   9,48   ± 9,6 %   10240   CAF   LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 0 FCAM)   LTE-TDD   9,48   ± 9,6 %   10244   CAB   LTE-TDD (SC-FDMA, 50% RB, 1 AMHz, 0 FCAM)   LTE-TDD   9,22   ± 9,6 %   10242   CAB   LTE-TDD (SC-FDMA, 50% RB, 1 AMHz, 0 FCAM)   LTE-TDD   9,86   ± 9,6 %   10244   CAB   LTE-TDD (SC-FDMA, 50% RB, 1 AMHz, 0 FCAM)   LTE-TDD   9,86   ± 9,6 %   10244   CAD   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 0 FCAM)   LTE-TDD   9,46   ± 9,6 %   10246   CAD   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 0 FCAM)   LTE-TDD   9,46   ± 9,6 %   10246   CAD   LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 0 FCAM)   LTE-TDD   10,00   ± 9,6 %   10247   CAG   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   10,00   ± 9,6 %   10248   CAG   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9,94   ± 9,6 %   10249   CAG   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9,94   ± 9,6 %   10249   CAG   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9,94   ± 9,6 %   10249   CAG   LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 6-CAM)   LTE-TDD   9,94   ± 9,6 %   10249   CAG   LTE-TDD (SC-FDMA, 50% RB, 16	10230	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10,25	
10232		CAD		LTE-TDD	9.19	± 9.6 %
10233   CAG		<u> </u>		LTE-TDD	9.48	± 9.6 %
10234   CAG   LTE-TDD   (SC-FDMA, 1 RB, 5 MHz, GPSK)   LTE-TDD   9.21   ±9.6 %   10236   CAG   LTE-TDD   (SC-FDMA, 1 RB, 10 MHz, GA-CAM)   LTE-TDD   10.25   ±9.6 %   10237   CAG   LTE-TDD   (SC-FDMA, 1 RB, 10 MHz, GPSK)   LTE-TDD   10.25   ±9.6 %   10237   CAG   LTE-TDD   (SC-FDMA, 1 RB, 10 MHz, GPSK)   LTE-TDD   9.21   ±9.6 %   10238   CAF   LTE-TDD   (SC-FDMA, 1 RB, 15 MHz, 16-CAM)   LTE-TDD   9.48   ±9.6 %   10239   CAF   LTE-TDD   (SC-FDMA, 1 RB, 15 MHz, 16-CAM)   LTE-TDD   9.21   ±9.6 %   10234   CAF   LTE-TDD   (SC-FDMA, 1 RB, 15 MHz, 16-CAM)   LTE-TDD   9.21   ±9.6 %   10240   CAF   LTE-TDD   (SC-FDMA, 1 RB, 15 MHz, 16-CAM)   LTE-TDD   9.21   ±9.6 %   10241   CAB   LTE-TDD   (SC-FDMA, 50% RB, 1.4 MHz, 16-CAM)   LTE-TDD   9.82   ±9.6 %   10241   CAB   LTE-TDD   (SC-FDMA, 50% RB, 1.4 MHz, 6-CAM)   LTE-TDD   9.86   ±9.6 %   10243   CAB   LTE-TDD   (SC-FDMA, 50% RB, 1.4 MHz, CPSK)   LTE-TDD   9.86   ±9.6 %   10243   CAB   LTE-TDD   (SC-FDMA, 50% RB, 3.4 MHz, CPSK)   LTE-TDD   9.46   ±9.6 %   10244   CAB   LTE-TDD   (SC-FDMA, 50% RB, 3.4 MHz, CPSK)   LTE-TDD   9.46   ±9.6 %   10247   CAB   LTE-TDD   (SC-FDMA, 50% RB, 3.6 MHz, L9-CAM)   LTE-TDD   10.06   ±9.6 %   10247   CAB   LTE-TDD   (SC-FDMA, 50% RB, 3.6 MHz, CPSK)   LTE-TDD   10.06   ±9.6 %   10247   CAB   LTE-TDD   (SC-FDMA, 50% RB, 3.6 MHz, CPSK)   LTE-TDD   10.06   ±9.6 %   10247   CAB   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, CPSK)   LTE-TDD   9.90   ±9.6 %   10248   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.91   ±9.6 %   10248   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.92   ±9.6 %   10248   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.92   ±9.6 %   10259   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.24   ±9.6 %   10254   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.24   ±9.6 %   10255   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.24   ±9.6 %   10255   CAG   LTE-TDD   (SC-FDMA, 50% RB, 5.6 MHz, GPSK)   LTE-TDD   9.94   ±9.6 %   10255   C				LTE-TDD	10.25	± 9.6 %
10236   CAG				LTE-TDD	9.21	±9.6 %
10236   CAG		L	LTE-TOD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10237   CAG			LTE-TDD (SC-EDMA 1 RB 10 MHz 64-QAM)		10.25	
10238   CAF						
10239	1					
10240   CAF		1				
10241   CAB						
10242   CAB						
10244   CAB		1				
10244   CAD			1	1		
10245   CAD						
10246   CAD						
10247   CAG		·				
10248   CAG		CAD				
TO249   CAG   LTE-TDD   SC-FDMA, 50% RB, 5 MHz, QPSK)   LTE-TDD   9.29   ± 9.6 %		CAG				
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, QPSK)   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, 16-QAM)   LTE-TDD   10.14   ± 9.6 %   10255   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)   LTE-TDD   10.14   ± 9.6 %   10256   CAF   LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)   LTE-TDD   9.90   ± 9.6 %   10256   CAF   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)   LTE-TDD   9.96   ± 9.6 %   10257   CAB   LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)   LTE-TDD   9.96   ± 9.6 %   10258   CAB   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)   LTE-TDD   10.08   ± 9.6 %   10258   CAB   LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)   LTE-TDD   9.934   ± 9.6 %   10258   CAB   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)   LTE-TDD   9.934   ± 9.6 %   10256   CAD   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.98   ± 9.6 %   10260   CAD   LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)   LTE-TDD   9.924   ± 9.6 %   10262   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.931   ± 9.6 %   10263   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.83   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.23   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.23   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.23   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.23   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.930   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)   LTE-TDD   9.921   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   10.06   ± 9.6 %   10267   CAG   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)   LTE-TDD   10.06   ± 9.6 %   10266   CAG   LTE-T	10248	CAG				
TO251   CAG	10249	CAG				
10252   CAG	10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)			
10253	10251	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)			
10254   CAF	10252	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	
10255	10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 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   9.97   ± 9.6 %   10262   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GA-QAM)   LTE-TDD   9.24   ± 9.6 %   10262   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)   LTE-TDD   9.24   ± 9.6 %   10262   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GA-QAM)   LTE-TDD   9.24   ± 9.6 %   10264   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GA-QAM)   LTE-TDD   10.16   ± 9.6 %   10265   CAG   LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GA-QAM)   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, GA-QAM)   LTE-TDD   9.92   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, GA-QAM)   LTE-TDD   9.92   ± 9.6 %   10266   CAG   LTE-TDD (SC-FDMA, 100% RB, 10 MHz, GA-QAM)   LTE-TDD   9.30   ± 9.6 %   10268   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, GA-QAM)   LTE-TDD   10.06   ± 9.6 %   10268   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, GA-QAM)   LTE-TDD   10.06   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, GA-QAM)   LTE-TDD   10.13   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, GA-QAM)   LTE-TDD   10.13   ± 9.6 %   10270   CAF   LTE-TDD (SC-FDMA, 100% RB, 15 MHz, GA-QAM)   LTE-TDD   10.13   ± 9.6 %   10273   CAA   PHS (QPSK)   RMS 4MHz, ROHORD   RMS 15 MHz, GA-QAM)   LTE-TDD   10.13   ± 9.6 %   10273   CAA   PHS (QPSK, BW 884MHz, ROHORD   RMS 15 MHz, GA-QAM)   LTE-TDD   10.13   ± 9.6 %   10273   CAA   PHS (QPSK, BW 884MHz, ROHORD   SAB   SAB   CDMA2000, RC3, SO55, Full Rate   CDMA2000   3.91   ± 9.6 %   10293   AAB   CDM	10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	±9.6%
10256   CAB	10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	±9.6%
10257   CAB	10256	CAB		LTE-TDD	9.96	± 9.6 %
10258   CAB		CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10259			LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 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         CAG         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, 64-QAM)         LTE-TDD         9.23         ± 9.6 %           10265         CAG         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.22         ± 9.6 %           10266         CAG         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         9.30         ± 9.6 %           10267         CAG         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         9.30         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.06         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QFSK)         LTE-TDD         10.13         ± 9.6 %           10278         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz,		+		LTE-TDD	9.98	± 9.6 %
10261   CAD						± 9.6 %
10262         CAG         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, 15 MHz, GPSK)         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, QPSK)         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 Re				LTE-TDD	9.24	± 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, 64-QAM)         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         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 Rel8.4)         WCDMA         3.96         ± 9.6 %           10278         CAA         PHS (QPSK)         PHS				LTE-TDD		
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         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 Rel8.4)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS						
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         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 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 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         <						
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, SO35, 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, SO32, Full Rate         CDMA2000         3.39         ± 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, 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, Tull Rate         CDMA2000         12.49         ± 9.6 %						
10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %						
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 %						
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 %			LIE-TOD (SC-PDWA, 100% KB, 15 MHz, QPSK)			
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 %						
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 %	1					
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 %		AAB	CDMA2000, RC3, SO55, Full Rate			± 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				± 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 %		AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10298 AAD LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) LTE-FDD 5.72 ± 9.6 %				LTE-FDD	5.81	± 9.6 %
				LTE-FDD	5.72	± 9.6 %
	10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

40000	A A D	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10300	AAD	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WiMAX	12.57	± 9.6 %
10302	AAA	IEEE 802.16e WIMAX (25.16, 5/16, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6 %
10303	AAA	IEEE 802.16e WIMAX (31.13, 511s, 10MHz, 64QAM, 1000)	WiMAX	11.86	± 9.6 %
10304	AAA	IEEE 802.166 WIMAX (24:15, 5HS, 10WHZ, 64QAM, FOSC)	WIMAX	15.24	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	14.67	± 9.6 %
10306	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WIMAX	14.49	± 9.6 %
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WIMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)		14.58	± 9.6 %
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)	WIMAX		
10310	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	IDEN 1:6	iDEN	13.48	± 9.6 %
10315	AAB	IEEE 802,11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	±9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)	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 dc)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	WLAN	8.53	± 9.6 %
10402	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
		CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.77	± 9.6 %
10404	AAB	1	CDMA2000	5.22	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	LTE-TDD	7.82	± 9.6 %
10410	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)		8.54	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic WLAN	1.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)			
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	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 Sub)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
10450	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10451	AAD	Validation (Square, 10ms, 1ms)	Test	10.00	± 9.6 %
		IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)	WLAN	8.63	± 9.6 %
10456	AAB	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10457	AAA		CDMA2000	6.55	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	8.25	± 9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)			
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA LTE-TDD	2.39 7.82	± 9.6 % ± 9.6 %
		TELEVITATION OF THE STANDARD O		1 (X/	1 TMN %
10461	AAB AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Sub) LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 %

