

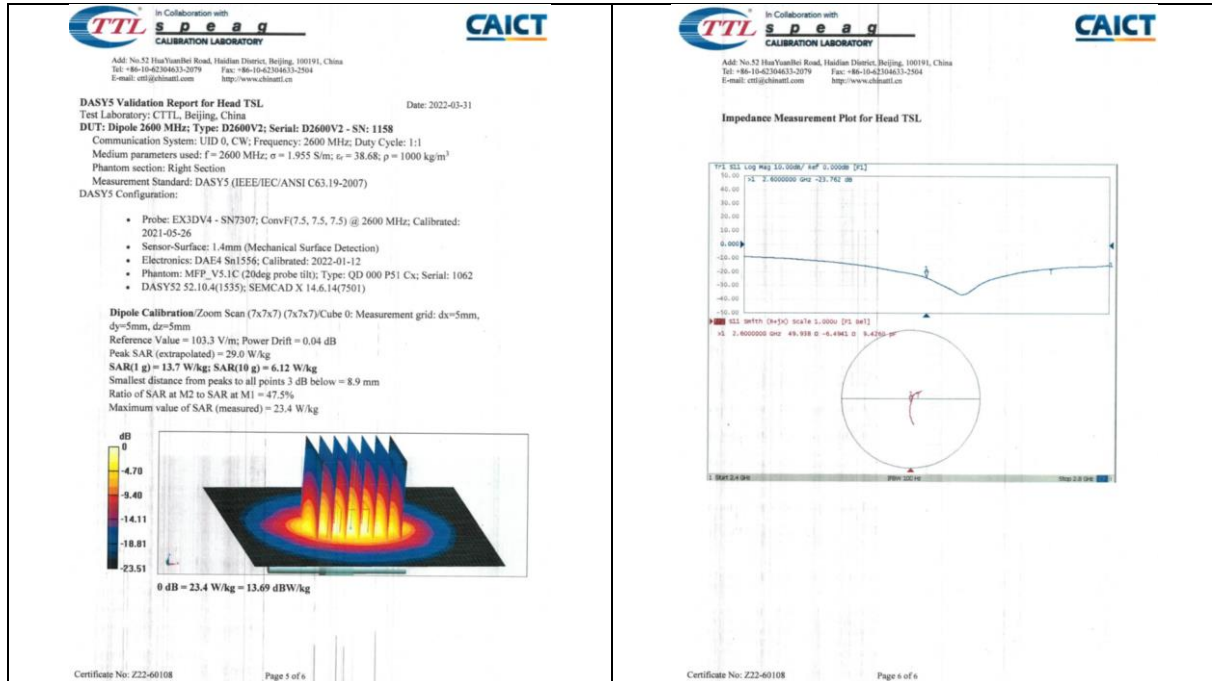
## 1.11 D2600V2 - SN 1158

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Client: SGS-CN		Certificate No: Z22-60108	
<b>CALIBRATION CERTIFICATE</b>			
Object: D2600V2 - SN: 1158			
Calibration Procedure(s): FF-Z11-003-01 Calibration Procedures for dipole validation kits			
Calibration date: March 31, 2022			
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		Cal Date (Calibrated by Certificate No.) Scheduled Calibration	
Power Meter: NRP2	106277	24-Sep-21 (CTTL No.J21X08326)	Sep-22
Power sensor: NRP8S	104291	24-Sep-21 (CTTL No.J21X08326)	Sep-22
Reference Probe EX3DVA	SN 7307	26-May-21 (SPEAG No EX3-7307_May21)	May-22
DAE4	SN 1556	12-Jan-22 (CTTL-SPEAG No Z22-60007)	Jan-23
Secondary Standards		Cal Date (Calibrated by Certificate No.) Scheduled Calibration	
Signal Generator E4438C	MY49071430	13-Jan-22 (CTTL No.J22X00406)	Jan-23
Network Analyzer E5071C	MY48110673	14-Jan-22 (CTTL No.J22X00406)	Jan-23
Calibrated by: Zhao Jing SAR Test Engineer		Signature	
Reviewed by: Lin Hao SAR Test Engineer		Signature	
Approved by: Qi Dianyan SAR Project Leader		Signature	
Issued: April 6, 2022			
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Measurement Conditions			
DASY system configuration, as far as not given on page 1:			
DASY Version	DASY52	52.10.4	
Extrapolation	Advanced Extrapolation		
Phantom	Triple Flat Phantom 5.1C		
Distance Dipole Center - TSL	10 mm	with Spacer	
Zoom Scan Resolution	dx, dy, dz = 5 mm		
Frequency	2600 MHz ± 1 MHz		
Head TSL parameters			
The following parameters and calculations were applied:			
Nominal Head TSL parameters	Temperature	Permittivity	Conductivity
	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.7 ± 6 %	1.96 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---
SAR result with Head TSL			
SAR averaged over 1 cm <sup>2</sup> (1 g) of Head TSL		Condition	
SAR measured	250 mW input power	13.7 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	54.8 W/kg ± 18.8 % (k=2)	
SAR averaged over 10 cm <sup>2</sup> (10 g) of Head TSL		Condition	
SAR measured	250 mW input power	6.12 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	24.6 W/kg ± 18.7 % (k=2)	

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Glossary:			
TSL	tissue simulating liquid		
ConvF	sensitivity in TSL / NORMx.y.z		
N/A	not applicable or not measured		
Calibration is Performed According to the Following Standards:			
a) IEC/IEEE 62209-1528, "Measurement Procedure for The Assessment of Specific Absorption Rate of Human Exposure to Radio Frequency Fields from Hand-held and Body-mounted Wireless Communication Devices- Part 1528: Human Models, Instrumentation and Procedures (Frequency range of 4 MHz to 10 GHz)", October 2020			
b) KDB 865864, "SAR Measurement Requirements for 100 MHz to 6 GHz"			
Additional Documentation:			
c) DASY4/S 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%.			

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Appendix (Additional assessments outside the scope of CNAS L0570)			
Antenna Parameters with Head TSL			
Impedance, transformed to feed point	49.90-6.49jΩ		
Return Loss	-23.8dB		
General Antenna Parameters and Design			
Electrical Delay (one direction)	1.053 ns		
After long term use with 100W radiated power, only a slight warming of the dipole near the feed-point 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 feed-point may be damaged.			
Additional EUT Data			
Manufactured by	SPEAG		



## 1.12 D5GHzV2 - SN 1095

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**CAICT**

**Client: SGS-CN Certificate No: Z22-60187**

**CALIBRATION CERTIFICATE**

Object: D5GHzV2 - SN: 1095

Calibration Procedure(s): FF-Z11-003-01  
Calibration Procedures for dipole validation kits

Calibration date: June 1, 2022

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 (23±3)°C and humidity <70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by: Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL No.J21008328)	Sep-22
Power sensor NRP8S	104201	24-Sep-21 (CTTL No.J21008328)	Sep-22
Reference Probe EX3DV4	SN 7464	26-Jan-22(SPEAG No EX3-7464, Jan22)	Jan-23
DAE4	SN 1556	12-Jan-22(CTTL-SPEAG No.Z22-60007)	Jan-23

Secondary Standards	ID #	Cal Date (Calibrated by: Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY48071430	13-Jan-22 (CTTL No.J22000408)	Jan-23
Network Analyzer E5071C	MY48110673	14-Jan-22 (CTTL No.J22000406)	Jan-23

Calibrated by: Zhao Jing SAR Test Engineer

Reviewed by: Lin Hao SAR Test Engineer

Approved by: Qi Dianyan SAR Project Leader

Issued: June 6, 2022

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Certificate No: Z22-60187 Page 1 of 10

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**Glossary:**

TSL: Issue simulating liquid

ComF: sensitivity in TSL / NORMx,y,z

N/A: not applicable or not measured

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

a) IEC/IEEE 62209-1528, "Measurement Procedure for The Assessment of Specific Absorption Rate of Human Exposure to Radio Frequency Fields from Hand-held and Body-mounted Wireless Communication Devices-Part 1528: Human Models, Instrumentation and Procedures (Frequency range of 4 MHz to 10 GHz)", October 2020

b) KDB 665664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation:**

c) DASY5 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%.

