



TEST REPORT



Report No. : KES-SR260195
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KES Co., Ltd.

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1. Client

- Name : Airstandard Co.,Ltd.
- Address : 3-508,509, 120 Gunpocheomdansaneop 2-ro, Gunpo-si, Gyeonggi-do, Republic of Korea

2. Sample Description

- Product item : RFID Reader
- FCC ID : 2BR2ZAIR7X
- Model name : Air7X
- Manufacturer etc. : Airstandard Co.,Ltd.

3. Date of test : 2026.08.27

4. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

- Address : #3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea

5. Test method used : CFR §2.1093

6. Test result : PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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2026. 09. 04.

KES Co., Ltd.



REPORT REVISION HISTORY

Date	Test Report No.	Revision History
2026.09.04	KES-SR260195	Initial

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1. General Information

Applicant: Airstandard Co.,Ltd.
Applicant address: 3-508,509, 120 Gunpocheomdansaneop 2-ro, Gunpo-si, Gyeonggi-do, Republic of Korea
Test site: KES Co., Ltd.
Test site address: #3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea
Test Facility FCC Accreditation Designation No.: KR0100, Registration No.: 444148
FCC rule part(s): CFR §2.1093
FCC ID: 2BR2ZAIR7X
Test device serial No.: ☒ Production ☐ Pre-production ☐ Engineering

1.1. Highest SAR Summary

EUT Type	RFID Reader				
Brand Name(Applicant)	Airstandard Co.,Ltd.				
Model Name	Air7X				
Additional Model Name	N/A				
Antenna Type	Linear Polarized Antenna (RFID), Antenna gain: Ant.1 - 4.70 dBi, Ant.2 - 4.4 dBi – PIFA Antenna(Bluetooth), Antenna gain: 0.07 dBi				
EUT Stage	Identical Prototype				
Equipment Class	Band & Mode	TX Frequency	1g Head (W/Kg)	1g Body (W/Kg)	10g Extremity (W/Kg)
DSS	900 MHz Band	902.75 ~ 927.25 MHz	N/A	N/A	
Simultaneous SAR per 690783 D01v01r03			N/A	N/A	N/A

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 6 of this report;

1.2. Device Overview

Band & Mode	Operating Modes	Tx Frequency
900 MHz Band	RFID	902.75 ~ 927.25 MHz
Bluetooth	1 Mbps / 2 Mbps / 3 Mbps / LE 1 Mbps	2 402 ~ 2 480 MHz

1.3. Power Reduction for SAR

There is no power reduction used for any band/mode implemented in the device for SAR purposes.



1.4. Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06.

Maximum Output Power

Band / Mode		Modulated Average – Single Tx Chain (dBm)
900 MHz Band	Maximum	33.0
	Nominal	32.0
Bluetooth LE 1 Mbps	Maximum	2.5
	Nominal	1.5

1.5. Simultaneous Transmission Capabilities

This device does not support simultaneous transmission, as the 900 MHz RFID and Bluetooth functions operate selectively.

1.6. DUT Antenna Locations

The DUT antenna locations are included in Appendix F.

1.7. Near Field Communications (NFC) Antenna

This DUT does not support NFC function.



1.8. Miscellaneous SAR Test Considerations

This DUT supports Bluetooth(1 Mbps / 2 Mbps / 3 Mbps / LE 1 Mbps) and RFID. This DUT is a gun-type RFID device intended to be operated by hand. According to the TCB Workshop October 2020 – Handheld RFID/Barcode Scanner Form Factors, the Top Side was tested at a separation distance of 2.0 cm from the antenna to the hand, as declared by the manufacturer. The remaining sides were tested in direct contact with the human body using the extremity SAR test procedure.

Bluetooth is exempted in accordance with Section 4.3.1 of FCC KDB 447498 D01v06.

SAR-Based Exemption

Per FCC KDB 447498 D01v06, the 1g SAR exclusion threshold for distances < 50 mm is defined by the following equation:

$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Dist (mm)}} * \sqrt{\text{Frequency(GHz)}} \leq 3.0$$

Mode	Equation	Result	SAR Exclusion Threshold	Required SAR
Bluetooth 1 Mbps	$[(1.78/5)*\sqrt{2.480}]$	0.6	7.5	X
Bluetooth 2 Mbps	$[(1.78/5)*\sqrt{2.480}]$	0.6	7.5	X
Bluetooth 3 Mbps	$[(1.78/5)*\sqrt{2.480}]$	0.6	7.5	X
Bluetooth LE 1 Mbps	$[(1.78/5)*\sqrt{2.480}]$	0.6	7.5	X

1.9. Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 447498 D01v06 (General RF Exposure Guidance)
- FCC KDB Publication 865664 D01v01r04 (SAR Measurement 100 MHz to 6 GHz)
- FCC KDB Publication 865664 D02v01r02 (RF Exposure Reporting)
- FCC KDB Publication 690783 D01v01r03 (SAR Listings on Grants)
- October 2016 TCBC workshop Notes (DUT Holder perturbations)
- April 2019 TCBC workshop Notes (Tissue Simulating Liquids (TSL))
- October 2020 TCBC workshop Notes (Handheld RFID/Barcode Scanner Form Factors)

**1.10. Device Serial Numbers**

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units. The serial numbers used for each test are indicated alongside the results in Section 9.

Band & Mode	Serial Number
900 MHz Band	SAR#FCC





2. Introduction

The FCC and Innovation, Science, and Economic Development Canada have adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996 and Health Canada Safety Code 6 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices.

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3KHz to 300 GHz and Health Canada RF Exposure Guidelines Safety Code 6. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," Report No. Vol 74. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

2.1. SAR definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Equation 2-1)

$$SAR = \frac{d}{dt} \left(\frac{dW}{dm} \right) = \frac{d}{dt} \left(\frac{dW}{\rho dv} \right)$$

Equation 2-1 SAR Mathematical Equation

SAR is expressed in units of Watts per kilogram (W/kg).

$$SAR = \frac{\sigma |E|^2}{\rho}$$

Where: σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m³)

E = rms electrical field strength (V/m)