10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	±9.6%
10484	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	±9.6%
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %
10488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %
10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10499	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	±9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TOD	8.41	± 9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10493		LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, GF3R, 0L 3db)	LTE-TDD	8.37	± 9.6 %
10495	AAF		LTE-TDD	8.54	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	7.67	± 9.6 %
10497	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)			
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TOD	8.40	±9.6%
10499	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	±9.6%
10500	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
10502	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	±9.6%
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 16 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
		IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10523	AAB		WLAN	8.27	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN		± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.42 8.21	± 9.6 % ± 9.6 %
10527			: WILAN	1 × 71	wn /

40500	A A D	IEEE 000 44 as MEE (20MHz, MCS2, 00pg do)	WLAN	8.36	± 9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.43	±9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.29	± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.38	± 9.6 %
10533	AAB	IEEE 802.11ac WIFI (20MHz, MCS8, 99pc dc)	WLAN	8.45	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.45	± 9.6 %
10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)		8.32	± 9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN		
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	±9.6%
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	± 9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	±9.6%
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc dc)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	±9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	±9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10568	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	± 9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	± 9.6 %
10570	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
		IEEE 802.11b WiFi 2.4 GHz (DSSS, 3.5 Mbps, 50pc dc)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10575	AAA	IEEE 802.11g WIFI 2.4 GHZ (DSSS-OPDM, 6 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10576	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10577	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OPDM, 12 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10578	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10579	AAA	1EEE 002.11g WIFI 2.4 GHz (DOSS-OFDW, 24 Wibps, 30pc do)	WLAN	8.76	± 9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)			
10584	AAB	IEEE 802.11a/h WIFI 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	± 9.6 %
10593	////				
10593 10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN WLAN	8.74	± 9.6 % ± 9.6 %

	T =	THE COURT OF THE PROPERTY OF T	WLAN	071	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)		8.50	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN		
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 % ± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)	WLAN	8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.81	±9.6%
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN	8.58	±9.6%
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	±9.6%
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.68	± 9.6 %
		IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %
10624	AAB		WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.83	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.88	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.71	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)		8.85	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN WLAN		
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)		8.72	±9.6%
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	± 9.6 %
10646	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3,45	± 9.6 %
10652	AAE	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAE	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 %
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
	AAA	Pulse Waveform (200Hz, 10%)	Test	6.99	± 9.6 %
10659		Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10660	AAA		Test	2.22	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test		
10662	AAA	Pulse Waveform (200Hz, 80%)		0.97	± 9.6 %
40000					
10670 10671	AAA	Bluetooth Low Energy IEEE 802.11ax (20MHz, MCS0, 90pc dc)	Bluetooth WLAN	9.09	± 9.6 % ± 9.6 %

10672 10673 10674	AAA				
10674		IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	±9.6 %
	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10075	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 %
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 %
10682	AAA	IEEE 802,11ax (20MHz, MCS11, 90pc dc)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS1, 99pc dc)	WLAN	8.26	± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc dc)	WLAN	8.28	±9.6%
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.45	± 9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.29	± 9.6 %
10689		IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	± 9.6 %
	AAA		WLAN	8.29	± 9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.25	± 9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc dc)		8.29	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN WLAN	8.25	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc dc)			
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	±9.6%
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	± 9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.56	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc dc)	WLAN	8.69	± 9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc dc)	WLAN	8.66	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc dc)	WLAN	8.32	± 9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc dc)	WLAN	8.29	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.33	± 9.6 %
		IEEE 802.11ax (40MHz, MCS7, 99pc dc)	WLAN	8.26	± 9.6 %
10714	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc dc)	WLAN	8.45	± 9.6 %
10715	AAA		WLAN	8.30	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc dc)	WLAN	8.48	± 9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc dc)			
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.24	± 9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc dc)	WLAN	8.81	± 9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	± 9.6 %
10721	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.76	± 9.6 %
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10724	AAA	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	± 9.6 %
10725	AAA	IEEE 802.11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10726	AAA	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %
10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc dc)	WLAN	8.65	± 9.6 %
	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc dc)	WLAN	8.64	± 9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc dc)	WLAN	8.67	± 9.6 %
10729		IEEE 802.11ax (80MHz, MCS0, 99pc dc)	WLAN	8.42	±9.6 %
10730					
10730 10731	AAA				
10730 10731 10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc dc)	WLAN	8.46	± 9.6 %
10730 10731					

10737	8.27 8.36 8.42	± 9.6 % ± 9.6 %
10738		1 ± 9.6 %
10739	8.42	1000
10740		± 9.6 %
10741	8,29	± 9.6 %
10742	8.48	± 9.6 %
10743	8.40	± 9.6 %
107744	8.43	± 9.6 %
10745	8.94	± 9.6 %
10746	9.16	± 9.6 %
10747	8.93	± 9.6 %
10748	9.11	± 9.6 %
10749	9.04	± 9.6 %
10750	8.93	± 9.6 %
10751	8.90	± 9.6 %
10752	8.79	± 9.6 %
10753	8.82	± 9.6 %
10754	8.81	± 9.6 %
10755	9.00	± 9.6 %
10756	8.94	± 9.6 %
10757	8.64	± 9.6 %
10758	8.77	± 9.6 %
10759	8.77	± 9.6 %
10760	8.69	± 9.6 %
10761	8.58	± 9.6 %
10762 AAA IEEE 802.11ax (160MHz, MCS7, 99pc dc) WLAN 8 10763 AAA IEEE 802.11ax (160MHz, MCS8, 99pc dc) WLAN 8 10764 AAA IEEE 802.11ax (160MHz, MCS9, 99pc dc) WLAN 8 10765 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN 8 10766 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN 8 10767 AAC IEEE 802.11ax (160MHz, MCS11, 99pc dc) WLAN 8 10768 AAA IEEE 802.11ax (160MHz, MCS11, 99pc dc) WLAN 8 10767 AAC 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10768 AAC 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10769 AAC 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10770 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10771 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10772 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10772 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10773 AAC 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10774 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10775 AAB 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10776 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10776 AAC 5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10777 AAB 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10777 AAB 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10779 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10779 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10778 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD	8.49	
10763 AAA IEEE 802.11ax (160MHz, MCS8, 99pc dc) WLAN E 10764 AAA IEEE 802.11ax (160MHz, MCS9, 99pc dc) WLAN E 10765 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN E 10766 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN E 10767 AAC SG NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10768 AAC SG NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10769 AAC SG NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10770 AAC SG NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10771 AAC SG NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10772 AAC SG NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10773 AAC SG NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10774 AAC SG NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10775 AAB SG NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10776 AAC SG NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10776 AAC SG NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10776 AAC SG NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10776 AAC SG NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10776 AAC SG NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10777 AAB SG NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10778 AAC SG NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10779 AAB SG NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10780 AAC SG NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10781 AAC SG NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10782 AAC SG NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10783 AAC SG NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10784 AAC SG NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10785 AAC SG NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10786 AAC SG NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10787 AAC SG NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) SG NR FR1 TDD T 10788 AAC SG NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 1	8.58	± 9.6 %
10764 AAA IEEE 802.11ax (160MHz, MCS9, 99pc dc) WLAN 8 10765 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN 8 10766 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN 8 10767 AAC 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10768 AAC 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10769 AAC 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10770 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10771 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10772 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10773 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10774 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10774 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10774 AAC 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10774 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10775 AAB 5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10776 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10776 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10777 AAB 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10777 AAB 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10779 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10779 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10780 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10782 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10783 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10784 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10784 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10786 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AA	8.49	
10765 AAA IEEE 802.11ax (160MHz, MCS10, 99pc dc) WLAN E 10766 AAA IEEE 802.11ax (160MHz, MCS11, 99pc dc) WLAN E 10767 AAC 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 7 10768 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 7 10769 AAC 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10770 AAC 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10771 AAC 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10771 AAC 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10772 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10773 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10774 AAC 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10775 AAB 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10775 AAB 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10776 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10777 AAB 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10779 AAB 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10780 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10780 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10780 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10784 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10786 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AAC 5G NR (CP-OFDM,	8.53	± 9.6 %
10766         AAA         IEEE 802.11ax (160MHz, MCS11, 99pc dc)         WLAN         8           10767         AAC         5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         7           10768         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10769         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10770         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10771         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10772         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10771         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10774         AAC         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD </td <td>8.54</td> <td></td>	8.54	
10767 AAC 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 7 10768 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10769 AAC 5G NR (CP-OFDM, 1 RB, 16 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10770 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10771 AAC 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10772 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10773 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10773 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10774 AAC 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10775 AAB 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10776 AAC 5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10776 AAC 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10777 AAB 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10778 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10779 AAB 5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 8 10780 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10781 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10782 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10783 AAC 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10784 AAC 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10785 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10786 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10786 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10786 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10786 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD 10788 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) 5G NR FR1 TDD	8.54	
10768         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10769         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10770         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10771         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10772         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10774         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10775         AAB         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10776         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         5           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	8.51	± 9.6 %
10769         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10770         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10771         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10772         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10775         AAB         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	7.99	
10770         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10771         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10772         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)		± 9.6 %
10771         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10772         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)		
10772         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD		
10773         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz) </td <td></td> <td></td>		
10774         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz		
10775         AAB         5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15		
10776         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK,		
10777         AAB         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK,		
10778         AAC         5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8		
10779         AAB         5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6           10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6		
10780         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8	8.34	
10781         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8	8.42	
10782         AAC         5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8		
10783         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8	8.38	
10784         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         8		
10785         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6           10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         6		
10786         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)         5G NR FR1 TDD           10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD		
10787         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         3           10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         3           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD         3		
10788         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)         5G NR FR1 TDD           10789         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)         5G NR FR1 TDD		
10789 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) 5G NR FR1 TDD		
TANTON TAKE TROUBLED OF BUILDING FORMS OF STATE		
	_	
10799 AAC 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz) 5G NR FR1 TDD	7.93	± 9.6 %