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<b>Measurement Conditions</b> DASY system configuration, as far as not given on page 1.			
DASY Version	DASY2	52.10.4	
Extrapolation	Advanced Extrapolation		
Phantom	Triple Flat Phantom 5.1C		
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	5000 MHz ± 1 MHz 5300 MHz ± 1 MHz 5500 MHz ± 1 MHz 5800 MHz ± 1 MHz		
<b>Head TSL parameters at 5200MHz</b> The following parameters and calculations were applied.			
Nominal Head TSL parameters	Temperature	Permittivity	Conductivity
	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.2 ± 6 %	4.73 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---
<b>SAR result with Head TSL at 5200MHz</b>			
SAR averaged over 1 cm <sup>2</sup> (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	7.79 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	77.8 W/kg ± 24.4 % (k=2)	
SAR averaged over 10 cm <sup>2</sup> (10 g) of Head TSL	Condition		
SAR measured	250 mW input power	2.22 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	22.1 W/kg ± 24.2 % (k=2)	
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<b>Head TSL parameters at 5200MHz</b> The following parameters and calculations were applied.			
Nominal Head TSL parameters	Temperature	Permittivity	Conductivity
	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.7 ± 6 %	5.05 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---
<b>SAR result with Head TSL at 5200MHz</b>			
SAR averaged over 1 cm <sup>2</sup> (1 g) of Head TSL	Condition		
SAR measured	100 mW input power	8.12 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	80.8 W/kg ± 24.4 % (k=2)	
SAR averaged over 10 cm <sup>2</sup> (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	22.9 W/kg ± 24.2 % (k=2)	
<b>Head TSL parameters at 5800MHz</b> The following parameters and calculations were applied.			
Nominal Head TSL parameters	Temperature	Permittivity	Conductivity
	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.25 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---
<b>SAR result with Head TSL at 5800MHz</b>			
SAR averaged over 1 cm <sup>2</sup> (1 g) of Head TSL	Condition		
SAR measured	100 mW input power	7.71 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	76.7 W/kg ± 24.4 % (k=2)	
SAR averaged over 10 cm <sup>2</sup> (10 g) of Head TSL	Condition		
SAR measured	100 mW input power	2.16 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	21.8 W/kg ± 24.2 % (k=2)	
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<b>Appendix (Additional assessments outside the scope of CNAS L0570)</b>			
<b>Antenna Parameters with Head TSL at 5200MHz</b>			
Impedance, transformed to feed point	48.1D-5.03jΩ		
Return Loss	-23.8dB		
<b>Antenna Parameters with Head TSL at 5300MHz</b>			
Impedance, transformed to feed point	47.8D-2.42jΩ		
Return Loss	-28.5dB		
<b>Antenna Parameters with Head TSL at 5500MHz</b>			
Impedance, transformed to feed point	50.3D-4.26jΩ		
Return Loss	-27.4dB		
<b>Antenna Parameters with Head TSL at 5600MHz</b>			
Impedance, transformed to feed point	54.5D-4.80jΩ		
Return Loss	-24.0dB		
<b>Antenna Parameters with Head TSL at 5800MHz</b>			
Impedance, transformed to feed point	51.5D-5.61jΩ		
Return Loss	-24.9dB		
Certificate No: Z22-60187 Page 6 of 10			

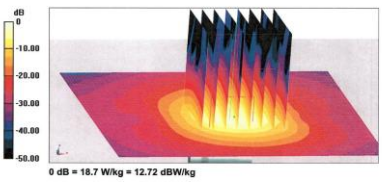
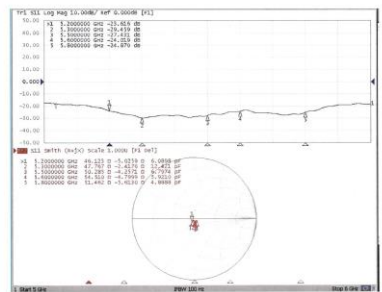


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<p>In Collaboration with <b>TTL</b> <b>s p e a q</b> CALIBRATION LABORATORY</p> <p>CAICT</p> <p>Address: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62302117 E-mail: <a href="mailto:cn@sgs.com">cn@sgs.com</a> <a href="http://www.caict.ac.cn">http://www.caict.ac.cn</a></p> <p><b>General Antenna Parameters and Design</b></p> <p>Electrical Delay (one direction) 1.101 ns</p> <p>After long term use with 100W radiated power, only a slight warming of the dipole near the feed-point can be measured.</p> <p>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.</p> <p>No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feed-point may be damaged.</p> <p><b>Additional EUT Data</b></p> <p>Manufactured by SPEAG</p> <p>Certificate No: Z22-60187 Page 7 of 10</p>	<p>In Collaboration with <b>TTL</b> <b>s p e a q</b> CALIBRATION LABORATORY</p> <p>CAICT</p> <p>Address: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62302117 E-mail: <a href="mailto:cn@sgs.com">cn@sgs.com</a> <a href="http://www.caict.ac.cn">http://www.caict.ac.cn</a></p> <p><b>DASY5 Validation Report for Head TSL</b></p> <p>Test Laboratory: CTTL, Beijing, China Date: 2022-06-01</p> <p><b>DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1095</b></p> <p>Communication System: CW; Frequency: 5200 MHz; Frequency: 5300 MHz; Frequency: 5500 MHz; Frequency: 5600 MHz; Frequency: 5800 MHz; Duty Cycle: 1:1 Medium parameters used: <math>f = 5200 \text{ MHz}</math>; <math>\sigma = 4.62 \text{ S/m}</math>; <math>\epsilon_r = 35.19</math>; <math>\rho = 1000 \text{ kg/m}^3</math> Medium parameters used: <math>f = 5300 \text{ MHz}</math>; <math>\sigma = 4.73 \text{ S/m}</math>; <math>\epsilon_r = 35.19</math>; <math>\rho = 1000 \text{ kg/m}^3</math> Medium parameters used: <math>f = 5500 \text{ MHz}</math>; <math>\sigma = 4.939 \text{ S/m}</math>; <math>\epsilon_r = 34.83</math>; <math>\rho = 1000 \text{ kg/m}^3</math> Medium parameters used: <math>f = 5600 \text{ MHz}</math>; <math>\sigma = 5.051 \text{ S/m}</math>; <math>\epsilon_r = 34.89</math>; <math>\rho = 1000 \text{ kg/m}^3</math> Medium parameters used: <math>f = 5800 \text{ MHz}</math>; <math>\sigma = 5.247 \text{ S/m}</math>; <math>\epsilon_r = 34.42</math>; <math>\rho = 1000 \text{ kg/m}^3</math> Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:</p> <ul style="list-style-type: none"><li>Probe: EX3DV4 - SN7484; ConvF(5.6, 5.6) @ 5200 MHz; ConvF(5.32, 5.32) @ 5300 MHz; ConvF(5.11, 5.11, 5.11) @ 5500 MHz; ConvF(4.91, 4.91, 4.91) @ 5600 MHz; ConvF(5, 5, 5) @ 5800 MHz; Calibrated: 2022-01-26</li><li>Sensor-Surface: 1.4mm (Mechanical Surface Detection)</li><li>Electronics: DA64 Sn1556; Calibrated: 2022-01-12</li><li>Phantom: MPF_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062</li><li>DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)</li></ul> <p><b>Dipole Calibration /Pin=100mW, d=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm</b> Reference Value = 60.80 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 29.8 W/kg SAR(1 g) = 7.79 W/kg; SAR(10 g) = 2.22 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 66.8% Maximum value of SAR (measured) = 18.3 W/kg</p> <p><b>Dipole Calibration /Pin=100mW, d=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm</b> Reference Value = 61.08 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 31.5 W/kg SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.27 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 65.5% Maximum value of SAR (measured) = 19.0 W/kg</p> <p>Certificate No: Z22-60187 Page 8 of 10</p>
<p>In Collaboration with <b>TTL</b> <b>s p e a q</b> CALIBRATION LABORATORY</p> <p>CAICT</p> <p>Address: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62302117 E-mail: <a href="mailto:cn@sgs.com">cn@sgs.com</a> <a href="http://www.caict.ac.cn">http://www.caict.ac.cn</a></p> <p><b>Dipole Calibration /Pin=100mW, d=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm</b> Reference Value = 61.92 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 34.7 W/kg SAR(1 g) = 8.28 W/kg; SAR(10 g) = 2.34 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 63.9% Maximum value of SAR (measured) = 20.2 W/kg</p> <p><b>Dipole Calibration /Pin=100mW, d=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm</b> Reference Value = 65.08 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 35.2 W/kg SAR(1 g) = 8.12 W/kg; SAR(10 g) = 2.3 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 62.5% Maximum value of SAR (measured) = 19.1 W/kg</p> <p><b>Dipole Calibration /Pin=100mW, d=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm</b> Reference Value = 62.13 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 34.8 W/kg SAR(1 g) = 7.71 W/kg; SAR(10 g) = 2.16 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 61.6% Maximum value of SAR (measured) = 18.7 W/kg</p> <p></p> <p>Certificate No: Z22-60187 Page 9 of 10</p>	<p>In Collaboration with <b>TTL</b> <b>s p e a q</b> CALIBRATION LABORATORY</p> <p>CAICT</p> <p>Address: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62302117 E-mail: <a href="mailto:cn@sgs.com">cn@sgs.com</a> <a href="http://www.caict.ac.cn">http://www.caict.ac.cn</a></p> <p><b>Impedance Measurement Plot for Head TSL</b></p> <p></p> <p>Certificate No: Z22-60187 Page 10 of 10</p>