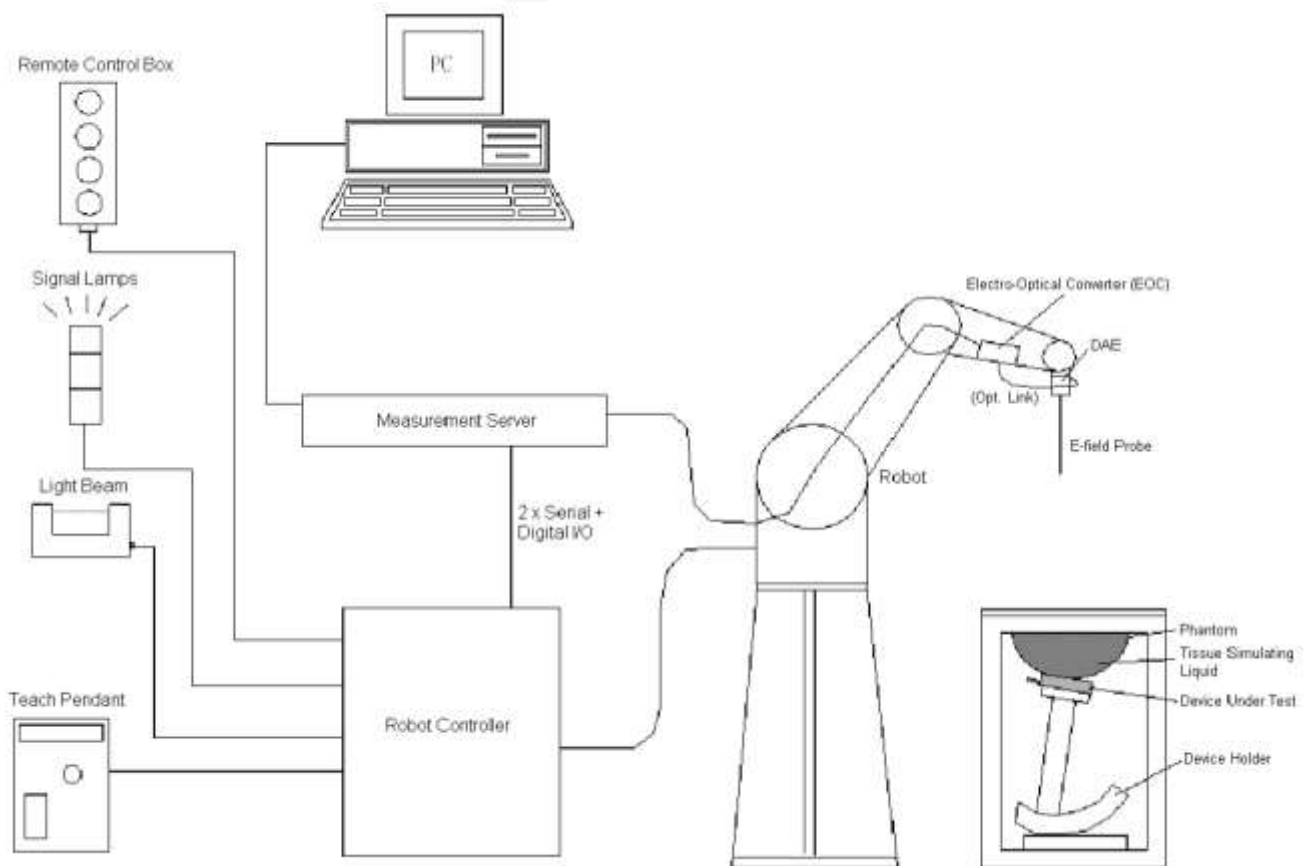
NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.



2.2. SAR Measurement Setup

A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE). An isotropic Field probe optimized and calibrated for the targeted measurement. Data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server. The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts. The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning. A computer running WinXP, Win7 or Win10 and the DASY6 software. Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc. The phantom, the device holder and other accessories according to the targeted measurement.





2.2.1. DASY Robot System

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY8) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ± 0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)



Figure 2-1 DASY6 System

2.2.2. SAR Probes

The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	4 MHz to 10 GHz Linearity: ± 0.2 dB	
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	



2.2.3. Data Acquisition Electronics (DAE)

Model	DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	< 5μV (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

2.2.4. Phantoms

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEC/IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	



2.2.5. Device Holders

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon = 3$ and loss tangent $\delta = 0.02$.

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	
Model	Mounting Device for Laptops and other Body-Worn Transmitters	
Construction	In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device (Body-Worn) enables testing of transmitter devices according to IEC 62209-2 specifications. The device holder can be locked for positioning at a flat phantom section.	
Material	Polyoxymethylene (POM), PET-G, Foam	

2.2.6. Dipole Antennas

Model	D-Serial	
Construction	Symmetrical dipole with 1/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 6500 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W ($f < 1\text{GHz}$), > 40 W ($f > 1\text{GHz}$)	



3. Dosimetric Assessment

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013:

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEC/IEEE 1528-2013.

2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.

3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):

- SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 3-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).
- After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.
- All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

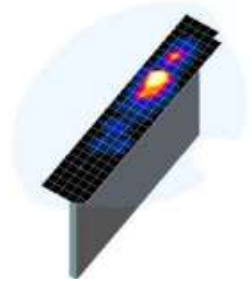


Figure 3-1 Sample

Table 3-1 Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

Frequency	Maximum Area Scan Resolution (mm) ($\Delta x_{\text{area}}, \Delta y_{\text{area}}$)	Maximum Zoom Scan Resolution (mm) ($\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}}$)	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
				$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(1)^*$	
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≤ 4	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	≥ 22



4. TEST CONFIGURATION POSITIONS

4.1. Device Holder

This device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon = 3$ and loss tangent $\delta = 0.02$.

4.2. Positioning for Testing

Based on FCC guidance and expected exposure conditions, the device was positioned with the outside of the device touching the flat phantom and such that the location of maximum SAR was captured during SAR testing. The SAR test setup photograph is included in Appendix E.





5. RF Exposure Limits

In order for users to be aware of the head operating requirements for meeting RF exposure compliance, Operating instruction and cautions statements are included in the user's manual.

5.1. Uncontrolled Environment

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

5.2. Controlled Environment

CONTROLLED ENVIRONMENTS are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table 5-1 SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

Human Exposure Limits		
	Uncontrolled Environment General Population (W/kg) or (mW/g)	Controlled Environment Occupational (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.



6. FCC Measurement Procedures

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

6.1. Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

Per KDB Publication 447498 D01v06, testing of other required channels within the operating mode of a frequency band is not required when the reported 1g or 10g SAR for the mid-band or highest output power channel is:

- ≤ 0.8 W/kg or 2.0 W/kg, for 1g or 10g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1g or 10g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1g or 10g respectively, when the transmission band is ≥ 200 MHz

6.2. Procedures Used to Establish RF signal for SAR

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. Establishing connections in this manner ensure a consistent means for testing SAR and are recommended for evaluating SAR. Devices under test are evaluated prior to testing, with a fully charged battery and were configured to operate at maximum output power. In order to verify that the device is tested throughout the SAR test at maximum output power, the SAR measurement system measures a "point SAR" at an arbitrary reference point at the start and end of the 1 gram SAR evaluation, to assess for any power drifts during the evaluation. If the power drift deviates by more than 5%, the SAR test and drift measurements are repeated.