10801         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)           10802         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)           10803         AAC         5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)           10805         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)           10806         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)           10809         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)           10810         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)           10811         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)           10812         AAC         5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)           10813         AAC         5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)           10814         AAC         5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)           10817         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)           10818         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823 <th>5G NR FR1 TDD 5G NR FR1 TDD 2) 5G NR FR1 TDD</th> <th>7.89 7.87 7.93 8.34 8.37 8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73</th> <th>± 9.6 %  ± 9.6 %</th>	5G NR FR1 TDD 5G NR FR1 TDD 2) 5G NR FR1 TDD	7.89 7.87 7.93 8.34 8.37 8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	± 9.6 %  ± 9.6 %
10803 AAC 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz) 10805 AAC 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz) 10806 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz) 10809 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz) 10810 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz) 10811 AAC 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz) 10812 AAC 5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz) 10813 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 10814 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) 10815 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) 10820 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) 10821 AAC 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz) 10822 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 10823 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz) 10824 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 10825 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 10826 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 10827 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 10828 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 10830 AAC 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz) 10831 AAC 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz) 10832 AAC 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz) 10833 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10834 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10835 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10836 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 10837 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10838 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD 2) 5G NR FR1 TDD 3) 5G NR FR1 TDD 4) 5G NR FR1 TDD 5] 5G NR FR1 TDD	7.93 8.34 8.37 8.34 8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	± 9.6 % ± 9.6 %
10805         AAC         5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)           10806         AAC         5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)           10809         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)           10810         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)           10812         AAC         5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)           10817         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)           10818         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10819         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10826         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD 2) 5G NR FR1 TDD 30 5G NR FR1 TDD 41 5G NR FR1 TDD	8.34 8.37 8.34 8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %
10806 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz) 10809 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz) 10810 AAC 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz) 10812 AAC 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz) 10817 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 10818 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 10819 AAC 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz) 10820 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) 10821 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) 10822 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) 10823 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 10824 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 10825 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) 10826 AAC 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) 10827 AAC 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz) 10828 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 10830 AAC 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz) 10831 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz) 10832 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz) 10833 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10834 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10835 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10836 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 10837 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 10838 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD 2) 5G NR FR1 TDD 30 5G NR FR1 TDD 41 5G NR FR1 TDD	8.37 8.34 8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %
10809         AAC         5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)           10810         AAC         5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)           10812         AAC         5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)           10817         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)           10818         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10819         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           1	5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 2) 5G NR FR1 TDD 3 5G NR FR1 TDD 4 5G NR FR1 TDD 5 5G NR FR1 TDD	8.34 8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %
10810 AAC 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz) 10812 AAC 5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz) 10817 AAC 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz) 10818 AAC 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz) 10819 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) 10820 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) 10821 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) 10822 AAC 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz) 10823 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 10824 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) 10825 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz) 10826 AAC 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) 10827 AAC 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz) 10828 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) 10830 AAC 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz) 10831 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz) 10832 AAC 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz) 10833 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10834 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10835 AAC 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) 10836 AAC 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) 10837 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) 10837 AAC 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz) 10837 AAC 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz) 10840 AAC 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 2) 5G NR FR1 TDD 3 5G NR FR1 TDD 4 5G NR FR1 TDD 5 5G NR FR1 TDD	8.34 8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 %
10812         AAC         5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)           10817         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)           10818         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10819         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10826         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10	5G NR FR1 TDD 5G NR FR1 TDD 2) 5G NR FR1 TDD 30 5G NR FR1 TDD 41 5G NR FR1 TDD	8.35 8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 %
10817         AAC         5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)           10818         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10819         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           108	5G NR FR1 TDD 2) 5G NR FR1 TDD 30	8.35 8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10818         AAC         5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)           10819         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836	2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 30 5G NR FR1 TDD 41 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	8.34 8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10819         AAC         5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)           10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10837 <td>2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 30 NR FR1 TDD 412) 5G NR FR1 TDD 45G NR FR1 TDD 56G NR FR1 TDD</td> <td>8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73</td> <td>±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %</td>	2) 5G NR FR1 TDD 30 NR FR1 TDD 412) 5G NR FR1 TDD 45G NR FR1 TDD 56G NR FR1 TDD	8.33 8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10820         AAC         5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)           10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839	50 SG NR FR1 TDD 20 SG NR FR1 TDD 21 SG NR FR1 TDD 22 SG NR FR1 TDD 23 SG NR FR1 TDD 24 SG NR FR1 TDD 25 SG NR FR1 TDD 26 SG NR FR1 TDD 27 SG NR FR1 TDD 28 SG NR FR1 TDD 29 SG NR FR1 TDD 20 SG NR FR1 TDD 20 SG NR FR1 TDD 21 SG NR FR1 TDD 22 SG NR FR1 TDD 23 SG NR FR1 TDD 24 SG NR FR1 TDD 25 SG NR FR1 TDD	8.30 8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840	5G NR FR1 TDD 5G NR FR1 TDD 5C) 5G NR FR1 TDD 5C] 5G NR FR1 TDD	8.41 8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
10821         AAC         5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)           10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840	2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 4) 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	8.41 8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10822         AAC         5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)           10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 42) 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	8.36 8.39 8.41 8.42 8.43 8.40 7.63 7.73	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10823         AAC         5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)           10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	2) 5G NR FR1 TDD 4) 5G NR FR1 TDD	8.39 8.41 8.42 8.43 8.40 7.63 7.73	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10824         AAC         5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)           10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 2) 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	8.41 8.42 8.43 8.40 7.63 7.73	± 9.6 % ± 9.6 % ± 9.6 %
10825         AAC         5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)           10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	2   5G NR FR1 TDD     3   5G NR FR1 TDD     5   5   5   5   5   5     5   5   5	8.42 8.43 8.40 7.63 7.73	± 9.6 % ± 9.6 %
10827         AAC         5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)           10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	z) 5G NR FR1 TDD z) 5G NR FR1 TDD Hz) 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	8.43 8.40 7.63 7.73	± 9.6 %
10828         AAC         5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)           10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	z) 5G NR FR1 TDD Hz) 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	8.43 8.40 7.63 7.73	
10829         AAC         5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kł           10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	Hz) 5G NR FR1 TDD	8.40 7.63 7.73	
10830         AAC         5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)           10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD 5G NR FR1 TDD 5G NR FR1 TDD	7.63 7.73	
10831         AAC         5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)           10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD 5G NR FR1 TDD	7.73	± 9.6 %
10832         AAC         5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)           10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD		± 9.6 %
10833         AAC         5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)           10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)		7.74	± 9.6 %
10834         AAC         5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)           10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	I JUNINI IUU	7.70	± 9.6 %
10835         AAC         5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)           10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	± 9.6 %
10836         AAC         5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)           10837         AAC         5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)           10839         AAC         5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)           10840         AAC         5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10837 AAC 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz) 10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz) 10840 AAC 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)		7.66	± 9.6 %
10839 AAC 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz) 10840 AAC 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD		± 9.6 %
10840 AAC 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	
	5G NR FR1 TDD	7.70	± 9.6 %
	5G NR FR1 TDD	7.67	± 9.6 %
10841 AAC 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	± 9.6 %
10843 AAC 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz		8.49	± 9.6 %
10844 AAC 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz		8.34	± 9.6 %
10846 AAC 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz		8.41	± 9.6 %
10854 AAC 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kH	z) 5G NR FR1 TDD	8.34	± 9.6 %
10855 AAC 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kH	z) 5G NR FR1 TDD	8.36	± 9.6 %
10856 AAC 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kH		8.37	± 9.6 %
10857 AAC 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kH		8.35	± 9.6 %
10858 AAC 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kH		8.36	± 9.6 %
10859 AAC 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kH	z) 5G NR FR1 TDD	8.34	± 9.6 %
10860 AAC 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kH		8.41	± 9.6 %
10861 AAC 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kH		8.40	± 9.6 %
10863 AAC 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kH	lz) 5G NR FR1 TDD	8.41	± 9.6 %
10864 AAC 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kH		8.37	± 9.6 %
10865 AAC 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 k		8.41	± 9.6 %
10866 AAC 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kH		5.68	± 9.6 %
10868 AAC 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 3		5.89	± 9.6 %
10869 AAD 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 k		5.75	± 9.6 %
10870 AAD 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 1	,	5.86	± 9.6 %
10871 AAD 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120		5.75	± 9.6 %
10872 AAD 5G NR (DFT-s-OFDM, 100 MHz, 16QAM, 120		6.52	± 9.6 %
10873 AAD 5G NR (DFT-s-OFDM, 100 MHz, 1		6.61	± 9.6 %
	,	6.65	± 9.6 %
		7.78	± 9.6 %
	<u></u>	8.39	± 9.6 %
10876 AAD 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120		7.95	± 9.6 %
10877 AAD 5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kH		8.41	± 9.6 %
10878 AAD 5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 12			
10879 AAD 5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kH		8.12	± 9.6 %
10880 AAD 5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 12		8.38	±9.6%
10881 AAD 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz, QPSK, QP		5.75	±9.6%
10882 AAD 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 12		5.96	± 9.6 %
10883 AAD 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 k		6.57	± 9.6 %
10884 AAD 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 1	120 kHz) 5G NR FR2 TDD	6.53	
10885 AAD 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 k	(Hz) 5G NR FR2 TDD	6.61	± 9.6 % ± 9.6 %

w		TO THE COOK OF TO THE CACOM 400 MIN	LEC NO ED2 TOD	6.65	±9.6 %
10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 % ± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD 5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)		8.13	
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAA	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAA	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10899	AAA	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAA	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10901	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10902	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10904	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAA	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10906	AAA	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10907	AAA	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAA	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAA	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
10910	AAA	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10911	AAA	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10912	AAA	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10913	AAA	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10914	AAA	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 9.6 %
10915	AAA	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10916	AAA	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	±9.6%
10917	AAA	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10918	AAA	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10919	AAA	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10920	AAA	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10921	AAA	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10922	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 9.6 %
10923	AAA	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6 %
10924	AAA	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10925	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 9.6 %
10926	AAA	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10927	AAA	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10927	AAA	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10928	AAA	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10929	AAA	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
ļ		5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.6 %
10931	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10932	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10933	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QFSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10934	AAA		5G NR FR1 FDD	5.51	± 9.6 %
10935	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10936	AAA	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10937	AAA	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10938	AAA		5G NR FR1 FDD	5.82	± 9.6 %
10939	AAA	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10940	AAA	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10941	AAA	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)			± 9.6 %
10942	AAA	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD 5G NR FR1 FDD	5.85	
10943	AAA	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)		5.95	±9.6%
10944	AAA	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	±9.6%
10945	AAA	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10946	AAA	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10947	AAA	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10948	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10949	AAA	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10950	AAA	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	±9.6 %
		5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 9.6 %
10951	AAA				
	AAA AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)  5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD 5G NR FR1 FDD	8.25 8.15	± 9.6 % ± 9.6 %

EX3DV4- SN:7551 September 19, 2019

10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 9.6 %
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 9.6 %
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 9.6 %
10957	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 9.6 %
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	± 9.6 %
10960	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	± 9.6 %
10961	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	± 9.6 %
10962	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	±9.6%
10963	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	±9.6 %
10964	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	± 9.6 %
10965	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	± 9.6 %
10966	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	±9.6%
10967	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	±9.6 %
10968	AAA	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	±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





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Client

**PC Test** 

Certificate No: EX3-7410\_Jul19/2

Accreditation No.: SCS 0108

### CALIBRATION CERTIFICATE (Replacement of No: EX3-7410\_Jul19)

Object

EX3DV4 - SN:7410

Calibration procedure(s)

QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7

Calibration procedure for dosimetric E-field probes

Calibration date:

July 16, 2019

16-67-201

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 Juп-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
Signature
Laboratory Technician

Approved by:

Katja Pokovic
Technical Manager

Issued: June 3, 2020

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

### **Calibration Laboratory of**

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst
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Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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Glossary:

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

ConvF

sensitivity in TSL / NORMx,y,z

DCP

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

Certificate No: EX3-7410\_Jul19/2

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).