## 2 DAE4 - SN 1245

<p>Schmid &amp; Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland Phone +41 44 245 9700, Fax +41 44 245 9770 www.spgs.ch, info@spgs.ch</p> <p style="text-align: center;"><b>s p e a g</b></p> <p style="text-align: center;"><b>IMPORTANT NOTICE</b></p> <p><b>USAGE OF THE DAE4</b></p> <p>The DAE4 unit is a delicate, high precision instrument and requires careful treatment by the user. There are no serviceable parts inside the DAE4. Special attention shall be given to the following points:</p> <p><b>Battery Exchange:</b> The battery cover of the DAE4 unit is fixed using a screw, over tightening the screw may cause the threads inside the DAE4 to wear out.</p> <p><b>Shipping of the DAE4:</b> Before shipping the DAE4 to SPEAG for calibration, remove the batteries and pack the DAE4 in an anti-static bag. This anti-static bag shall then be packed into a larger box or container which protects the DAE4 from impacts during transportation. The package shall be marked to indicate that a fragile instrument is inside.</p> <p><b>E-stop Failures:</b> Touch detection may be malfunctioning due to broken magnets in the E-stop. Rough handling of the E-stop may lead to damage of these magnets. Touch and collision errors are often caused by dust and dirt accumulated in the E-stop. To prevent E-stop failure, the customer shall always mount the probe to the DAE4 carefully and keep the DAE4 unit in a non-dusty environment if not used for measurements.</p> <p><b>Repair:</b> Minor repairs are performed at no extra cost during the annual calibration. However, SPEAG reserves the right to charge for any repair especially if rough unprofessional handling caused the defect.</p> <p><b>DASY Configuration Files:</b> Since the exact values of the DAE4 input resistances, as measured during the calibration procedure of a DAE4 unit, are not used by the DASY software, a nominal value of 200 MOhm is given in the corresponding configuration file.</p> <p><b>Important Note:</b> Warranty and calibration is void if the DAE4 unit is disassembled partly or fully by the Customer.</p> <p><b>Important Note:</b> Never attempt to grease or oil the E-stop assembly. Cleaning and readjusting of the E-stop assembly is allowed by certified SPEAG personnel only and is part of the annual calibration procedure.</p> <p><b>Important Note:</b> To prevent damage of the DAE4 probe connector pins, use great care when installing the probe to the DAE4. Carefully connect the probe with the connector notch oriented in the mating position. Avoid any rotational movement of the probe body versus the DAE4 while turning the locking nut of the connector. The same care shall be used when disconnecting the probe from the DAE4.</p> <p>TN_EH190306AE DAE4.docx 07.03.2019</p>	<p>Calibration Laboratory of Schmid &amp; Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland</p> <p>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</p> <p>Accreditation No.: SCS 0108</p> <p>Client: <b>SGS-CN (Auden)</b> Certificate No.: <b>DAE4-1245_May22</b></p> <p><b>CALIBRATION CERTIFICATE</b></p> <p>Object: <b>DAE4 - SD 000 D04 BM - SN: 1245</b></p> <p>Calibration procedure(s): <b>QA CAL-06 v30</b> Calibration procedure for the data acquisition electronics (DAE)</p> <p>Calibration date: <b>May 30, 2022</b></p> <p>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.</p> <p>All calibrations have been conducted in the closed laboratory facility; environment temperature (22 ± 3) °C and humidity &lt; 70%.</p> <p>Calibration Equipment used (MATE critical for calibration)</p> <table border="1"><thead><tr><th>Primary Standards</th><th>ID #</th><th>Cal Date (Certificate No.)</th><th>Scheduled Calibration</th></tr></thead><tbody><tr><td>Kelvin Multimeter Type 2001</td><td>SN: 0810276</td><td>31-Aug-21 (No.31368)</td><td>Aug-22</td></tr></tbody></table> <table border="1"><thead><tr><th>Secondary Standards</th><th>ID #</th><th>Check Date (in house)</th><th>Scheduled Check</th></tr></thead><tbody><tr><td>Auto DAE Calibration Unit</td><td>SE LWS 003 AA 1001</td><td>24-Jan-22 (in house check)</td><td>In house check: Jan-23</td></tr><tr><td>Calibrator Blue V2.1</td><td>SE LWS 006 AA 1002</td><td>24-Jan-22 (in house check)</td><td>In house check: Jan-23</td></tr></tbody></table> <p>Calibrated by: <b>Dominique Stettin</b> Function: <b>Laboratory Technician</b> Signature: <i>[Signature]</i></p> <p>Approved by: <b>Ben Kohn</b> Technical Manager Signature: <i>[Signature]</i></p> <p>This calibration certificate shall not be reproduced except in full without written approval of the laboratory. Issued: May 30, 2022</p> <p>Certificate No: DAE4-1245_May22 Page 1 of 5</p>	Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration	Kelvin Multimeter Type 2001	SN: 0810276	31-Aug-21 (No.31368)	Aug-22	Secondary Standards	ID #	Check Date (in house)	Scheduled Check	Auto DAE Calibration Unit	SE LWS 003 AA 1001	24-Jan-22 (in house check)	In house check: Jan-23	Calibrator Blue V2.1	SE LWS 006 AA 1002	24-Jan-22 (in house check)	In house check: Jan-23
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<p>Calibration Laboratory of Schmid &amp; Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland</p> <p>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</p> <p>Accreditation No.: SCS 0108</p> <p><b>Glossary</b></p> <p>DAE: data acquisition electronics Connector angle: information used in DASY system to align probe sensor X to the robot coordinate system.</p> <p><b>Methods Applied and Interpretation of Parameters</b></p> <ul style="list-style-type: none"><li>• <b>DC Voltage Measurement:</b> Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.</li><li>• <b>Connector angle:</b> The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.</li><li>• The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.<ul style="list-style-type: none"><li>• <b>DC Voltage Measurement Linearity:</b> Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.</li><li>• <b>Common mode sensitivity:</b> Influence of a positive or negative common mode voltage on the differential measurement.</li><li>• <b>Channel separation:</b> Influence of a voltage on the neighbor channels not subject to an input voltage.</li><li>• <b>AD Converter Values with inputs shorted:</b> Values on the internal AD converter corresponding to zero input voltage.</li><li>• <b>Input Offset Measurement:</b> Output voltage and statistical results over a large number of zero voltage measurements.</li><li>• <b>Input Offset Current:</b> Typical value for information; Maximum channel input offset current, not considering the input resistance.</li><li>• <b>Input resistance:</b> Typical value for information; DAE input resistance at the connector, during internal auto-zeroing and during measurement.</li><li>• <b>Low Battery Alarm Voltage:</b> Typical value for information. Below this voltage, a battery alarm signal is generated.</li><li>• <b>Power consumption:</b> Typical value for information. Supply currents in various operating modes.</li></ul></li></ul> <p>Certificate No: DAE4-1245_May22 Page 2 of 5</p>	<p><b>DC Voltage Measurement</b></p> <p>AD - Converter Resolution nominal High Range: 1LSB = 6.1µV, full range = -190...+320 mV Low Range: 1LSB = 61µV, full range = -1...+3mV DASY measurement parameters: Auto Zero-Time: 3 sec; Measuring time: 3 sec</p> <table border="1"><thead><tr><th>Calibration Factors</th><th>X</th><th>Y</th><th>Z</th></tr></thead><tbody><tr><td>High Range</td><td>405.265 ± 0.02% (k=2)</td><td>403.974 ± 0.02% (k=2)</td><td>406.092 ± 0.02% (k=2)</td></tr><tr><td>Low Range</td><td>3.99534 ± 1.50% (k=2)</td><td>3.99508 ± 1.50% (k=2)</td><td>4.01015 ± 1.50% (k=2)</td></tr></tbody></table> <p><b>Connector Angle</b></p> <table border="1"><thead><tr><th>Connector Angle to be used in DASY system</th><th>30.0° ± 1°</th></tr></thead></table> <p>Certificate No: DAE4-1245_May22 Page 3 of 5</p>	Calibration Factors	X	Y	Z	High Range	405.265 ± 0.02% (k=2)	403.974 ± 0.02% (k=2)	406.092 ± 0.02% (k=2)	Low Range	3.99534 ± 1.50% (k=2)	3.99508 ± 1.50% (k=2)	4.01015 ± 1.50% (k=2)	Connector Angle to be used in DASY system	30.0° ± 1°						
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## Appendix (Additional assessments outside the scope of SCS0108)