As required by §§ 2.1091(d)(2) and 2.1093(d)(5), RF exposure compliance must be determined at the maximum average power level according to source-based time-averaging requirements to determine compliance for general population exposure conditions. Unless it is specified differently in the published RF exposure KDB procedures, these requirements also apply to test reduction and test exclusion considerations. Time-averaged maximum conducted output power applies to SAR and, as required by § 2.1091(c), time-averaged effective radiated power applies to MPE. When an antenna port is not available on the device to support conducted power measurement, such as for FRS (Part 95) devices and certain Part 15 transmitters with built-in integral antennas, the maximum output power and tolerance allowed for production units should be used to determine RF exposure test exclusion and compliance.



7. RF Conducted Power

7.1. 900 MHz Band RFID Conducted Power

Table 7-1 900 MHz Band RFID Conducted Power

Band	Mode	Ch.	Freq. [MHz]	Conducted Power		
				Ant.1	Ant.2	Ant.1+2
				[dBm]	[dBm]	[dBm]
900 MHz Band	RFID	F1	917.3	29.02	28.86	31.95
		F2	919.1	29.22	29.16	32.20
		F3	920.3	29.32	29.28	32.31

Note: The bolded channel at which the conducted Power was measured at the highest was recorded.

Figure 7-1 900 MHz Band RFID Transmission Plot



11:01:29 AM 08/26/2026

Equation 7-1 900 MHz Band RFID Duty Cycle Calculation

Duty Cycle of this device is 86.0 %

Duty Cycle[%] = (Pulse / Period) X 100 = (86.0 / 100.0) X 100 = 86.0 %



7.2. WLAN Conducted Power

Table 7-2 2.4 GHz Bluetooth Conducted Power

Mode	Data Rate	Ch.	Freq. [MHz]	Conducted Power	
				[dBm]	[mW]
Bluetooth	1 Mbps	0	2 402	2.09	1.62
		39	2 441	1.86	1.53
		78	2 480	2.13	1.63
	2 Mbps	0	2 402	1.98	1.58
		39	2 441	1.90	1.55
		78	2 480	2.21	1.66
	3 Mbps	0	2 402	2.05	1.60
		39	2 441	1.98	1.58
		78	2 480	2.37	1.73
	LE 1 Mbps	0	2 402	1.21	1.32
		19	2 440	1.07	1.28
		39	2 480	1.24	1.33

Note:

1. The bolded channel at which the conducted Power was measured at the highest was recorded.
2. Bluetooth is exempted in accordance with Section 4.3.1 of FCC KDB 447498 D01v06.



8. Tissue & System Verification

8.1. Tissue Verification

Table 8-1 Measured Tissue Properties

Tissue Type	Measured Frequency (MHz)	Tissue Temp (°C)	Measured Conductivity (σ)	Measured Permittivity (ϵ_r)	Target Conductivity (σ)	Target Permittivity (ϵ_r)	Conductivity Deviation (%)	Permittivity Deviation (%)	Test Date
HSL900	900.00	21.9	0.939	41.119	0.97	41.5	-3.20	-0.92	2026.08.27
	927.25		0.951	40.885	0.98	41.5	-3.09	-1.37	

Tissue Verification Notes:

1. The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.
2. Per April 2019 TCBC Workshop Notes, effective February 19, 2019, FCC has permitted the use of single head-tissue simulating liquid specified in IEC 62209-1 for all SAR tests.



9. SAR Data Summary

9.1. Standalone Extremity SAR Data

Table 9-1 900 MHz Band RFID Extremity SAR

Plot No.	Device Serial Number	Mode	Ch.	Test Position	Spacing (cm)	Ant. Status	Maximum Allowed Power [dBm]	Measured Conducted Power [dBm]	Scaling Factor (Duty Cycle)	Scaling Factor (Power)	Power Drift [dB]	Measured SAR 1 g (W/kg)	Reported SAR 1 g (W/kg)
1	SAR#FCC	900 MHz Band	F3	Top Side	2.0	1+2	33.00	32.31	1.163	1.172	-0.02	1.030	1.404
	SAR#FCC	900 MHz Band	F3	Bottom Side	0	1+2	33.00	32.31	1.163	1.172	0.19	0.012	0.016
	SAR#FCC	900 MHz Band	F3	Front Side	0	1+2	33.00	32.31	1.163	1.172	0.05	0.079	0.108
	SAR#FCC	900 MHz Band	F3	Rear Side	0	1+2	33.00	32.31	1.163	1.172	0.14	0.661	0.901
	SAR#FCC	900 MHz Band	F3	Right Side	0	1+2	33.00	32.31	1.163	1.172	0.14	0.362	0.494
	SAR#FCC	900 MHz Band	F3	Left Side	0	1+2	33.00	32.31	1.163	1.172	0.03	0.400	0.545
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population									Body 1.6 W/kg (mW/g) Averaged over 1 gram				



9.2. SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. According to the TCB Workshop October 2020 – Handheld RFID/Barcode Scanner Form Factors, the Top Side was tested at a separation distance of 2.0 cm from the antenna to the hand, as declared by the manufacturer. The remaining sides were tested in direct contact with the human body using the extremity SAR test procedure.