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

**Basic Calibration Parameters** 

Dagio Campiation : a.a.	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	

on Doculto for Modulation Personse

UID	ion Results for Modulation 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	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%)	X	15.00	85.70	17.13	6.99	80.0	± 2.7 %	± 9.6 %
AAA	, , , , ,	Y	15.00	94.26	21.82		80.0		
		Z	15.00	87.46	18.36		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	84.98	15.02	3.98	95.0	± 1.4 %	± 9.6 %
AAA	1	Y	15.00	105.63	25.93		95.0		<u> </u>
		Z	15.00	86.91	16.30		95.0		
10355-	Pulse Waveform (200Hz, 60%)	Х	0.58	63.48	6.70	2.22	120.0	± 1.4 %	± 9.6 %
AAA		Y	15.00	128.91	35.05		120.0	]	ļ
		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	]	ļ
		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		Υ	2.69	71.62	17.77	<u> </u>	150.0	]	
		Z	2.10	66.95	14.95		150.0	<u></u>	
10396-	64-QAM Waveform, 100 kHz	Х	2,85	69.56	18.52	3.01	150.0	± 0.7 %	± 9.6 %
AAA		Y	3.27	72.43	19.82		150.0	1	
		Z	2.96	69.30	18.13		150.0		
10399-	64-QAM Waveform, 40 MHz	Х	3.51	67.28	15.99	0.00	150.0	± 2.2 %	± 9.6 %
AAA		Υ	3.73	68.43	16.68		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		Υ	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 E<sup>2</sup>-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:7410

#### **Sensor Model Parameters**

Jenson	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⁻²	T5 V <sup>-1</sup>	Т6
	44.0	341.99	38.28	7.82	0.67	5.04	0.00	0.55	1.01
<del>-</del>	48.3	362.63	36.17	12.06	0.12	5.10	0.87	0.38	1.01
7	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

### 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) <sup>F</sup>	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 uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency pand. 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 ( $\epsilon$  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>G</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.

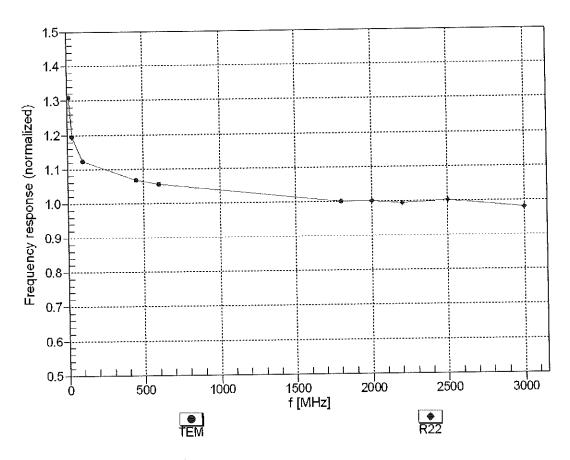
<sup>6</sup> MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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 (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters.

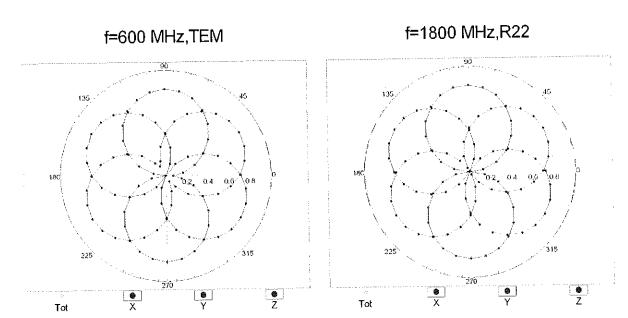
G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the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

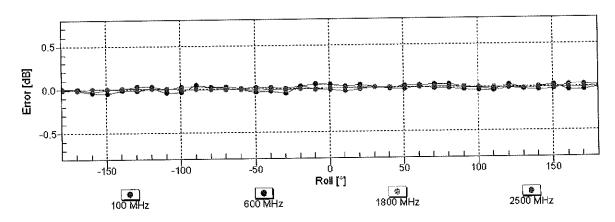
# Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



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

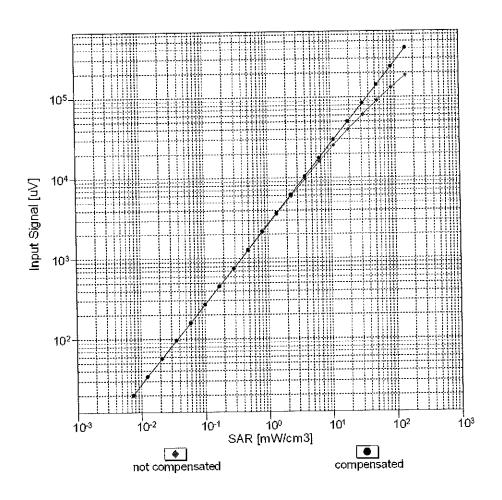
# Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

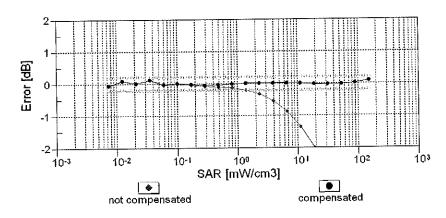




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

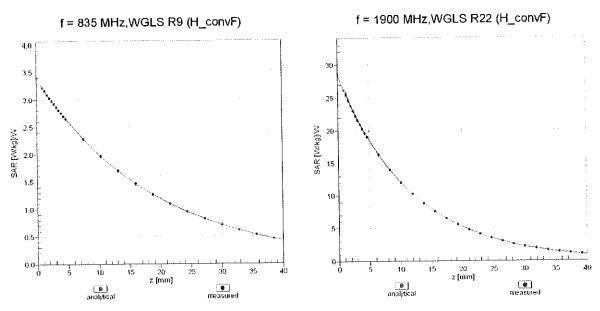
### Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)



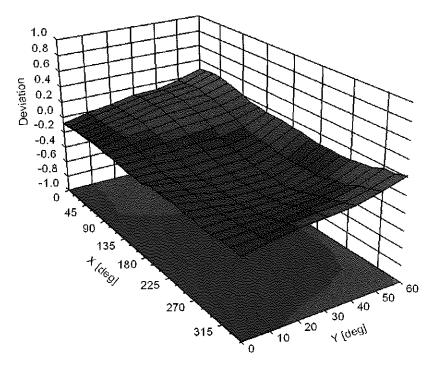


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

### **Conversion Factor Assessment**



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



Certificate No: EX3-7410\_Jul19/2

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

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>E</sup> (k=2)
)		cw	CW	0.00	± 4.7 %
0010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
0011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
0012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
0013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
0021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
0023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
0024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6,56	± 9.6 %
0025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
0026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
0027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
0028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
0029	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 %
0031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
0032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
0033	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 %
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 %
10039	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10044		DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10049	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 9
10056	CAA	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6
10058	DAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 °
10059	CAB	TEEE 802.110 WIFT 2.4 GHz (DGGG, Z Midps)	WLAN	2.83	± 9.6
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	3.60	± 9.6 °
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	8.68	± 9.6
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.63	± 9.6
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	9.09	± 9.6
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.00	± 9.6
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.38	±9.6
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	10.12	± 9.6
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)		10.12	± 9.6
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN WLAN	10.24	± 9.6
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)			± 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	
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 ± 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	
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	9.29	± 9.6
10104	CAG		LTE-TDD	9.97	± 9.6
10105	CAG		LTE-TDD	10.01	± 9.6
10103	CAG		LTE-FDD	5.80	± 9.6

			1.75 500	0.40	+06%
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	1EEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
<u> </u>	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10140		LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 WILL, 04-QAW)	LTE-FDD	5.76	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	6.41	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.72	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.42	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6,60	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)		9.28	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD		± 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)	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 %
10109	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
		LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10171	AAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10173	CAG	LIE-TOD (SC-PDMA, 1 RB, 20 MHz, 10-QAM)	LTE-TDD	10.25	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	5.72	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	6.52	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	5.73	± 9.6 %
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)		6.50	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD		± 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	
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 %
10194	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10196	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10197		IEEE 802.11n (HT Mixed, 35 Mbps, 10-QAM)	WLAN	8.27	± 9.6 %
10198	CAC		WLAN	8.03	± 9.6 %
10219	CAC	IEEE OUZ. I III (FIT MIXED, T.Z MUDPS, DESTA)	¥1		