## 1. DC Voltage Linearity

High Range	Reading (µV)	Difference (µV)	Error (%)
Channel X + Input	19994.45	1.52	0.00
Channel X - Input	20004.58	2.22	0.01
Channel X + Input	-20001.14	1.12	-0.01
Channel Y + Input	19994.72	1.58	0.00
Channel Y - Input	20001.22	-1.00	-0.00
Channel Y + Input	-20003.05	-1.57	0.01
Channel Z + Input	19992.44	0.19	0.00
Channel Z - Input	20003.09	0.58	0.00
Channel Z + Input	-20001.73	-0.27	0.00

Low Range	Reading (µV)	Difference (µV)	Error (%)
Channel X + Input	2001.91	0.41	0.02
Channel X - Input	202.54	0.65	0.32
Channel X + Input	-197.86	0.07	-0.04
Channel Y + Input	2002.05	0.58	0.03
Channel Y - Input	201.27	-0.57	-0.28
Channel Y + Input	-196.23	-0.06	0.03
Channel Z + Input	2001.96	0.08	0.00
Channel Z - Input	200.09	-1.53	-0.76
Channel Z + Input	-199.85	-1.57	0.79

## 2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec	Common mode Input Voltage (mV)	High Range Average Reading (µV)	Low Range Average Reading (µV)
Channel X	200	-5.87	-7.69
	-200	9.12	7.79
Channel Y	200	-8.68	-9.28
	-200	8.52	6.36
Channel Z	200	-5.36	-5.60
	-200	3.58	3.06

## 3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec	Input Voltage (mV)	Channel X (µV)	Channel Y (µV)	Channel Z (µV)
Channel X	200	-	4.07	-3.14
Channel Y	200	9.36	-	4.27
Channel Z	200	10.11	7.14	-

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## 4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15984	17040
Channel Y	16562	16768
Channel Z	16035	15968

## 5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10MΩ	Average (µV)	min. Offset (µV)	max. Offset (µV)	Std. Deviation (µV)
Channel X	1.00	-0.15	1.93	0.45
Channel Y	-0.18	-1.28	0.94	0.45
Channel Z	-0.58	-2.61	0.58	0.60

## 6. Input Offset Current

Nominal input circuitry offset current on all channels: &lt;25nA

## 7. Input Resistance (Typical values for information)

	Zeroing (ΩOff)	Measuring (ΩChn)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

## 8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

## 9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+8	+14
Supply (- Vcc)	-0.01	-8	-9

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## 3 EX3DV4 - SN 7346

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Accreditation No.: SCS 0108

Client: Auden

Certificate No: EX3-7346\_Mar22

## CALIBRATION CERTIFICATE

Object	EX3DV4 - SN 7346		
Calibration procedure(s)	QA CAL-01 v8; QA CAL-14 v6; QA CAL-23 v5; QA CAL-25 v7 Calibration procedure for dosimetric E-field probes		
Calibration date:	March 30, 2022		
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 closest laboratory facility: environment temperature (22 ± 3) °C and humidity < 70%.			
Calibration Equipment used (MATE critical for calibration):			
Primary Standards	ISI	Cal Date (Certificate No.)	Scheduled Calibration
Power meter MNP	SN 10478	08-Apr-21 (No. 217-02501-02502)	Apr-22
Power sensor MNP-291	SN 10304	08-Apr-21 (No. 217-02501)	Apr-22
Power sensor MNP-291	SN 10343	08-Apr-21 (No. 217-02502)	Apr-22
Reference 20 dB attenuator	SN C22632 (26)	08-Apr-21 (No. 217-02503)	Apr-22
DAEA	SN 460	13-Dec-21 (No. DAE4-485, 04031)	Dec-22
Reference Probe (S3302)	SN 3013	27-Dec-21 (No. E53-3013, Dec21)	Dec-22
Secondary Standards	ISI	Check Date (in house)	Scheduled Calibration
Power meter E4415B	SN G841283074	08-Apr-21 (in house check Jun-20)	In house check Jun-22
Power sensor E4412A	SN MY4148687	08-Apr-18 (in house check Jun-20)	In house check Jun-22
Power sensor E4412A	SN 40011815	08-Apr-18 (in house check Jun-20)	In house check Jun-22
RF generator HP 8446C	SN US340101709	04-Apr-20 (in house check Jun-20)	In house check Jun-22
Network Analyzer E8363A	SN US41090477	31-Mar-14 (in house check Dec-20)	In house check Dec-22
Calibrated by:	Name: Sven Kuhn	Function: Laboratory Technician	Signature: [Signature]
Approved by:	Name: Sven Kuhn	Function: Deputy Manager	Signature: [Signature]
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Issued: March 31, 2022			