10. SAR Measurement Uncertainty

Table 10-1 Uncertainty of SAR equipment for measurement 0.3 GHz to 3 GHz

A	b	c		d	e=f(d, k)	f	g	h=c x f/e	i=c x g/e	k
Uncertainty component	Reference	Tol. (± %)		Prob. dist.	Div.	Ci (1 g)	Ci (10 g)	1 g <i>u_i</i> (± %)	10 g <i>u_i</i> (± %)	<i>v_i</i>
Measurement system										
Probe calibration	4	5.5		N	1	1	1	5.50	5.50	∞
Axial isotropy	5	4.7		R	1.732	0.71	0.71	1.93	1.93	∞
Hemispherical isotropy	5	9.6		R	1.732	0.71	0.71	3.94	3.94	∞
Boundary effect	6	1		R	1.732	1	1	0.58	0.58	∞
Linearity	7	4.7		R	1.732	1	1	2.71	2.71	∞
System detection limits	9	0.25		R	1.732	1	1	0.14	0.14	∞
Modulation response	8	2.4		R	1.732	1	1	1.39	1.39	∞
Readout electronics	10	0.3		N	1	1	1	0.30	0.30	∞
Response time	11	0		R	1.732	1	1	0.00	0.00	∞
Integration time	12	2.6		R	1.732	1	1	1.50	1.50	∞
RF ambient conditions—noise	13	3		R	1.732	1	1	1.73	1.73	∞
RF ambient conditions—reflections	13	3		R	1.732	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	14	0.4		R	1.732	1	1	0.23	0.23	∞
Probe positioning with respect to phantom shell	15	2.9		R	1.732	1	1	1.67	1.67	∞
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	16	2		R	1.732	1	1	1.15	1.15	∞
Test sample related										
Test sample positioning	17	2.9	2.2	N	1	1	1	2.9	2.2	41
Device holder uncertainty	18	4	3.1	N	1	1	1	4	3.1	59
Output power variation—SAR drift	20	5		R	1.732	1	1	2.89	2.89	∞
measurement										
SAR scaling	19	0		R	1.732	1	1	0.00	0.00	∞
Phantom and tissue parameters										
Phantom shell uncertainty—shape, thickness and permittivity	21	6.1		R	1.732	1	1	3.52	3.52	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	22	1.9		N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	22	5.87		N	1	0.78	0.71	4.58	4.17	35
Liquid permittivity measurement	22	2.27		N	1	0.23	0.26	0.52	0.59	35
Liquid conductivity—temperature uncertainty	23	2.27		R	1.732	0.78	0.71	1.02	0.93	∞
Liquid permittivity—temperature uncertainty	23	2.01		R	1.732	0.23	0.26	0.27	0.30	∞
Combined standard uncertainty				RSS				12.00	11.40	<i>v_{eff}</i>
Expanded uncertainty (95% confidence interval)				<i>k</i> = 2				24.00	22.80	

**11. Equipment List**

Equipment	Manufacturer	Model	Serial No.	Cal. Date	Next Cal. Date	Cal. Interval
SAR Chamber-1	Dymstec	N/A	N/A	N/A	N/A	N/A
Thermo-Hygrostat	HANKUK Moonters Co.,Ltd	HK-030-AU1	1506231	N/A	N/A	N/A
Staubli Robot Unit	Staubli	TX60L	F15/5Y7QA1/A/01	N/A	N/A	N/A
Electro Optical Converter	SPEAG	EOC60	1096	N/A	N/A	N/A
2 mm Oval Phantom V6.0	SPEAG	QD OVA 003 AA	2036	N/A	N/A	N/A
Device Holder	SPEAG	Mounting Device	SD 000 H01 KA	N/A	N/A	N/A
Data Acquisition Electronics	SPEAG	DAE4	1460	2025-11-19	2026-11-19	1 Year
E-Field Probe	SPEAG	EX3DV4	7359	2026-06-04	2027-06-04	1 Year
Validation Dipole Antenna	SPEAG	D900V2	094	2025-01-17	2027-01-17	2 Years
RF Signal Generator	ANRITSU	68369B	992113	2026-01-06	2027-01-06	1 Year
RF POWER AMPLIFIER	L2 Microwave	BPA10T60W2-H	SH-02-0001	2026-01-06	2027-01-06	1 Year
DUAL DIRECTIONAL COUPLER	HP	778D-012	16468	2026-06-08	2027-06-08	1 Year
EPM Series Power Meter	HP	E4419B	MY45101506	2026-01-06	2027-01-06	1 Year
E-Series AVG Power Sensor	Agilent	E9300H	MY41495967	2026-01-06	2027-01-06	1 Year
E-Series AVG Power Sensor	Agilent	E9300H	US39215405	2026-01-06	2027-01-06	1 Year
Power Meter	Anritsu	ML2495A	1438001	2026-01-29	2027-01-29	1 Year
Pulse Power Sensor	Anritsu	MA2411B	1339205	2026-01-29	2027-01-29	1 Year
ATTENUATOR	Agilent	8493C	52759	2026-01-06	2027-01-06	1 Year
ATTENUATOR	HP	8491B	22234	2026-01-06	2027-01-06	1 Year
ATTENUATOR	Agilent	8491B	51229	2026-06-08	2027-06-08	1 Year
Low Pass Filter	FILTRON	F-LPCA-KOO1430	1408003S	2026-01-06	2027-01-06	1 Year
DIELECTRIC ASSESSMENT KIT	SPEAG	DAK3.5	1205	2026-01-20	2027-01-20	1 Year
Network Analyzer	HP	8720C	3124A01008	2026-06-08	2027-06-08	1 Year
THERMO HYGROMETER	CAS	TE-201	NONE	2026-01-12	2027-01-12	1 Year
DIGITAL THERMOMETER	NONE	TP101	191105	2026-01-08	2027-01-08	1 Year
SPECTRUM ANALYZER	R&S	FSV30	101389	2026-01-06	2027-01-06	1 Year

Note:

1. CBT (Calibration 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. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.
2. All equipment was used solely within its calibration period.



12. Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.





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Appendix A. SAR Plots for System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.





Test Laboratory: KES Co., Ltd.

Date: 2026-08-27

System Verification for 900 MHz**DUT: Dipole D900V2-SN: 094**

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: HSL900 Medium parameters used: $f = 900$ MHz; $\sigma = 0.939$ S/m; $\epsilon_r = 41.119$; $\rho = 1000$ kg/m³

Ambient Temperature 22.7 °C; Liquid Temperature 21.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7359; ConvF(9.25, 8.72, 9.03) @ 900 MHz; Calibrated: 2026-06-04
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1460; Calibrated: 2025-11-19
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=250mW/Area Scan (41x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.92 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 67.76 V/m; Power Drift = 0.01 dB

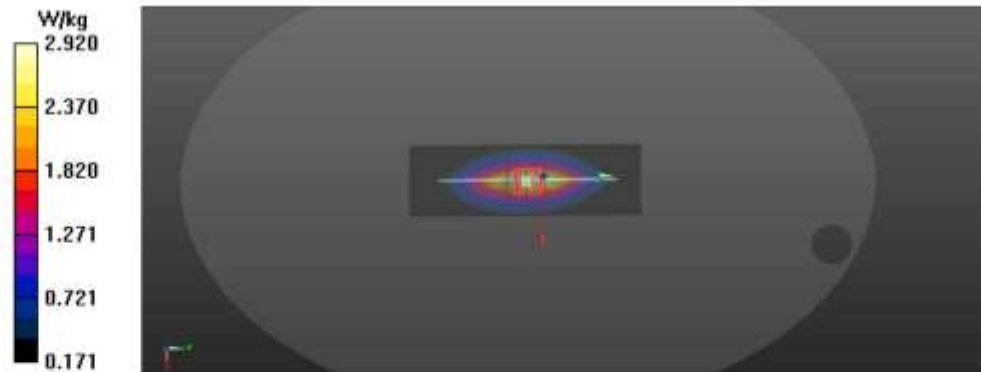
Peak SAR (extrapolated) = 4.64 W/kg

SAR(1 g) = 2.77 W/kg; SAR(10 g) = 1.68 W/kg

Smallest distance from peaks to all points 3 dB below = 12.8 mm

Ratio of SAR at M2 to SAR at M1 = 59.3%

Maximum value of SAR (measured) = 4.00 W/kg





Appendix B. SAR Plots for SAR Measurement

The plots for SAR measurement are shown as follows.