			1 10/1 001	T 0 12 T	± 9.6 %
10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8,48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	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 %
10235	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10237	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10238		LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 13 MHz, QF3R)  LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10241	CAB	LIE-IDD (OC EDMA 500/ DD 44 MHZ, 10-QAM)	LTE-TDD	9.86	± 9.6 %
10242	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.46	± 9.6 %
10243	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	10.06	± 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	9.30	± 9.6 %
10246	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)		9.91	± 9.6 %
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	10.09	± 9.6 %
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TOD		± 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	
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	CAG		LTE-TDD	9.83	± 9.6 %
10263	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10263	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 %
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10266	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
	CAG	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, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9,58	± 9.6 %
10270		UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10275	CAB		PHS	11.81	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	12.18	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	CDMA2000	3.91	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000 CDMA2000	3.46	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.40	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000 CDMA2000	3.50	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate			± 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 %
10000	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)  IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)  IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, GPSK, PUSC)  IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3)  LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK, AMC 2x3  LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)  IDEN 1:3  IDEN 1:6  IEEE 802.11g WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)  IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 1 MHz  G4-QAM Waveform, 100 KHz  64-QAM Waveform, 100 KHz  64-QAM Waveform, 100 MHz  IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000, RC3, SO32, SCHO, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	LTE-FDD WiMAX UTE-FDD IDEN IDEN IDEN IDEN IDEN IDEN IDEN ID	6.60 12.03 12.57 12.52 11.86 15.24 14.67 14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82 8.54	± 9.6 % ± 9.6 %
IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)   IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3   LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   IDEN 1:3   IDEN 1:6   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)   IEEE 802.11g WiFi 2.4 GHz (DFDM, 6 Mbps, 96pc dc)   IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)   Pulse Waveform (200Hz, 10%)   Pulse Waveform (200Hz, 20%)   Pulse Waveform (200Hz, 40%)   Pulse Waveform (200Hz, 40%)   Pulse Waveform (200Hz, 80%)   QPSK Waveform, 1 MHz   QPSK Waveform, 1 MHz   QPSK Waveform, 10 MHz   G4-QAM Waveform, 40 MHz   G4-QAM Waveform, 40 MHz   IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (80MHz, 64-QA	WIMAX LTE-FDD IDEN IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Coneric	12.57 12.52 11.86 15.24 14.67 14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 %  ± 9.6 %
IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3   LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   IDEN 1:3   IDEN 1:6   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)   IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)   IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)   Pulse Waveform (200Hz, 10%)   Pulse Waveform (200Hz, 20%)   Pulse Waveform (200Hz, 40%)   Pulse Waveform (200Hz, 80%)   QPSK Waveform, 10 MHz   G4-QAM Waveform, 10 MHz   G4-QAM Waveform, 100 KHz   G4-QAM Waveform, 40 MHz   G4-QAM Waveform, 40 MHz   IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)   IEEE 802.11b WiFi (80MHz, 64-QAM, 99p	WIMAX LTE-FDD IDEN IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Coneric	12.52 11.86 15.24 14.67 14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3   LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   IDEN 1:3   IDEN 1:3   IDEN 1:6   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)   IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)   IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)   Pulse Waveform (200Hz, 10%)   Pulse Waveform (200Hz, 20%)   Pulse Waveform (200Hz, 20%)   Pulse Waveform (200Hz, 80%)   QPSK Waveform, 1 MHz   QPSK Waveform, 1 MHz   G4-QAM Waveform, 100 kHz   64-QAM Waveform, 40 MHz   64-QAM Waveform, 40 MHz   64-QAM Waveform, 40 MHz   IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)   CDMA2000 (1xEV-DO, Rev. 0)   CDMA2000 (1xEV-DO, Rev. 0)   CDMA2000, RC3, SO32, SCH0, Full Rate   LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)   WLAN CCDF, 64-QAM, 40MHz   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)   IEEE	WiMAX LTE-FDD IDEN IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Coneric	11.86 15.24 14.67 14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 %  ±9.6 %
IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3 LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK) IDEN 1:3 IDEN 1:6 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc) IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc) IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc) Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 100 kHz 1EEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) CDMA2000 (1xEV-DO, Rev. 0) CDMA2000 (1xEV-DO, Rev. 0) CDMA2000, RC3, SO32, SCH0, Full Rate LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) WLAN CCDF, 64-QAM, 40MHz IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Wimax Wimax Wimax Wimax Wimax Wimax Wimax Wimax UTE-FDD IDEN IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Generic Generic Coneric Generic Generic Generic Coneric Generic	15.24 14.67 14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 %  ± 9.6 %
IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)   IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3   LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)   IDEN 1:3   IDEN 1:6   IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)   IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)   IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)   Pulse Waveform (200Hz, 10%)   Pulse Waveform (200Hz, 20%)   Pulse Waveform (200Hz, 40%)   Pulse Waveform (200Hz, 80%)   QPSK Waveform, 1 MHz   QPSK Waveform, 1 MHz   QPSK Waveform, 100 kHz   64-QAM Waveform, 100 kHz   64-QAM Waveform, 40 MHz   IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)   IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)   I	Wimax Wimax Wimax Wimax Wimax Wimax Wimax LTE-FDD IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Coneric	14.67 14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 %  ± 9.6 %
IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3  LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK, AMC 2x3  LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)  IDEN 1:3  IDEN 1:6  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)  IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WIMAX WIMAX WIMAX WIMAX WIMAX LTE-FDD IDEN IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Coneric WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Coneric	14.49 14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 %  ± 9.6 %
IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3 LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK) IDEN 1:3 IDEN 1:6 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc) IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc) IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc) Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) CDMA2000 (1xEV-DO, Rev. 0) CDMA2000 (1xEV-DO, Rev. 0) CDMA2000, RC3, SO32, SCH0, Full Rate LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) WLAN CCDF, 64-QAM, 40MHz IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WIMAX WIMAX WIMAX WIMAX LTE-FDD IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Coneric WLAN WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	14.46 14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 %  ±9.6 %
IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)  IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3  LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)  IDEN 1:3  IDEN 1:6  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)  IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Wimax Wimax LTE-FDD IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Coneric Generic Generic Coneric Generic Generic Coneric	14.58 14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3     LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)     IDEN 1:3     IDEN 1:6     IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)     IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)     IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)     Pulse Waveform (200Hz, 10%)     Pulse Waveform (200Hz, 20%)     Pulse Waveform (200Hz, 40%)     Pulse Waveform (200Hz, 80%)     QPSK Waveform, 1 MHz     QPSK Waveform, 10 MHz     64-QAM Waveform, 100 kHz     64-QAM Waveform, 40 MHz     64-QAM, 99pc dc)     64-QAM Waveform, 40 MHz     64-QAM, 99pc dc)     64-	WiMAX LTE-FDD IDEN IDEN WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	14.57 6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)  IDEN 1:3  IDEN 1:6  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)  IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  1EEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	LTE-FDD  IDEN  IDEN  WLAN  WLAN  WLAN  Generic  Generic  Generic  Generic  Generic  Generic  Generic  WLAN  WLAN  WLAN  WLAN  WLAN  WLAN  WLAN  WLAN  WLAN  CDMA2000  CDMA2000  LTE-TDD  Generic	6.06 10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
iDEN 1:3 iDEN 1:6 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc) IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc) IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc) Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 60%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 16EE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 16EE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 16 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 17 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 18 CDMA2000 (1xEV-DO, Rev. 0) 18 CDMA2000 (1xEV-DO, Rev. A) 18 CDMA2000, RC3, SO32, SCH0, Full Rate 19 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 19 WLAN CCDF, 64-QAM, 40MHz 10 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	iDEN iDEN WLAN WLAN WLAN Generic Coneric Generic Generic Generic Generic Generic Generic Generic ULAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	10.51 13.48 1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 %  ±9.6 %
iDEN 1:6  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)  IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 80%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	iDEN WLAN WLAN WLAN Generic Coneric Generic Generic Generic Coneric Generic Generic Coneric Coneric Coneric Coneric Coneric WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	13,48 1,71 8,36 8,36 10,00 6,99 3,98 2,22 0,97 5,10 5,22 6,27 6,27 8,37 8,60 8,53 3,76 3,77 5,22 7,82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc) IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc) IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc) Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 80%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	WLAN WLAN WLAN Generic Generic Generic Generic Generic Generic Generic Generic Generic WLAN WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	1.71 8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %  ±9.6 %
IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)  IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 60%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN WLAN Generic WLAN WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	8.36 8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)  Pulse Waveform (200Hz, 10%)  Pulse Waveform (200Hz, 20%)  Pulse Waveform (200Hz, 40%)  Pulse Waveform (200Hz, 60%)  Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)  IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN Generic WLAN WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	8.36 10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 60%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 16EE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 16EE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 16 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 17 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 18 CDMA2000 (1xEV-DO, Rev. 0) 18 CDMA2000 (1xEV-DO, Rev. A) 19 CDMA2000, RC3, SO32, SCH0, Full Rate 19 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 10 WLAN CCDF, 64-QAM, 40MHz 11 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic WLAN WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	10.00 6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 60%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 16EE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 16EE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 16 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 17 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 18 CDMA2000 (1xEV-DO, Rev. 0) 18 CDMA2000 (1xEV-DO, Rev. A) 19 CDMA2000, RC3, SO32, SCH0, Full Rate 10 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 10 WLAN CCDF, 64-QAM, 40MHz 11 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic Generic Generic Generic Generic Generic Generic Generic Generic WLAN WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	6.99 3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 % ± 9.6 %
Pulse Waveform (200Hz, 20%) Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 60%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	Generic Generic Generic Generic Generic Generic Generic WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	3.98 2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
Pulse Waveform (200Hz, 40%) Pulse Waveform (200Hz, 60%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 CDMA2000 (1xEV-DO, Rev. 0) 1 CDMA2000 (1xEV-DO, Rev. A) 2 CDMA2000, RC3, SO32, SCH0, Full Rate 3 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 3 WLAN CCDF, 64-QAM, 40MHz 3 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic Generic Generic Generic Generic Generic WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	2.22 0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
Pulse Waveform (200Hz, 60%) Pulse Waveform (200Hz, 80%) QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 CDMA2000 (1xEV-DO, Rev. 0) 1 CDMA2000 (1xEV-DO, Rev. A) 2 CDMA2000, RC3, SO32, SCH0, Full Rate 3 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 2 WLAN CCDF, 64-QAM, 40MHz 3 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic Generic Generic Generic Generic WLAN WLAN WLAN CDMA2000 CDMA2000 LTE-TDD Generic	0.97 5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 %
Pulse Waveform (200Hz, 80%)  QPSK Waveform, 1 MHz  QPSK Waveform, 10 MHz  64-QAM Waveform, 100 kHz  64-QAM Waveform, 40 MHz  1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)  1 IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)  1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  1 CDMA2000 (1xEV-DO, Rev. 0)  1 CDMA2000 (1xEV-DO, Rev. A)  1 CDMA2000, RC3, SO32, SCH0, Full Rate  1 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  1 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic Generic Generic Generic WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	5.10 5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 16EE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 16EE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 16EE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 16CDMA2000 (1xEV-DO, Rev. 0) 16CDMA2000 (1xEV-DO, Rev. A) 16CDMA2000, RC3, SO32, SCH0, Full Rate 16CDMA2000, RC3, SCH0, Full Rate	Generic Generic Generic WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	5.22 6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 % ± 9.6 %
QPSK Waveform, 10 MHz 64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 CDMA2000 (1xEV-DO, Rev. 0) 1 CDMA2000 (1xEV-DO, Rev. A) 2 CDMA2000, RC3, SO32, SCH0, Full Rate 3 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 2 WLAN CCDF, 64-QAM, 40MHz 3 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic Generic WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	6.27 6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 % ± 9.6 %
64-QAM Waveform, 100 kHz 64-QAM Waveform, 40 MHz 1 IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) 1 CDMA2000 (1xEV-DO, Rev. 0) 2 CDMA2000 (1xEV-DO, Rev. A) 3 CDMA2000, RC3, SO32, SCH0, Full Rate 3 LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) 3 WLAN CCDF, 64-QAM, 40MHz 4 IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
64-QAM Waveform, 40 MHz IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc) IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) CDMA2000 (1xEV-DO, Rev. 0) CDMA2000 (1xEV-DO, Rev. A) CDMA2000, RC3, SO32, SCH0, Full Rate LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) WLAN CCDF, 64-QAM, 40MHz IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	6.27 8.37 8.60 8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)	WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	8.60 8.53 3.76 3.77 5.22 7.82	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
D IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc) D IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) D IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc) D CDMA2000 (1xEV-DO, Rev. 0) D CDMA2000 (1xEV-DO, Rev. A) D CDMA2000, RC3, SO32, SCH0, Full Rate D LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) D WLAN CCDF, 64-QAM, 40MHz D IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	8.53 3.76 3.77 5.22 7.82	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
D IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)  CDMA2000 (1xEV-DO, Rev. 0)  CDMA2000 (1xEV-DO, Rev. A)  CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  LEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	8.53 3.76 3.77 5.22 7.82	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %
G CDMA2000 (1xEV-DO, Rev. 0) G CDMA2000 (1xEV-DO, Rev. A) G CDMA2000, RC3, SO32, SCH0, Full Rate G LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) WLAN CCDF, 64-QAM, 40MHz G IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	CDMA2000 CDMA2000 CDMA2000 LTE-TDD Generic	3.76 3.77 5.22 7.82	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
CDMA2000 (1xEV-DO, Rev. A) CDMA2000, RC3, SO32, SCH0, Full Rate LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9) WLAN CCDF, 64-QAM, 40MHz LEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	CDMA2000 CDMA2000 LTE-TDD Generic	3.77 5.22 7.82	±9.6 % ±9.6 % ±9.6 %
CDMA2000, RC3, SO32, SCH0, Full Rate  LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  LEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	CDMA2000 LTE-TDD Generic	5.22 7.82	± 9.6 % ± 9.6 %
ELTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)  WLAN CCDF, 64-QAM, 40MHz  LEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	LTE-TDD Generic	7.82	± 9.6 %
WLAN CCDF, 64-QAM, 40MHz LEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	Generic		
IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	<u> </u>	, 0.01	± 9.6 %
(   IEEE 802.11b WIFI 2.4 GHZ (DSSS, 1 Wbbs, 99bc dc)	WLAN	1.54	± 9.6 %
THE COR ALL LAUF OF A CULT (EDD OF DM & Mbnc Open do)	WLAN	8.23	±9.6%
N IEEE 802.11g WIFI 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8,23	± 9.6 %
B IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.14	± 9.6 %
LEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.19	± 9.6 %
IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.32	± 9.6 %
B IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8,47	± 9.6 %
B IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)		8.40	± 9.6 %
B IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN		
B IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
			± 9.6 %
			± 9.6 %
			± 9.6 %
			± 9.6 %
C LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)			± 9.6 %
W-CDMA (BS Test Model 1, 64 DPCH)			± 9.6 %
F LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TDD		± 9.6 %
D LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
D LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
C LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
	LTE-FDD	7.48	± 9.6 %
A W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
	Test	10.00	± 9.6 %
B	WLAN	8.63	± 9.6 %
	WCDMA	6.62	± 9.6 %
A CDMA2000 (1xEV-DO Rev. B. 2 carriers)	CDMA2000	6.55	± 9.6 %
	CDMA2000		± 9.6 %
			± 9.6 %
A LIMITS_FIND (M/CINMA AME)			± 9.6 %
A   UMTS-FDD (WCDMA, AMR)			
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	B IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)  D LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)  D LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)  C LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)  C LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)  A W-CDMA (BS Test Model 1, 64 DPCH)	B	B