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Accreditation No.: SCS 0108

## Glossary:

- TSL: Issue simulating liquid
  - NORM<sub>M,y,z</sub>: sensitivity in free space
  - ConF: sensitivity in TSL / NORM<sub>M,y,z</sub>
  - DCP: diode compression point
  - CF: crest factor (10µs, cycle) of the RF signal
  - A, B, C, D: modulation dependent linearization parameters
  - Polarization: ϕ rotation around probe axis
  - Polarization: θ rotation around an axis that is in the plane normal to probe axis (at measurement center).  
i.e., θ = 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) IEC/IEEE 62208-1:2018, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1:351: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020
  - b) KOB 805664, "SAR Measurement Requirements for 100 MHz to 6 GHz"
- Methods Applied and Interpretation of Parameters:**
- NORM<sub>M,y,z</sub>: Assessed for E-field polarization θ = 0 (if < 900 MHz in TEM-cell; 1 > 1800 MHz: R22 waveguide). NORM<sub>M,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>M,y,z</sub> do not affect the E-field uncertainty inside TSL (see below ConF).
  - NORM<sub>M,y,z</sub> = NORM<sub>M,y,z</sub> \* Frequency response (see Frequency Response Chart). This linearization is implemented in DASY4 software version later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConF.
  - DCP<sub>M,y,z</sub>: 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.
  - PAC: PAC is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
  - A<sub>M,y,z</sub>, B<sub>M,y,z</sub>, C<sub>M,y,z</sub>, D<sub>M,y,z</sub>, V<sub>M,y,z</sub>: 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. V<sub>M,y,z</sub> is the maximum calibration range expressed in RMS voltage across the diode.
  - ConF and Boundary Effect Parameters: Assessed in 1st 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 values are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are to NORM<sub>M,y,z</sub> \* ConF software to be accurately close to the boundary. The separability in TSL corresponds to NORM<sub>M,y,z</sub> \* ConF whereby the uncertainty corresponds to that given for ConF. A frequency dependent ConF is used in DASY version 4.4 and higher which allows extending the validity from 50 MHz to 2 100 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 NORM<sub>M</sub> (no uncertainty required).