Test Laboratory: KES Co., Ltd.

Date: 2026-08-27

P01_900 MHz Band_RFID_Top Side_2.0 cm_Ch.F3_Ant. 1+2**DUT: Air7X**

Communication System: 900 MHz; Frequency: 927.25 MHz; Duty Cycle: 1:1

Medium: HSL900 Medium parameters used: $f = 927.25$ MHz; $\sigma = 0.951$ S/m; $\epsilon_r = 40.885$; $\rho = 1000$ kg/m³

Ambient Temperature 22.6 °C; Liquid Temperature 21.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7359; ConvF(9.25, 8.72, 9.03) @ 927.25 MHz; Calibrated: 2026-06-04
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1460; Calibrated: 2025-11-19
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- Area Scan (101x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.81 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 35.01 V/m; Power Drift = -0.02 dB

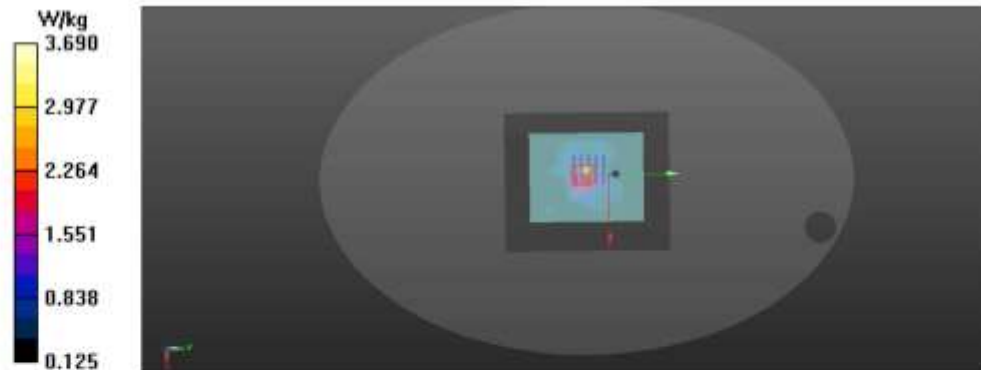
Peak SAR (extrapolated) = 4.23 W/kg

SAR(1 g) = 1.59 W/kg; SAR(10 g) = 1.03 W/kg

Smallest distance from peaks to all points 3 dB below = 8.8 mm

Ratio of SAR at M2 to SAR at M1 = 46.6%

Maximum value of SAR (measured) = 3.69 W/kg





Appendix C. Probe & Dipole Antenna Calibration Certificates

The SPEAG calibration certificates are shown as follows.



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

Zeughausstrasse 43, 8004 Zurich, Switzerland

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

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificatesAccreditation No.: **SCS 0108**

Client

KES

Gyeonggi-do, Republic of Korea

Certificate No.

EX-7359_Jun26**CALIBRATION CERTIFICATE**

Object

EX3DV4 - SN:7359

Calibration procedure(s)

QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6,
QA CAL-25.v8, QA CAL-48.v2
Calibration procedure for dosimetric E-field probes

Calibration date

June 04, 2026

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 $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Calibration Date (Certificate No.)	Sched. Cal.
Power Sensor R&S NRP40T	SN: 101861	22-Apr-26 (No. 2026-007003)	Apr-27
N-type mismatch combination	SN: L1119	26-Mar-26 (No. 2026-005592)	Mar-27
OCP DAK-12	SN: 1016	16-Sept-25 (No. OCP-DAK12-1016_Sep25)	Sep-26
OCP DAK-3.5	SN: 1249	16-Sept-25 (No. OCP-DAK3.5-1249_Sep25)	Sep-26
Reference Probe EX3DV4	SN: 7349	29-Jan-26 (No. EX3-7349_Jan26)	Jan-27
DAE4	SN: 1301	22-Jan-26 (No. DAE4-1301_Jan26)	Jan-27

Secondary Standards	ID	Check Date (in house)	Sched. Check
ACAP 2020 Setup 1	SN: L1404	01-Oct-25 (No. IHCK_ACAP2020-1_Oct25)	Oct-26
OCP DAK-12	SN: 1029	24-Feb-26 (No. OCP-DAK12-1029_Feb26)	Feb-27
OCP DAK-3.5	SN: 1336	10-Dec-25 (No. OCP-DAK3.5-1336_Dec25)	Dec-26
Network Analyzer Keysight E5063A	SN: MY54504221	30-Sept-24 (No. 675-CAL18-S4489-Sep24)	Sep-26

	Name	Function	Signature
Calibrated by	Jeffrey Katzman	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: June 04, 2026

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



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



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

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

Accreditation No.: **SCS 0108**

Glossary

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

- 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-Worn Wireless Communication Devices – Part 1528: Human Models, Instrumentation and Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\theta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} do not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,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.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal. DCP is independent of frequency and medium.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,y,z}**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweeps for specific modulation signals. The parameters are independent of frequency and medium. 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 $f \leq 800$ 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 NORM_{x,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 NORM_x (no uncertainty required).



EX3DV4 - SN:7359

June 04, 2026

Parameters of Probe: EX3DV4 - SN:7359**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k = 2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.59	0.59	0.51	$\pm 10.1\%$
DCP (mV) ^B	104.3	106.1	113.5	$\pm 4.7\%$