			TITE TOD	9.56	± 9.6 %
10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56 7.82	± 9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD		± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57 7.82	± 9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD		± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56 7.82	± 9.6 %
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD		± 9.6 %
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	± 9.6 %
10484	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %
	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %
10488		LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	±9.6%
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 46 GR, 62 Gdb)	LTE-TDD	8.37	±9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 30% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	±9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 30% RB, 20 MHz, 04-QAM, 05 Gdb)	LTE-TDD	7.67	± 9.6 %
10497	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QF3R, 0E 3db)  LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 10-QAM, UL Sub)	LTE-TDD	8.68	±9.6 %
10499	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 04-QAM, 02 Sub)	LTE-TDD	7.67	±9.6 %
10500	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	8,44	± 9.6 %
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.52	±9.6 %
10502	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	7.72	± 9.6 %
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	8.31	± 9.6 %
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	7.74	± 9.6 %
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)		8.36	± 9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD		± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	±9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	±9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802,11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8,12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFl 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	± 9.6 %
( , , , , ,		IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	± 9.6 %
10525	AAP	FIELE GOZ, FIGO WILL (EGIMI IZ, MOCOL GOSO GO)			
10525 10526	AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)	WLAN	8.42	± 9.6 % ± 9.6 %

			IAM ANI	8.36	± 9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.43	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN		± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc dc)	WLAN	8.38	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.45	± 9.6 %
10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN	8.32	± 9.6 % ± 9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	± 9.6 %
10540	AAB	IEEE 802.11ac WiFl (40MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	± 9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAB	1EEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	± 9.6 %
	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10554	AAC	IEEE 802.11ac WiFI (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10555		IEEE 802.11ac WIFI (160MHz, MCS1, 3696 dd)	WLAN	8.50	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	±9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	±9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6 %
10563	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6 %
10564	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 9 Wibps, 99pc dc)	WLAN	8.45	± 9.6 %
10565	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.37	± 9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.30	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	1.99	± 9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc dc)			± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	±9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10590	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10001	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10502				0.04	± 9.6 %
10592		IEEE 802 11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	I 9.0 70
10592 10593 10594	AAB AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc) IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %

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10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN		± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %
	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10606		IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10608	AAB	IEEE 802.11ac WiF1 (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10609	AAB	IEEE 802.11ac WIF1 (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10610	AAB	TEEE 802.11ac WIFI (20MHz, MCC3, 30pc dc)	WLAN	8.70	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.77	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc dc)	WLAN	8.94	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)	WLAN	8.59	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)		8,81	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.58	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN		± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.68	±9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.71	±9.6%
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)	WLAN	8.72	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8.83	±9.6 %
10633		IEEE 802.11ac Wii 1 (80MHz, MCS8, 90pc dc)	WLAN	8.80	±9.6%
10634	AAB	IEEE 802.11ac WiF1 (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (60MHz, MCS0, 90pc dc)	WLAN	8.83	±9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10637	AAC	TEEE 802.118C WIFT (160MHz, MCS3, 90pc dc)	WLAN	8.86	±9.6%
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN	8.85	±9.6%
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.98	±9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	9.06	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)	WLAN	9.06	±9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	8.89	±9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)			±9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	±9.6 %
10646	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAE	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAE	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 %
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
311661		Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10660					
10661	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
	AAA AAA AAA	Pulse Waveform (200Hz, 80%)  Pulse Waveform (200Hz, 80%)  Bluetooth Low Energy	Test Bluetooth	0.97 2.19	± 9.6 % ± 9.6 %

10673			1 1 1 1 1 1 1	1 0 57 1	L O G 9/ 1
10673	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	± 9.6 %
	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 %
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6 %_
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc dc)	WLAN	8.83	± 9.6 %
	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10683		IEEE 802.11ax (20MHz, MCS1, 99pc dc)	WLAN	8.26	± 9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc dc)	WLAN	8.28	± 9.6 %
10686	AAA	TEEE 802.118X (20MHz, MCS3, 99pc dc)	WLAN	8.45	±9.6 %
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.29	± 9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.55	± 9.6 %
10689	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8,29	± 9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.25	± 9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc dc)		8.29	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN	8.25	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc dc)	WLAN		± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	± 9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.56	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc dc)	WLAN	8.69	± 9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc dc)	WLAN	8.66	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc dc)	WLAN	8.32	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc dc)	WLAN	8.29	± 9.6 %
		IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.33	± 9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.26	± 9.6 %
10714	AAA	1EEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc dc)	WLAN	8.30	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc dc)	WLAN	8.48	± 9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc dc)	WLAN	8.24	± 9.6 %
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.81	± 9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc dc)			± 9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	
10721	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.76	± 9.6 %
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10724	AAA	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	± 9.6 %
10725	AAA	IEEE 802.11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10726	AAA	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %
10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc dc)	WLAN	8.65	± 9.6 %
	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc dc)	WLAN	8.64	± 9.6 %
	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc dc)	WLAN	8,67	± 9.6 %
10729		IEEE 802.11ax (80MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10729 10730		THEF XII/ THX (OBIVIDA, MICOU, SOUC UC)			
10729 10730 10731	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc dc)	WLAN	8.46	± 9.6 %
10729 10730 10731 10732	AAA AAA	IEEE 802.11ax (80MHz, MCS1, 99pc dc)	WLAN		
10729 10730 10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc dc)   IEEE 802.11ax (80MHz, MCS1, 99pc dc)   IEEE 802.11ax (80MHz, MCS2, 99pc dc)   IEEE 802.11ax (80MHz, MCS3, 99pc dc)		8.46	± 9.6 %