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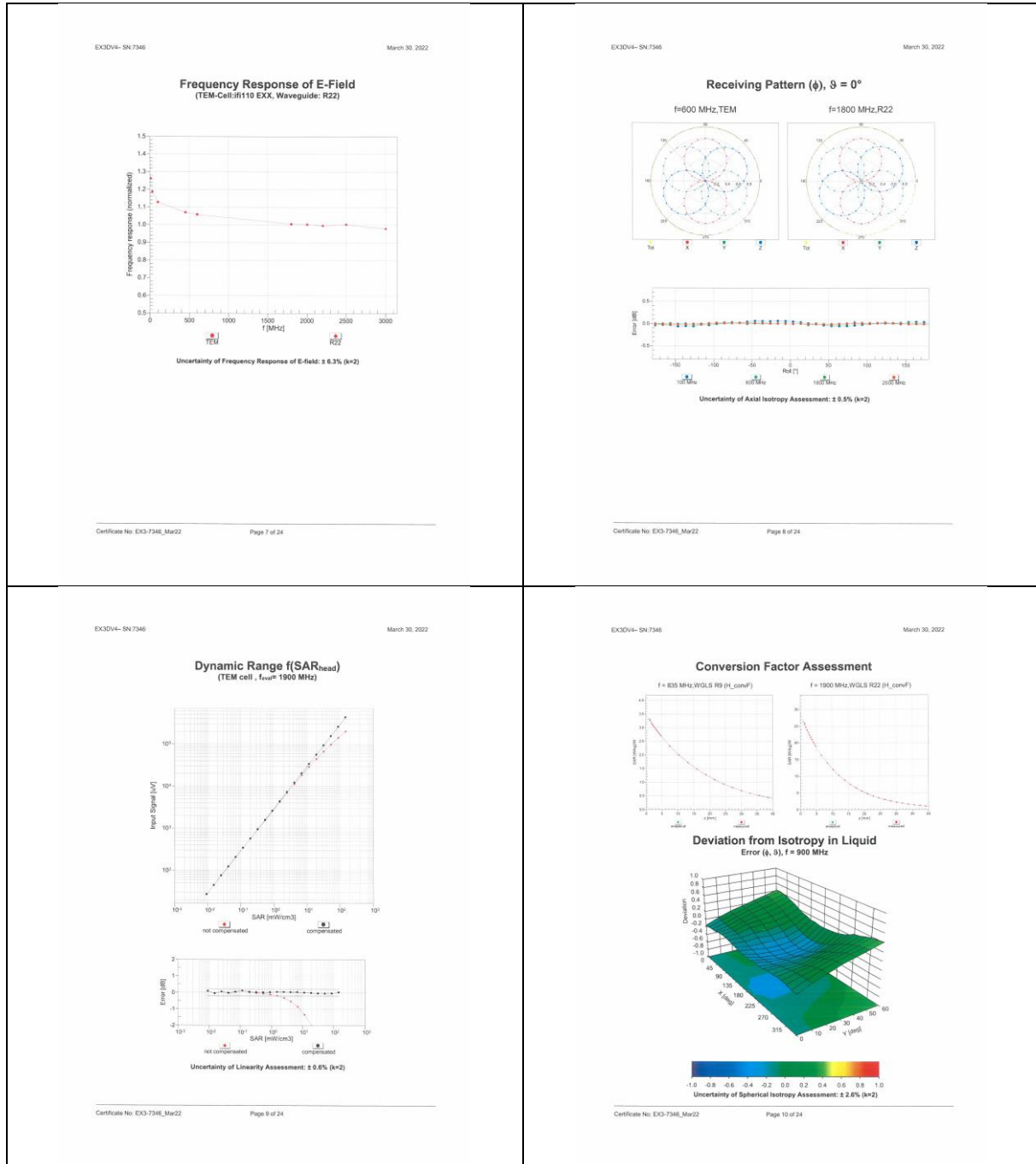
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EX3DV4 - SN:7346									
March 30, 2022									
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346									
<b>Basic Calibration Parameters</b>									
Norm. $\mu V/(V/m)^2$		Sensor X		Sensor Y		Sensor Z		Unc. (k=2)	
DCP (mV) <sup>2</sup>		0.45		0.47		0.61		± 10.1 %	
		101.4		106.0		106.9			
<b>Calibration Results for Modulation Response</b>									
UID	Communication System Name	A	B	C	D	VR	Max. dev.	Max. Unc <sup>1</sup>	
		dB	dB-μV	dB	dB	mV			(k=2)
0	CW	X: 0.00	0.00	1.00	0.00	143.5	± 3.5 %	± 4.1 %	
		Y: 0.00	0.00	1.00	0.00	139.3			
		Z: 0.00	0.00	1.00	0.00	139.0			
10035-AAA	Pulse Waveform (200Hz, 10%)	X: 3.33	68.90	11.66	10.00	60.0	± 3.5 %	± 9.6 %	
		Y: 4.03	79.70	12.35	60.0				
		Z: 1.63	61.25	6.76	60.0				
10035-AAA	Pulse Waveform (200Hz, 20%)	X: 3.30	79.65	11.31	6.99	85.0	± 2.4 %	± 9.6 %	
		Y: 11.31	81.32	14.72	86.0				
		Z: 5.83	69.90	5.11	86.0				
10035-AAA	Pulse Waveform (200Hz, 40%)	X: 7.41	79.85	12.51	3.88	95.0	± 2.7 %	± 9.6 %	
		Y: 26.93	81.42	15.51	95.0				
		Z: 0.18	138.38	0.01	95.0				
10035-AAA	Pulse Waveform (200Hz, 60%)	X: 22.7	71.13	9.52	2.32	120.0	± 1.7 %	± 9.6 %	
		Y: 20.90	91.58	16.29	120.0				
		Z: 7.84	138.51	16.47	120.0				
10035-AAA	GRK Waveform, 1 MHz	X: 1.47	64.88	13.82	1.00	150.0	± 4.2 %	± 9.6 %	
		Y: 1.56	66.27	14.65	0.00	150.0			
		Z: 0.43	67.88	11.05	150.0				
10088-AAA	GRK Waveform, 10 MHz	X: 1.56	66.27	14.65	0.00	150.0	± 1.1 %	± 9.6 %	
		Y: 2.08	67.33	13.38	150.0				
		Z: 2.4	64.75	13.18	150.0				
10088-AAA	64-QAM Waveform, 100 MHz	X: 2.43	68.51	18.25	3.01	150.0	± 1.0 %	± 9.6 %	
		Y: 2.4	64.75	13.18	150.0				
		Z: 1.78	64.72	15.99	150.0				
10088-AAA	64-QAM Waveform, 40 MHz	X: 3.38	66.29	12.25	0.00	150.0	± 2.0 %	± 9.6 %	
		Y: 3.38	66.29	12.25	150.0				
		Z: 2.70	65.72	14.74	150.0				
10014-AAA	WLAN CCK40, 64-QAM, 40MHz	X: 4.11	65.35	12.77	0.00	150.0	± 3.6 %	± 9.6 %	
		Y: 4.70	65.54	15.41	150.0				
		Z: 3.83	66.16	15.28	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%.									
* The uncertainties of Norm. X, Y, Z do not affect the E-field uncertainty within T10, (see Pages 5 and 6)									
* Numerical indication parameter: uncertainty not required									
* Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.									
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EX3DV4 - SN:7346									
March 30, 2022									
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346									
<b>Sensor Model Parameters</b>									
C1	C2	a	T1	T2	T3	T4	T5	T6	
IP	IP	V <sup>2</sup>	ms.V <sup>2</sup>	ms.V <sup>2</sup>	ms	V <sup>2</sup>	V <sup>2</sup>		
X	39.2	291.80	35.10	5.63	0.33	5.02	1.42	0.12	1.01
Y	37.1	270.84	34.12	6.29	0.00	5.01	1.82	0.05	1.01
Z	9.7	69.74	33.37	4.96	0.00	4.94	0.61	0.00	1.00
<b>Other Probe Parameters</b>									
Sensor Arrangement									
Triangular									
Connector Angle (°)									
-166.1									
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									
Note: Measurement distance from surface can be increased to 3-4 mm for an Area Scan job.									
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EX3DV4 - SN:7346									
March 30, 2022									
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346									
<b>Calibration Parameter Determined in Head Tissue Simulating Media</b>									
f (MHz)	Relative Permittivity <sup>1</sup>	Conductivity (S/m) <sup>2</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>3</sup>	Depth <sup>4</sup> (mm)	Unc. (k=2)	
750	41.9	0.69	10.56	10.56	10.56	0.55	0.85	± 12.0 %	
835	41.5	0.90	10.12	10.12	10.12	0.42	0.96	± 12.0 %	
900	41.5	0.97	10.10	10.10	10.10	0.53	0.80	± 12.0 %	
1430	40.5	1.20	9.26	9.26	9.26	0.50	0.80	± 12.0 %	
1750	40.1	1.37	8.63	8.63	8.63	0.34	0.86	± 12.0 %	
1900	40.0	1.40	8.48	8.48	8.48	0.35	0.86	± 12.0 %	
2000	40.0	1.40	8.35	8.35	8.35	0.34	0.86	± 12.0 %	
2300	39.5	1.67	7.86	7.86	7.86	0.39	0.90	± 12.0 %	
2450	39.2	1.80	7.63	7.63	7.63	0.41	0.90	± 12.0 %	
2600	39.0	1.96	7.33	7.33	7.33	0.44	0.90	± 12.0 %	
3300	38.2	2.71	7.15	7.15	7.15	0.30	1.35	± 13.1 %	
3500	37.8	2.81	7.14	7.14	7.14	0.30	1.35	± 13.1 %	
3750	37.7	3.12	6.85	6.85	6.85	0.30	1.35	± 13.1 %	
3900	37.5	3.32	6.71	6.71	6.71	0.40	1.60	± 13.1 %	
4100	37.2	3.53	6.58	6.58	6.58	0.40	1.60	± 13.1 %	
4200	37.1	3.63	6.30	6.30	6.30	0.40	1.70	± 13.1 %	
4400	36.9	3.64	6.24	6.24	6.24	0.40	1.70	± 13.1 %	
4600	36.7	4.04	6.11	6.11	6.11	0.40	1.70	± 13.1 %	
4800	36.4	4.25	6.08	6.08	6.08	0.40	1.80	± 13.1 %	
4900	36.3	4.40	5.84	5.84	5.84	0.40	1.80	± 13.1 %	
5200	36.0	4.66	5.25	5.25	5.25	0.40	1.80	± 13.1 %	
5300	35.9	4.78	5.12	5.12	5.12	0.40	1.80	± 13.1 %	
5500	35.6	4.96	4.85	4.85	4.85	0.40	1.80	± 13.1 %	
5600	35.5	5.07	4.70	4.70	4.70	0.40	1.80	± 13.1 %	
5800	35.3	5.27	4.75	4.75	4.75	0.40	1.80	± 13.1 %	
* Frequency validity above 300 MHz is ± 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.									
* At frequencies 5-10 GHz, the validity of tissue parameters (ε and σ) can be related to ± 10% if liquid compensation formula is applied to measured DCP values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.									
* Alpha/Depth are determined during calibration. SP-ECG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz, below ± 2% for frequencies between 3-6 GHz, and below ± 4% for frequencies between 6-10 GHz at any distance larger than half the probe tip diameter from the boundary.									
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EX3DV4 - SN:7346									
March 30, 2022									
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346									
<b>Calibration Parameter Determined in Head Tissue Simulating Media</b>									
f (MHz)	Relative Permittivity <sup>1</sup>	Conductivity (S/m) <sup>2</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>3</sup>	Depth <sup>4</sup> (mm)	Unc. (k=2)	
6500	34.5	6.07	5.30	5.30	5.30	0.20	2.50	± 18.6 %	
* Frequency validity above 6 GHz is ± 700 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.									
* At frequencies 5-10 GHz, the validity of tissue parameters (ε and σ) can be related to ± 10% if liquid compensation formula is applied to measured DCP values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.									
* Alpha/Depth are determined during calibration. SP-ECG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz, below ± 2% for frequencies between 3-6 GHz, and below ± 4% for frequencies between 6-10 GHz at any distance larger than half the probe tip diameter from the boundary.									
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EX3034-SN-7346				March 30, 2022			
10414	AAA	WLAN CDF: 64-QAM, 40MHz	Generic	8.54	± 0.6 %		
10415	AAA	IEEE 802.11b WFI 2.4 GHz (DSSS, 1 Mbps, R90c-d)	WLAN	1.54	± 0.6 %		
10416	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS-OFDM, 5.5 Mbps, R90c-d)	WLAN	8.23	± 0.6 %		
10417	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 6 Mbps, R90c-d)	WLAN	8.23	± 0.6 %		
10418	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS-OFDM, 6 Mbps, R90c-d)	WLAN	8.14	± 0.6 %		
10419	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS-OFDM, 6 Mbps, R90c-d)	WLAN	8.19	± 0.6 %		
10420	AAC	IEEE 802.11n HT Overhead, 7.2 Mbps, R90c-d	WLAN	8.32	± 0.6 %		
10421	AAC	IEEE 802.11n HT Overhead, 6.3 Mbps, 16-QAM	WLAN	8.47	± 0.6 %		
10424	AAC	IEEE 802.11n HT Overhead, 7.2 Mbps, 64-QAM	WLAN	8.40	± 0.6 %		
10425	AAC	IEEE 802.11n HT Overhead, 14 Mbps, R90c-d	WLAN	8.41	± 0.6 %		
10426	AAC	IEEE 802.11n HT Overhead, 30 Mbps, 16-QAM	WLAN	8.45	± 0.6 %		
10427	AAC	IEEE 802.11n HT Overhead, 130 Mbps, 64-QAM	WLAN	8.41	± 0.6 %		
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TRP 3.1)	LTE-FDD	8.28	± 0.6 %		
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TRP 3.1)	LTE-FDD	8.38	± 0.6 %		
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TRP 3.1)	LTE-FDD	8.34	± 0.6 %		
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TRP 3.1)	LTE-FDD	8.34	± 0.6 %		
10434	AAA	WCDMA (BS Test Model 1, 64 DPM)	WCDMA	8.60	± 0.6 %		
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 0.6 %		
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TRP 3.1, Clipping 44%)	LTE-FDD	7.86	± 0.6 %		
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TRP 3.1, Clipping 44%)	LTE-FDD	7.93	± 0.6 %		
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TRP 3.1, Clipping 44%)	LTE-FDD	7.91	± 0.6 %		
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TRP 3.1, Clipping 44%)	LTE-FDD	7.88	± 0.6 %		
10451	AAA	WCDMA (BS Test Model 1, 64 DPM, Clipping 44%)	WCDMA	7.89	± 0.6 %		
10452	AAD	Validation (Spurs, 10ms, 1ms)	Test	10.00	± 0.6 %		
10456	AAC	IEEE 802.11ac WFI (160MHz, 64-QAM, R90c-d)	WLAN	8.63	± 0.6 %		
10457	AAA	UMTS FDD (SC-HSPA)	WCDMA	6.62	± 0.6 %		
10458	AAA	CDMA2000 (1xEV-DO Rev. B, 3.1c)	CDMA2000	8.58	± 0.6 %		
10459	AAA	CDMA2000 (1xEV-DO Rev. B, 3.1c)	CDMA2000	8.25	± 0.6 %		
10460	AAA	UMTS FDD (HSPA, R90c-d)	WCDMA	2.39	± 0.6 %		
10461	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.8 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 0.6 %		
10462	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.8 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 0.6 %		
10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.8 MHz, 64-QAM, UL Sub)	LTE-TDD	8.30	± 0.6 %		
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 0.6 %		
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	7.82	± 0.6 %		
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10473	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10474	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10475	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10476	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 0.6 %		
10479	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 0.6 %		
10480	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 0.6 %		
10481	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.18	± 0.6 %		
10482	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 0.6 %		
10483	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.39	± 0.6 %		
10484	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 0.6 %		
10485	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.89	± 0.6 %		
10486	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.39	± 0.6 %		
10487	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.40	± 0.6 %		
10488	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 0.6 %		