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B $\text{dB}\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Max Unc ^E k = 2
0	Continuous Wave	X	0.00	0.00	1.00	0.00	122.9	$\pm 1.3\%$	$\pm 4.7\%$
		Y	0.00	0.00	1.00		121.6		
		Z	0.00	0.00	1.00		146.8		
10352	Pulse (D=10%, T=5 ms)	X	0.34	62.06	15.32	10.00	23.0	$\pm 1.9\%$	$\pm 9.6\%$
		Y	0.35	61.70	15.25		24.0		
		Z	0.00	61.18	17.11		23.0		
10353	Pulse (D=20%, T=5 ms)	X	0.32	65.07	15.37	6.99	46.0	$\pm 1.8\%$	$\pm 9.6\%$
		Y	0.33	64.71	15.29		47.0		
		Z	0.00	64.19	17.15		46.0		
10354	Pulse (D=40%, T=5 ms)	X	0.30	68.08	15.41	3.98	93.0	$\pm 1.8\%$	$\pm 9.6\%$
		Y	0.31	67.72	15.34		94.0		
		Z	0.00	68.53	17.19		92.0		
10355	Pulse (D=60%, T=5 ms)	X	0.28	69.84	15.44	2.22	139.0	$\pm 1.6\%$	$\pm 9.6\%$
		Y	0.29	69.48	15.37		141.0		
		Z	0.00	68.96	17.24		138.0		
10387	Random (BW=1 MHz, MOD=QPSK)	X	0.00	66.96	16.50	0.23	107.0	$\pm 1.5\%$	$\pm 9.6\%$
		Y	0.00	66.60	16.52		109.0		
		Z	0.02	66.08	18.69		106.0		
10388	Random (BW=10 MHz, MOD=QPSK)	X	0.85	66.84	14.57	0.00	114.0	$\pm 2.6\%$	$\pm 9.6\%$
		Y	0.81	66.48	14.52		116.0		
		Z	0.34	65.96	15.99		113.0		
10396	Random (BW=100 kHz, MOD=64QAM)	X	0.00	65.79	17.86	1.63	81.0	$\pm 3.8\%$	$\pm 9.6\%$
		Y	0.00	64.16	17.92		82.0		
		Z	0.13	64.91	19.56		80.0		
10399	Random (BW=40 MHz, MOD=64QAM)	X	2.07	65.79	14.00	0.00	105.0	$\pm 4.1\%$	$\pm 9.6\%$
		Y	1.99	65.43	13.87		107.0		
		Z	1.51	64.90	14.01		104.0		
10414	Random (BW=40 MHz, HIGH PAR)	X	2.55	63.52	13.96	0.00	77.0	$\pm 2.5\%$	$\pm 9.6\%$
		Y	2.39	63.16	13.83		78.0		
		Z	1.85	62.64	13.86		76.0		

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^2 -field uncertainty inside TSL (see Pages 5 and 6).^B Linearization parameter uncertainty for maximum specified field strength.^E Uncertainty is determined as the maximum deviation from linearity, assuming a rectangular distribution, and is expressed in terms of the squared field value.



EX3DV4 - SN:7359

June 04, 2026

Parameters of Probe: EX3DV4 - SN:7359**Sensor Model Parameters**

	C1 IF	C2 IF	α V^{-1}	T1 $ms V^{-2}$	T2 $ms V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
x	9.9	72.69	34.34	2.55	0.00	4.90	0.39	0.00	1.00
y	9.4	68.16	33.76	3.16	0.00	4.90	0.45	0.00	1.00
z	7.4	53.11	33.63	3.47	0.00	4.92	0.38	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	50.0°
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	12 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.



EX3DV4 - SN:7359

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Parameters of Probe: EX3DV4 - SN:7359**Calibration Parameter Determined in HSL**

f (MHz) ^C	Relative Permittivity ^F	Conductivity ^F (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc ^H (k = 2)
450	43.5	0.87	11.12	11.12	11.12	0.16	1.30	±13.3%
600	42.7	0.88	10.26	10.26	10.26	0.10	1.25	±13.3%
750	41.9	0.89	9.78	9.22	9.55	0.35	1.27	±11.0%
835	41.5	0.90	9.41	8.87	9.19	0.35	1.27	±11.0%
900	41.5	0.97	9.25	8.72	9.03	0.35	1.27	±11.0%
1750	40.1	1.37	8.02	7.56	7.83	0.36	1.27	±11.0%
1900	40.0	1.40	7.91	7.46	7.73	0.36	1.27	±11.0%
1950	40.0	1.40	7.88	7.43	7.69	0.36	1.27	±11.0%
2450	39.2	1.80	7.50	7.07	7.33	0.37	1.27	±11.0%
2600	39.0	1.96	7.39	6.96	7.21	0.37	1.27	±11.0%
3500	37.9	2.91	6.73	6.35	6.57	0.38	1.27	±13.1%
3700	37.7	3.12	6.60	6.23	6.45	0.38	1.27	±13.1%
4600	36.7	4.04	6.16	5.80	6.01	0.39	1.27	±13.1%
4800	36.4	4.25	6.08	5.73	5.94	0.40	1.27	±13.1%
4950	36.3	4.40	6.02	5.68	5.88	0.38	1.27	±13.1%
5200	36.0	4.66	5.54	5.23	5.41	0.35	1.27	±13.1%
5300	35.9	4.76	5.40	5.10	5.28	0.34	1.27	±13.1%
5500	35.6	4.96	5.07	4.78	4.95	0.32	1.27	±13.1%
5600	35.5	5.07	5.08	4.79	4.96	0.30	1.27	±13.1%
5800	35.3	5.27	4.97	4.69	4.85	0.28	1.27	±13.1%

^C Frequency validity above 300 MHz of ±100 MHz only applies for DASY v4.4 and higher (see page 2), else it is restricted to ±50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ±10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. 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 The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10% if SAR correction is applied.

^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 3–8 GHz at any distance larger than half the probe tip diameter from the boundary.

^H The stated uncertainty is the total calibration uncertainty (k = 2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1528:2020.



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Parameters of Probe: EX3DV4 - SN:7359

Calibration Parameter Determined in HSL

f (MHz) ^C	Relative Permittivity ^F	Conductivity ^F (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc ^H (k = 2)
6500	34.5	6.07	5.54	5.22	5.41	0.20	1.27	±18.6%

^C Frequency validity is -600/+700 MHz at 6.5 GHz, ±700 MHz at or above 7 GHz, and ±150 MHz at 9.85 GHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.

^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; 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.

^H The stated uncertainty is the total calibration uncertainty (k = 2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1528:2020.