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10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc dc)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc dc)	WLAN	8.36	± 9.6 %
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc dc)	WLAN	8.42	± 9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc dc)	WLAN	8.29	± 9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc dc)	WLAN	8.48	± 9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc dc)	WLAN	8.40	± 9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc dc)	WLAN	8.43	± 9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc dc)	WLAN	8.94	± 9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc dc)	WLAN	9.16	± 9.6 %
10744		IEEE 802.11ax (160MHz, MCS2, 90pc dc)	WLAN	8.93	± 9.6 %
	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc dc)	WLAN	9.11	± 9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc dc)	WLAN	9.04	± 9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc dc)	WLAN	8.93	±9.6%
10748	AAA	TEEE 802.118X (100WITZ, WCSS, 90pc do)	WLAN	8.90	±9.6%
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc dc)	WLAN	8.79	± 9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc dc)	WLAN	8.81	± 9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc dc)		9.00	± 9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc dc)	WLAN	8.94	± 9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc dc)	WLAN		
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc dc)	WLAN	8.64	± 9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc dc)	WLAN	8.77	± 9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc dc)	WLAN	8.77	±9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc dc)	WLAN	8.69	± 9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc dc)	WLAN	8.58	± 9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc dc)	WLAN	8,49	± 9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc dc)	WLAN	8.58	± 9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc dc)	WLAN	8.49	± 9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc dc)	WLAN	8.53	± 9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc dc)	WLAN	8.54	± 9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc dc)	WLAN	8.54	± 9.6 %
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc dc)	WLAN	8,51	± 9.6 %
10767	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	± 9.6 %
	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6 %
10768		5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10769	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10770	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10771	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	±9.6 %
10772	AAC		5G NR FR1 TDD	8.03	±9.6 %
10773	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10774	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6 %
10775	AAB	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10776	AAC	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6 %
10777	AAB	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)		8.34	± 9.6 %
10778	AAC	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10779	AAB	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD		
10780	AAC	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6 %
10781	AAC	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6 %
10782	AAC	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10783	AAC	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6 %
10784	AAC	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	± 9.6 %
10785	AAC	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10786	AAC	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10787	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	± 9.6 %
10788	AAC	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10789	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10790	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10790	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	± 9.6 %
10791	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	± 9.6 %
		5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	± 9.6 %
10793	AAC	5G NR (CP-OFDM, 1 RB, 13 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	7.82	± 9.6 %
10794	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	7.84	± 9.6 %
10795	AAC	DO NR (CP-OFDM 4 DR 20 MHz, CROK, 30 KHz)	5G NR FR1 TDD	7.82	± 9.6 %
10796	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10797	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10798	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz) 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
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10801	AAC	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10802	AAC	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	± 9.6 %
10803	AAC	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10805	AAC	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10806	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10809	AAC	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10810	AAC	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10812	AAC	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10812	AAC	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
	AAC	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10818	AAC	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	± 9.6 %
10819		5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10820	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6%
10821	AAC	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8,41	± 9.6 %
10822	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10823	AAC	56 NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	8.39	± 9.6 %
10824	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10825	AAC	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10827	AAC	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10828	AAC	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)		8.40	± 9.6 %
10829	AAC	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD		± 9.6 %
10830	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	
10831	AAC	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	± 9.6 % ± 9.6 %
10832	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	
10833	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10834	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	± 9.6 %
10835	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10836	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	± 9.6 %
10837	AAC	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	± 9.6 %
10839	AAC	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10840	AAC	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	± 9.6 %
10841	AAC	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	± 9.6 %
10843	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	± 9.6 %
10844	AAC	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10846	AAC	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10854	AAC	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10855	AAC	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10856	AAC	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	±9.6%
10857	AAC	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6%
10858		5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10859	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10860	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10861	AAC	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10863	AAC	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10864	AAC	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	<u> </u>	± 9.6 %
10865	AAC	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)		8.41	± 9.6 %
10866	AAC	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	
10868	AAC	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	± 9.6 %
10869	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10870	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	±9.6%
10871	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10872	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	± 9.6 %
10873	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10874	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10875	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10876	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	± 9.6 %
10877	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	± 9.6 %
10878	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10879	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	± 9.6 %
10880	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	± 9.6 %
10881	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10882	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 %
10883	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	±9.6 %
10884	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	± 9.6 %
10885	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10000	1 WYD	LOCALIDE CONTROL CONTROL OF STATE OF ST	1		

			LCO NO EDO TOD	6.65	± 9.6 %
10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD 5G NR FR2 TDD	6.65 7.78	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)			
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	± 9.6 %
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAA	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAA	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10899	AAA	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAA	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5,68	± 9.6 %
10901	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10902	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10904	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAA	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10906	AAA	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10907	AAA	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAA	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAA	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
10910	AAA	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10911	AAA	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10911	AAA	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10912	AAA	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10913	AAA	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 9.6 %
	AAA	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10915	AAA	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10916	AAA	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	±9.6%
10917	AAA	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10918		5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10919	AAA	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10920	AAA	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10921	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 9.6 %
10922	AAA	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QFSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10923	AAA	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10924	AAA	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	5.95	± 9.6 %
10925	AAA	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	5.84	± 9.6 %
10926	AAA		5G NR FR1 TDD	5.94	± 9.6 %
10927	AAA	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10928	AAA	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10929	AAA	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10930	AAA	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10931	AAA	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)			
10932	AAA	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10933	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10934	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10935	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10936	AAA	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10937	AAA	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10938	AAA	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10939	AAA	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	±9.6 %
10940	AAA	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10941	AAA	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	±9.6 %
10942	AAA	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10943	AAA	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 9.6 %
10944	AAA	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 9.6 %
10945	AAA	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	±9.6%
	AAA	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10946		5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
	AAA				± 9.6 %
10947			5G NR FR1 FDD	5.94	I 9.0 70
10947 10948	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD 5G NR FR1 FDD	5.94	± 9.6 %
10947 10948 10949	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz) 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)			
10947 10948 10949 10950	AAA AAA AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz) 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz) 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10947 10948 10949	AAA	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz) 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD 5G NR FR1 FDD	5.87 5.94	± 9.6 % ± 9.6 %

EX3DV4- SN:7410 July 16, 2019

AAA AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 9.6 %
			·	2 0.0 70
enere i	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 9.6 %
AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	±9.6 %
AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 9.6 %
		5G NR FR1 FDD	8.61	± 9.6 %
	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	±9.6 %
		5G NR FR1 TDD	9.32	± 9.6 %
		5G NR FR1 TDD	9.36	± 9.6 %
	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
		5G NR FR1 TDD	9.55	± 9.6 %
		5G NR FR1 TDD	9.29	± 9.6 %
		5G NR FR1 TDD	9.37	± 9.6 %
		5G NR FR1 TDD	9.55	± 9.6 %
		5G NR FR1 TDD	9.42	± 9.6 %
	5G NR DL (CP-OFDM TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	± 9.6 %
1111111111111	\AA	AAA 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 12 MHz, 64-QAM, 30 kHz)  AAA 5G NR DL (CP-OFDM, TM 3.1, 12 MHz, 64-QAM, 30 kHz)	AAA       5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD         AAA       5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD	AAA       5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD       8.14         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD       8.31         AAA       5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD       8.61         AAA       5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)       5G NR FR1 FDD       8.33         AAA       5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD       9.32         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD       9.36         AAA       5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD       9.40         AAA       5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)       5G NR FR1 TDD       9.55         AAA       5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD       9.29         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD       9.37         AAA       5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD       9.35         AAA       5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)       5G NR FR1 TDD       9.37

 $<sup>^{\</sup>epsilon}$  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





C

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Accreditation No.: SCS 0108

Client

PC Test

Certificate No: EX3-7488\_Jan20/2

### CALIBRATION CERTIFICATE (Replacement of No: EX3-7488\_Jan20)

Object

EX3DV4 - SN:7488

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:

January 21, 2020

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)

BN/ 413012020

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	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
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-19)	In house check: Oct-20

Name Function Signature

Lelf Klysner Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Issued: March 31, 2020

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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Accreditation No.: SCS 0108

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#### Glossary:

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

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

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

Polarization  $\varphi$   $\varphi$  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 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).

January 21, 2020 EX3DV4 - SN:7488

# DASY/EASY - Parameters of Probe: EX3DV4 - SN:7488

#### **Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) <sup>2</sup> ) <sup>A</sup>	0.45	0.49	0.50	± 10.1 %
DCP (mV) <sup>8</sup>	102.4	100.1	101.2	

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	153.9	± 3.5 %	± 4.7 %
		Y	0.00	0.00	1.00		139.0		
	***	Z	0.00	0.00	1.00		140.1		
10352-	Pulse Waveform (200Hz, 10%)	X	5.63	74.36	13.77	10.00	60.0	± 2.9 %	± 9.6 %
AAA		Y	6.82	76.29	14.74		60.0		
		Z	20.00	92.27	21.12		60.0		
10353-	Pulse Waveform (200Hz, 20%)	Х	20.00	87.02	16.42	6.99	80.0	± 2.0 %	± 9.6 %
AAA		Υ	20.00	87.56	16.78		80.0		
		Z	20.00	95.62	21.61		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	20.00	89.58	16.27	3.98	95.0	± 1.2 %	± 9.6 %
AAA		Υ	20.00	87.55	15.19		95.0		
		Z	20.00	108.80	26.40		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	20.00	92.96	16.63	2.22	120.0	± 1.1 %	± 9.6 %
AAA		Y	19.99	82.40	11.72		120.0		
		Z	20.00	123.05	31.18		120.0		
10387-	QPSK Waveform, 1 MHz	X	0.48	60.00	6.54	0.00	150.0	± 3.1 %	± 9.6 %
AAA		Y	0.48	60.00	5.89		150.0	]	
		Z	0.55	60.27	7.65		150.0		
10388-	QPSK Waveform, 10 MHz	X	2.20	68.91	16.27	0.00	150.0	± 1.3 %	± 9.6 %
AAA		Υ	1.83	65.66	14.39	]	150.0	]	
		Z	2.17	68.21	15.92		150.0		
10396-	64-QAM Waveform, 100 kHz	X	2.80	71.23	19.16	3.01	150.0	± 1.1 %	± 9.6 %
AAA		Υ	2.20	65.98	16.61		150.0	1	
		Z	3.19	72.58	19.71		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.49	67.60	16.06	0.00	150.0	± 2.3 %	± 9.6 %
AAA		Υ	3.23	66.02	15.12	]	150.0	]	
		Z	3.46	67.18	15.85		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.60	65.44	15.45	0.00	150.0	± 4.1 %	± 9.6 %
AAA		Υ	4.56	65.09	15.20	]	150.0	]	[
		Z	4.76	65.68	15.57		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).

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:7488

#### **Sensor Model Parameters**

	C1	C2	α	T1	T2	T3	T4	T5	T6
	fF	fF	V-1	ms.V <sup>-2</sup>	ms.V⁻¹	ms	V-2	V-1	
X	33.8	249.38	34.84	6.94	0.00	5.03	1.45	0.10	1.01
Υ	33.3	252.45	36.43	5.07	0.13	5.05	0.00	0.35	1.01
Z	38.7	286.52	35.12	10.09	0.09	5.09	1.93	0.13	1.01

#### **Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	46.2
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

Certificate No: EX3-7488\_Jan20/2 Page 4 of 22

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7488

#### 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	10.64	10.64	10.64	0.57	0.80	± 12.0 %
835	41.5	0.90	10.21	10.21	10.21	0.43	0.94	± 12.0 %
1750	40.1	1.37	8.71	8.71	8.71	0.35	0.86	± 12.0 %
1900	40.0	1.40	8.28	8.28	8.28	0.35	0.86	± 12.0 %
2300	39.5	1.67	8.26	8.26	8.26	0.31	0.90	± 12.0 %
2450	39.2	1.80	7.93	7.93	7.93	0.38	0.90	± 12.0 %
2600	39.0	1.96	7.65	7.65	7.65	0.39	0.90	± 12.0 %
3500	37.9	2.91	7.30	7.30	7.30	0.30	1.30	± 13.1 %
3700	37.7	3.12	7.20	7.20	7.20	0.30	1.30	± 13.1 %
5250	35.9	4.71	5.39	5.39	5.39	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.67	4.67	4.67	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.99	4.99	4.99	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 ConyE 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.