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10489	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 0.6 %		
10490	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.34	± 0.6 %		
10491	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 0.6 %		
10492	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 0.6 %		
10493	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.14	± 0.6 %		
10494	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 0.6 %		
10495	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 0.6 %		
10496	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.34	± 0.6 %		
10497	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 0.6 %		
10498	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 0.6 %		
10499	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	± 0.6 %		
10500	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	8.67	± 0.6 %		
10501	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 0.6 %		
10502	AAC	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 0.6 %		
10503	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 0.6 %		
10504	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 0.6 %		
10505	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 0.6 %		
10506	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 0.6 %		
10507	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 0.6 %		
10508	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.35	± 0.6 %		
10509	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.89	± 0.6 %		
10510	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	8.35	± 0.6 %		
10511	AAB	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 0.6 %		
10512	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 0.6 %		
10513	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 16-QAM, UL Sub)	LTE-TDD	7.42	± 0.6 %		
10514	AAF	LTE-TDD (SC-FDMA, 1 RB, 3.1 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 0.6 %		
10515	AAA	IEEE 802.11b WFI 2.4 GHz (DSSS, 1 Mbps, R90c-d)	WLAN	1.56	± 0.6 %		
10516	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS, 5.5 Mbps, R90c-d)	WLAN	8.17	± 0.6 %		
10517	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS, 11 Mbps, R90c-d)	WLAN	8.23	± 0.6 %		
10518	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 9 Mbps, R90c-d)	WLAN	8.39	± 0.6 %		
10519	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 12 Mbps, R90c-d)	WLAN	8.15	± 0.6 %		
10520	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 18 Mbps, R90c-d)	WLAN	8.39	± 0.6 %		
10521	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 24 Mbps, R90c-d)	WLAN	7.97	± 0.6 %		
10522	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 36 Mbps, R90c-d)	WLAN	8.32	± 0.6 %		
10523	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 48 Mbps, R90c-d)	WLAN	8.08	± 0.6 %		
10524	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 54 Mbps, R90c-d)	WLAN	8.27	± 0.6 %		
10525	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 6 Mbps, R90c-d)	WLAN	8.15	± 0.6 %		
10526	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 9 Mbps, R90c-d)	WLAN	8.42	± 0.6 %		
10527	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 12 Mbps, R90c-d)	WLAN	8.21	± 0.6 %		
10528	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 18 Mbps, R90c-d)	WLAN	8.36	± 0.6 %		
10529	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 24 Mbps, R90c-d)	WLAN	8.43	± 0.6 %		
10530	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 36 Mbps, R90c-d)	WLAN	8.48	± 0.6 %		
10531	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 48 Mbps, R90c-d)	WLAN	8.36	± 0.6 %		
10532	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 54 Mbps, R90c-d)	WLAN	8.29	± 0.6 %		
10533	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 6 Mbps, R90c-d)	WLAN	8.38	± 0.6 %		
10534	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 9 Mbps, R90c-d)	WLAN	8.45	± 0.6 %		
10535	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 12 Mbps, R90c-d)	WLAN	8.45	± 0.6 %		
10536	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 18 Mbps, R90c-d)	WLAN	8.32	± 0.6 %		
10537	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 24 Mbps, R90c-d)	WLAN	8.44	± 0.6 %		
10538	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 36 Mbps, R90c-d)	WLAN	8.54	± 0.6 %		
10539	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 48 Mbps, R90c-d)	WLAN	8.39	± 0.6 %		
10540	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 54 Mbps, R90c-d)	WLAN	8.77	± 0.6 %		
10541	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 6 Mbps, R90c-d)	WLAN	8.59	± 0.6 %		
10542	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 9 Mbps, R90c-d)	WLAN	8.65	± 0.6 %		
10543	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 12 Mbps, R90c-d)	WLAN	8.65	± 0.6 %		
10544	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 18 Mbps, R90c-d)	WLAN	8.65	± 0.6 %		
10545	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 24 Mbps, R90c-d)	WLAN	8.55	± 0.6 %		
10546	AAC	IEEE 802.11n WFI 5.0 GHz (OFDM, 36 Mbps, R90c-d)	WLAN	8.55	± 0.6 %		