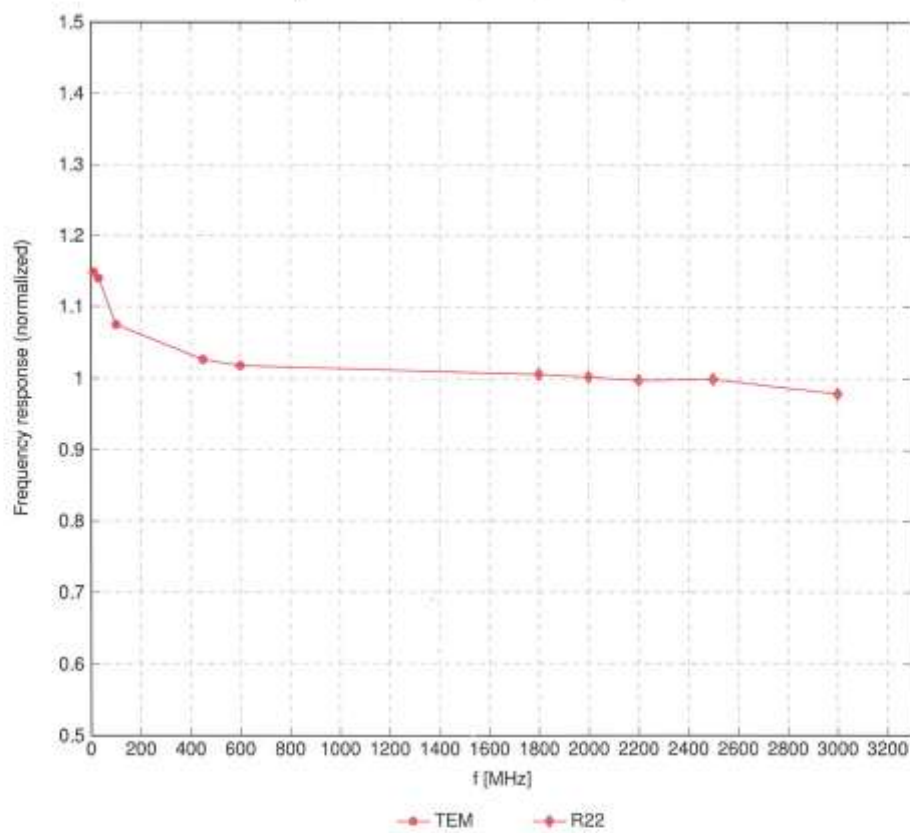


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Frequency Response of E-Field

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



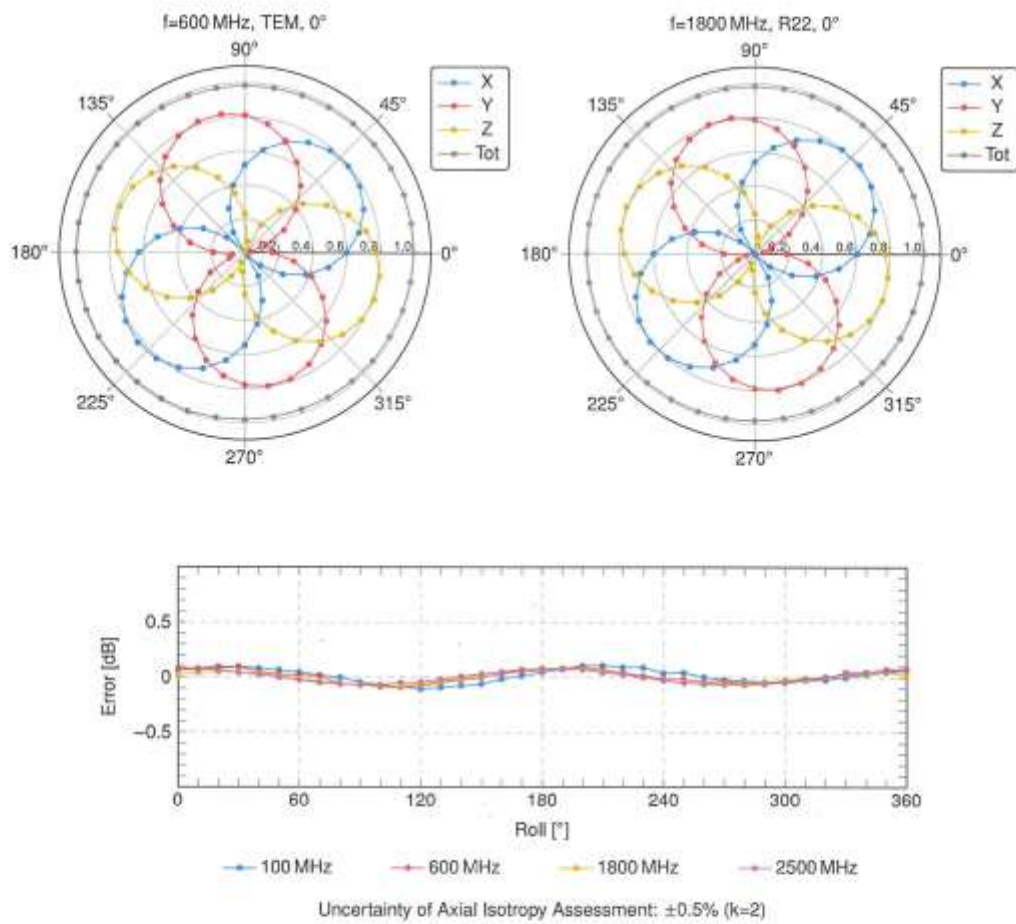
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)



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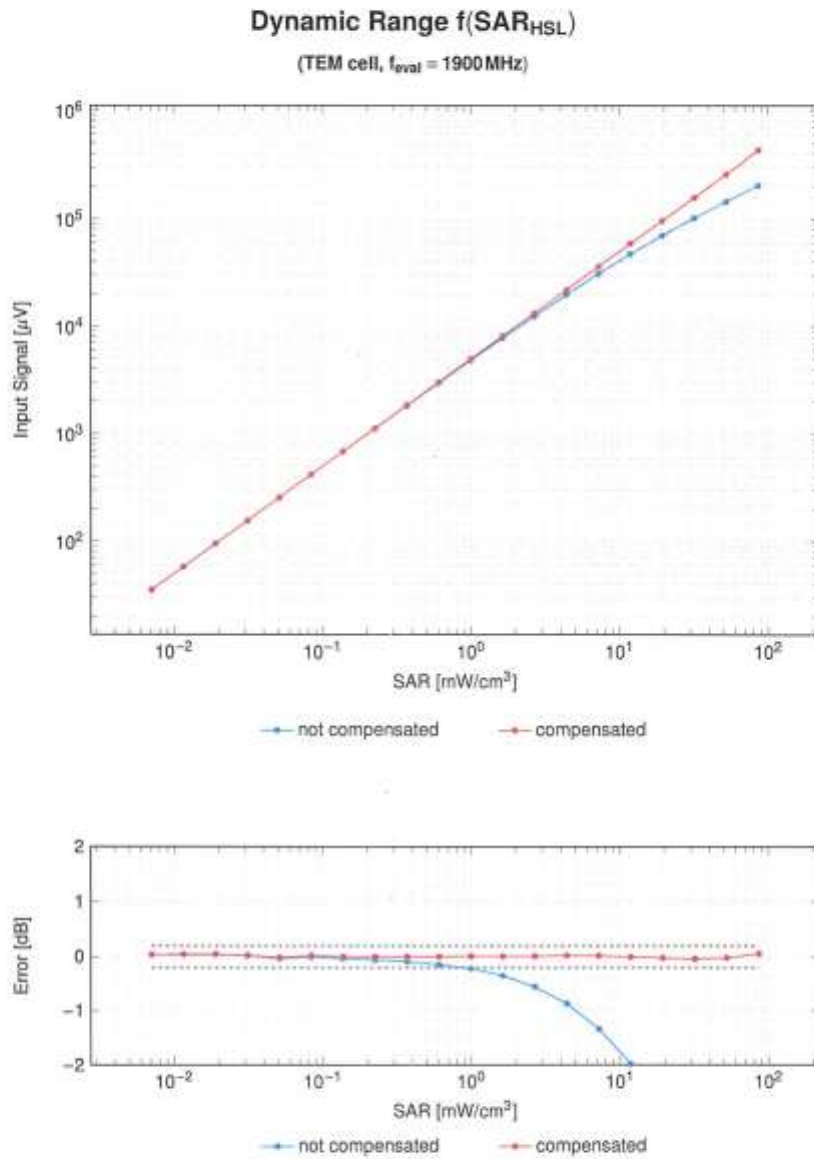
Receiving Pattern (ϕ), $\theta = 0^\circ$