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7488

#### 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	11.35	11.35	11.35	0.47	0.80	± 12.0 %
835	55.2	0.97	11.04	11.04	11.04	0.40	0.87	± 12.0 %
1750	53.4	1.49	8.77	8.77	8.77	0.39	0.86	± 12.0 %
1900	53.3	1.52	8.33	8.33	8,33	0.41	0.86	± 12.0 %
2300	52.9	1.81	8.11	8.11	8.11	0.40	0.90	± 12.0 %
2450	52.7	1.95	8.02	8.02	8.02	0.37	0.90	± 12.0 %
2600	52.5	2.16	7.69	7.69	7.69	0.27	0.98	± 12.0 %
3500	51.3	3.31	7.00	7.00	7.00	0.40	1.35	± 13.1 %
3700	51.0	3,55	6.85	6.85	6.85	0.40	1.35	± 13.1 %
5250	48.9	5.36	4.90	4.90	4.90	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.13	4.13	4.13	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.37	4.37	4.37	0.50	1.90	± 13.1 %

 $<sup>^{\</sup>rm C}$  Frequency validity above 300 MHz of  $\pm$  100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to  $\pm$  50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is  $\pm$  10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to  $\pm$  110 MHz.

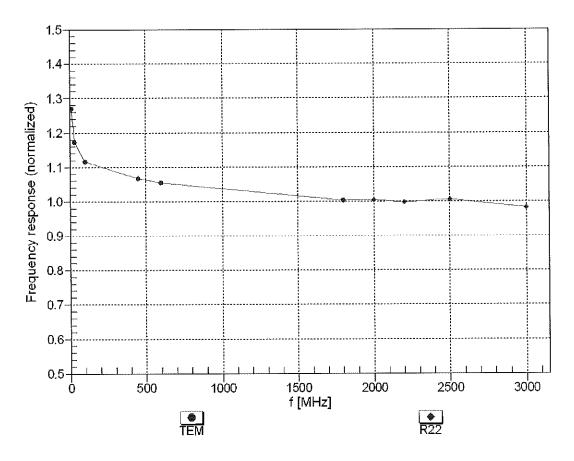
F At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to

<sup>&</sup>lt;sup>F</sup> 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 ConyE uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters.

A lipha/Dapth 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)



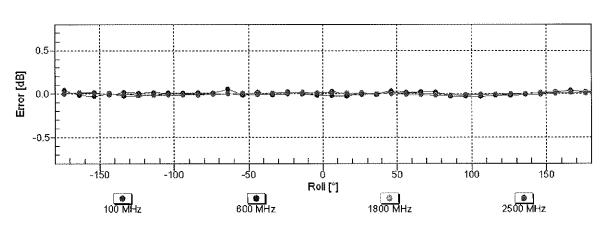
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Tot

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

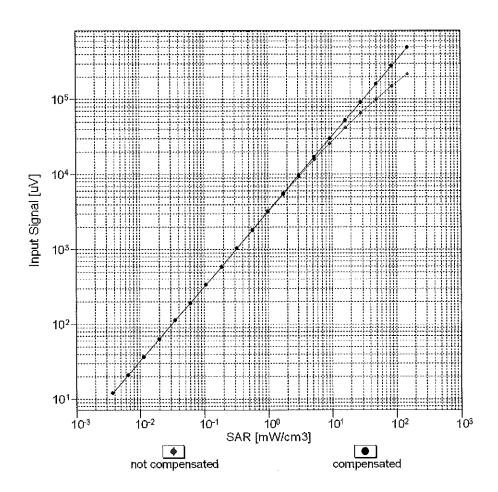
f=600 MHz,TEM f=1800 MHz,R22

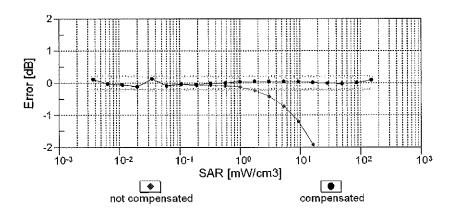
Tot



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

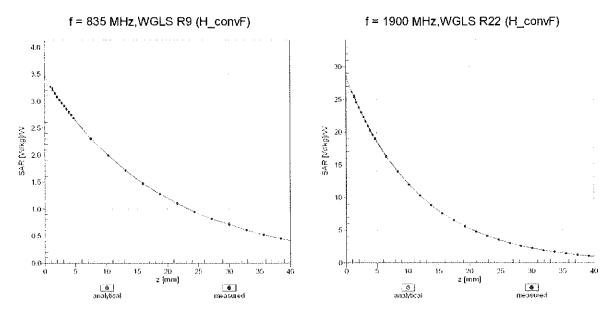
# Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)



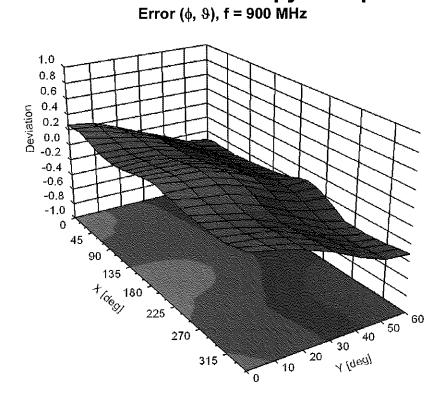


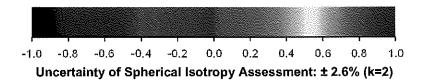
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

### **Conversion Factor Assessment**



# **Deviation from Isotropy in Liquid**





# **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 %
10010	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10011	CAB	IEEE 802,11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10012	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10013	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10021	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10023	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 %
10031	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 %
10034	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 %
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 %
10044	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10045	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 %
10060	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 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	±9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10073	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 WiFl 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 %
10077	CAB	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 %
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)	LTE-FDD	5.67	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10102	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
1 11/11/24			LTE-TDD	10.01	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	[_1 F= " [   3   1		

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10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6%
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	±9.6%
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±9.6%
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	±9.6%
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	±9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6,41	± 9.6 %
10147	1	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 10-QAM)		<del>1</del>	
1	CAF		LTE-FDD	6.72	±9.6%
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	±9.6%
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	±9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9,21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10175	CAG	LTE-FDD (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 %
10176	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	
	1		LTE-FDD		±9.6%
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)		6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	±9.6%
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	±9.6%
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	±9.6%
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	±9.6%
10194	CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	±9.6%
10196	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	±9.6%
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %
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10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	ÇAB	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	CAG	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	±9.6%
		LITE EDD 100 EDMA EON DD 40 MH - ADOM	LITCEND	1 5 04	1 4060/
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
	AAD AAD AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)  LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)  LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD LTE-FDD	5.72	±9.6 % ±9.6 %

10200	A A D	LTE EDD (CO EDMA EON DD 2 MILL CA OAM)	LTE-FDD	6.60	+069/
10300	AAD AAA	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM) IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	6.60 12.03	± 9.6 % ± 9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WIMAX	12.57	± 9.6 %
10302	AAA	IEEE 802.16e WIMAX (23.16, 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)	WIMAX	15.24	± 9.6 %
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WIMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)	WIMAX	14.58	±9.6%
10310	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	±9.6%
10314	AAA	IDEN 1:6	IDEN	13.48	±9.6%
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	±9.6%
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)	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 dc)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	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	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	±9.6%
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN WLAN	1.54	±9.6%
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10417	<del></del>	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23 8.14	± 9.6 %
10418 10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)   IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10419	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 10-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-02-M)	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 %
10427	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 Sub)	LTE-TDD	7.82	±9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	±9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	±9.6%
		LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	±9.6%
10450	AAC	L L-1 DD (Of DIVIA, 20 Will2, L-1W 5.1, Okpping 4470)			
	AAC AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10450				7.59 10.00	± 9.6 % ± 9.6 %
10450 10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	<del>,                                     </del>	
10450 10451 10453	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%) Validation (Square, 10ms, 1ms)	WCDMA Test	10.00	± 9.6 %
10450 10451 10453 10456	AAA AAD AAB	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%) Validation (Square, 10ms, 1ms) IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)	WCDMA Test WLAN	10.00 8.63	± 9.6 % ± 9.6 %
10450 10451 10453 10456 10457	AAA AAD AAB AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%) Validation (Square, 10ms, 1ms) IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc) UMTS-FDD (DC-HSDPA)	WCDMA Test WLAN WCDMA	10.00 8.63 6.62	± 9.6 % ± 9.6 % ± 9.6 %
10450 10451 10453 10456 10457 10458	AAA AAD AAB AAA AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)  Validation (Square, 10ms, 1ms)  IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)  UMTS-FDD (DC-HSDPA)  CDMA2000 (1xEV-DO, Rev. B, 2 carriers)  CDMA2000 (1xEV-DO, Rev. B, 3 carriers)  UMTS-FDD (WCDMA, AMR)	WCDMA Test WLAN WCDMA CDMA2000	10.00 8.63 6.62 6.55	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10450 10451 10453 10456 10457 10458 10459	AAA AAB AAA AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%) Validation (Square, 10ms, 1ms) IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc) UMTS-FDD (DC-HSDPA) CDMA2000 (1xEV-DO, Rev. B, 2 carriers) CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	WCDMA Test WLAN WCDMA CDMA2000 CDMA2000	10.00 8.63 6.62 6.55 8.25	±9.6 % ±9.6 % ±9.6 % ±9.6 % ±9.6 %

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10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	±9.6%
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	±9.6%
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8,57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TOD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAC		<del></del>		
10484	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TOD	8.39	±9.6%
		LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	±9.6%
10488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	±9.6%
10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	±9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	±9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	±9.6 %
10497	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	±9.6%
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10499	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TOD	8.68	±9.6%
10500	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	±9.6 %
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
10502	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	±9.6%
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD		
10511	AAF			8.51	±9.6%
		LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE TOD	7.74	±9.6%
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	±9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	±9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	±9.6%
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	±9.6%
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFl 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	±96%
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	±9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	± 9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)	WLAN	8.42	± 9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.21	±9.6 %
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