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10547	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.49	± 0.6 %		
10548	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.37	± 0.6 %		
10549	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.39	± 0.6 %		
10550	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.39	± 0.6 %		
10551	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.39	± 0.6 %		
10552	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.42	± 0.6 %		
10553	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.45	± 0.6 %		
10554	AAC	IEEE 802.11ac WFI (80MHz, MCS9, R90c-d)	WLAN	8.48			



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106731	AAC	IEEE 802.11ax (20MHz, MCS2, 90pc-ds)	WLAN	8.78	+ 0.6%		
106734	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.74	+ 0.6%		
106735	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.80	+ 0.6%		
106736	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.77	+ 0.6%		
106737	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.73	+ 0.6%		
106738	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.78	+ 0.6%		
106679	AAC	IEEE 802.11ax (20MHz, MCS8, 90pc-ds)	WLAN	8.99	+ 0.6%		
106680	AAC	IEEE 802.11ax (20MHz, MCS8, 90pc-ds)	WLAN	8.80	+ 0.6%		
106681	AAC	IEEE 802.11ax (20MHz, MCS10, 90pc-ds)	WLAN	8.82	+ 0.6%		
106682	AAC	IEEE 802.11ax (20MHz, MCS11, 90pc-ds)	WLAN	8.83	+ 0.6%		
106683	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.82	+ 0.6%		
106684	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.26	+ 0.6%		
106685	AAC	IEEE 802.11ax (20MHz, MCS2, 90pc-ds)	WLAN	8.33	+ 0.6%		
106686	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.28	+ 0.6%		
106687	AAC	IEEE 802.11ax (20MHz, MCS4, 90pc-ds)	WLAN	8.45	+ 0.6%		
106688	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.29	+ 0.6%		
106689	AAC	IEEE 802.11ax (20MHz, MCS8, 90pc-ds)	WLAN	8.55	+ 0.6%		
106690	AAC	IEEE 802.11ax (20MHz, MCS7, 90pc-ds)	WLAN	8.29	+ 0.6%		
106691	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.25	+ 0.6%		
106692	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.29	+ 0.6%		
106693	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.25	+ 0.6%		
106694	AAC	IEEE 802.11ax (20MHz, MCS11, 90pc-ds)	WLAN	8.57	+ 0.6%		
106695	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc-ds)	WLAN	8.78	+ 0.6%		
106696	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.91	+ 0.6%		
106697	AAC	IEEE 802.11ax (40MHz, MCS2, 90pc-ds)	WLAN	8.61	+ 0.6%		
106698	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.89	+ 0.6%		
106699	AAC	IEEE 802.11ax (40MHz, MCS4, 90pc-ds)	WLAN	8.82	+ 0.6%		
106700	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.73	+ 0.6%		
106701	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.86	+ 0.6%		
106702	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.70	+ 0.6%		
106703	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.82	+ 0.6%		
106704	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.56	+ 0.6%		
106705	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.69	+ 0.6%		
106706	AAC	IEEE 802.11ax (40MHz, MCS11, 90pc-ds)	WLAN	8.66	+ 0.6%		
106707	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.32	+ 0.6%		
106708	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.55	+ 0.6%		
106709	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.33	+ 0.6%		
106710	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.29	+ 0.6%		
106711	AAC	IEEE 802.11ax (40MHz, MCS4, 90pc-ds)	WLAN	8.39	+ 0.6%		
106712	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.87	+ 0.6%		
106713	AAC	IEEE 802.11ax (40MHz, MCS6, 90pc-ds)	WLAN	8.53	+ 0.6%		
106714	AAC	IEEE 802.11ax (40MHz, MCS7, 90pc-ds)	WLAN	8.26	+ 0.6%		
106715	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.43	+ 0.6%		
106716	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.30	+ 0.6%		
106717	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.49	+ 0.6%		
106718	AAC	IEEE 802.11ax (40MHz, MCS11, 90pc-ds)	WLAN	8.54	+ 0.6%		
106719	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.81	+ 0.6%		
106720	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.87	+ 0.6%		
106721	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.78	+ 0.6%		
106722	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.55	+ 0.6%		
106723	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.70	+ 0.6%		
106724	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.90	+ 0.6%		
106725	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.74	+ 0.6%		
106726	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.72	+ 0.6%		
106727	AAC	IEEE 802.11ax (40MHz, MCS8, 90pc-ds)	WLAN	8.86	+ 0.6%		
106728	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106729	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106730	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106731	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106732	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106733	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106734	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106735	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106736	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106737	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106738	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106739	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106740	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106741	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106742	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106743	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106744	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106745	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106746	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106747	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106748	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106749	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106750	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106751	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106752	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106753	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106754	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106755	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106756	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106757	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106758	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106759	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106760	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106761	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106762	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106763	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106764	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106765	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106766	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106767	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106768	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106769	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106770	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106771	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106772	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106773	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106774	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106775	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106776	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106777	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106778	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106779	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106780	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106781	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106782	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106783	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106784	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106785	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106786	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106787	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106788	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106789	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106790	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106791	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106792	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106793	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106794	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106795	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106796	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106797	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106798	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106799	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106800	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106801	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106802	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106803	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106804	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106805	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106806	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106807	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106808	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106809	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106810	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106811	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106812	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106813	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106814	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106815	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106816	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106817	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106818	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc-ds)	WLAN	8.85	+ 0.6%		
106819	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc					



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EX3DV4 – SN7346

March 30, 2022

10985	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
10986	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
10987	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
10988	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
10989	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
10990	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %

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

EX3DV4 – SN7346

March 30, 2022

10991	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
10992	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
10993	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
10994	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
10995	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
10996	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
10997	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
10998	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
10999	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11000	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11001	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11002	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11003	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11004	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11005	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11006	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11007	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11008	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11009	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11010	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11011	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11012	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11013	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11014	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11015	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11016	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11017	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11018	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11019	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11020	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11021	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11022	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11023	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11024	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11025	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11026	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11027	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11028	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11029	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11030	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11031	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11032	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11033	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11034	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11035	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11036	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11037	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11038	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11039	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11040	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11041	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11042	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11043	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11044	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11045	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11046	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11047	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11048	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11049	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11050	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11051	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11052	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11053	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11054	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11055	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11056	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11057	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11058	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11059	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11060	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11061	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11062	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11063	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11064	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11065	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11066	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11067	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11068	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11069	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11070	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11071	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11072	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11073	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11074	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11075	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11076	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11077	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11078	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11079	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11080	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11081	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11082	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11083	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11084	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11085	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11086	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11087	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11088	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11089	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11090	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11091	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11092	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11093	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11094	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11095	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11096	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11097	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11098	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11099	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11100	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11101	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11102	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11103	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11104	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11105	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11106	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11107	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11108	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11109	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11110	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11111	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11112	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11113	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11114	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11115	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11116	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11117	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11118	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11119	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11120	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.56	± 9.6 %
11121	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.53	± 9.6 %
11122	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11123	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.54	± 9.6 %
11124	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.50	± 9.6 %
11125	AAA	SG NR DL (CP-OPDM, TN 3.1, 40 MHz, 64-QAM, 30 MHz)	SG NR FR1 TDD	9.5	

#### 4 Impedance and return loss

Dipole CLA150 SN 4025				
Head Liquid				
Date of Measurement	Return Loss(dB)	$\Delta$ %	Impedance ( $\Omega$ )	$\Delta\Omega$
2021/4/26	-31.4	/	47.8	/
Dipole D450V3 SN 1103				
Head Liquid				
Date of Measurement	Return Loss(dB)	$\Delta$ %	Impedance ( $\Omega$ )	$\Delta\Omega$
2021/4/21	-23	/	57.1	/



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