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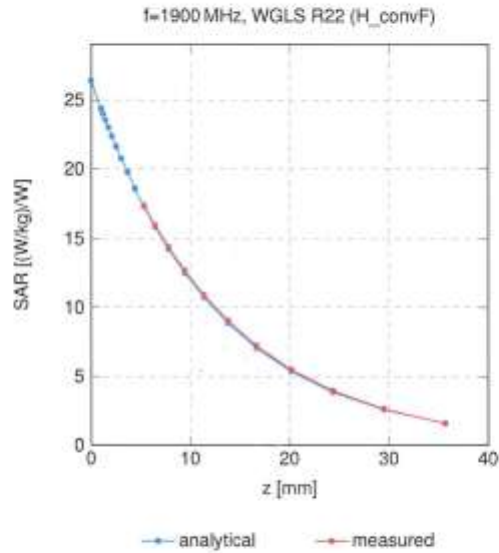




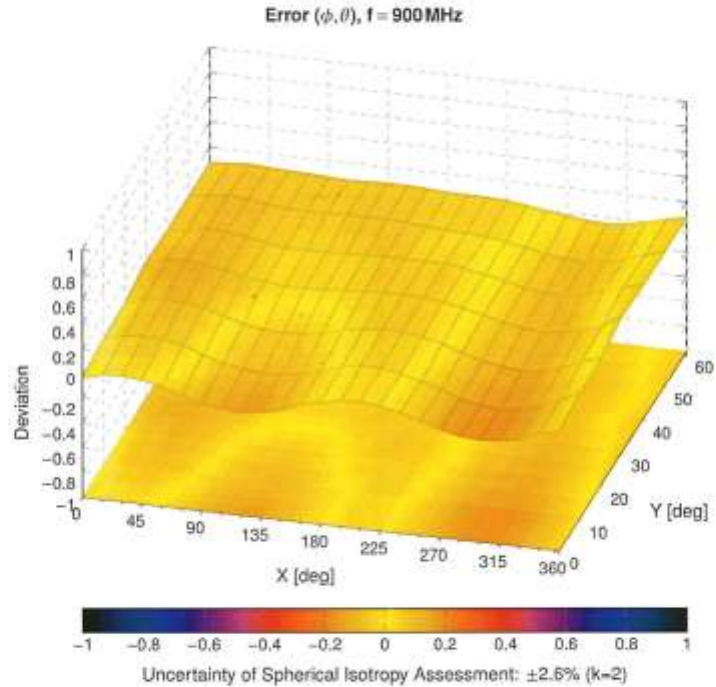
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Conversion Factor Assessment



Deviation from Isotropy in Liquid





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Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name ^D	Group	PAR (dB)	Unc ^E k = 2
0		Continuous Wave	CW	0.00	±4.7
10010	CAB	Pulse (D=10%, T=100 ms)	Test	10.00	±9.6
10011	CAC	Ref. 99, RMC, QPSK, 5.0 MHz	WCDMA	2.91	±9.6
10012	CAB	DSSS, DBPSK, 1.0 Mbps, 92.5% DC	WLAN	1.87	±9.6
10013	CAB	OFDM, BPSK, 6.0 Mbps, 72.1% DC	WLAN	9.46	±9.6
10021	DAC	Voice, GMSK, 1 slot(s)	GSM	9.39	±9.6
10023	DAC	Data, GMSK, 1 slot(s)	GSM	9.57	±9.6
10024	DAC	Data, GMSK, 2 slot(s)	GSM	6.56	±9.6
10025	DAC	Data, 8PSK, 1 slot(s)	GSM	12.62	±9.6
10026	DAC	Data, 8PSK, 2 slot(s)	GSM	9.55	±9.6
10027	DAC	Data, GMSK, 3 slot(s)	GSM	4.80	±9.6
10028	DAC	Data, GMSK, 4 slot(s)	GSM	3.55	±9.6
10029	DAC	Data, 8PSK, 3 slot(s)	GSM	7.76	±9.6
10030	CAA	BR, DH1, GFSK	Bluetooth	5.30	±9.6
10031	CAA	BR, DH3, GFSK	Bluetooth	1.87	±9.6
10032	CAA	BR, DH5, GFSK	Bluetooth	1.16	±9.6
10033	CAA	EDR, DH1, pi/4-DQPSK	Bluetooth	7.74	±9.6
10034	CAA	EDR, DH3, pi/4-DQPSK	Bluetooth	4.53	±9.6
10035	CAA	EDR, DH5, pi/4-DQPSK	Bluetooth	3.83	±9.6
10036	CAA	EDR, DH1, 8-PSK	Bluetooth	8.01	±9.6
10037	CAA	EDR, DH3, 8-PSK	Bluetooth	4.77	±9.6
10038	CAA	EDR, DH5, 8-PSK	Bluetooth	4.10	±9.6
10039	CAB	RC1, 1xRTT	CDMA2000	4.57	±9.6
10048	CAA	Full Slot, GFSK, 1 slot(s)	DECT	13.80	±9.6
10049	CAA	Double Slot, GFSK, 2 slot(s)	DECT	10.79	±9.6
10056	CAA	TD-SCDMA, QPSK, 1.6 MHz	TD-SCDMA	11.01	±9.6
10058	DAC	Data, 8PSK, 4 slot(s)	GSM	6.52	±9.6
10059	CAB	DSSS, DQPSK, 2.0 Mbps, 87.4% DC	WLAN	2.12	±9.6
10060	CAB	HR-DSSS, DQPSK, 5.5 Mbps, 72.7% DC	WLAN	2.83	±9.6
10061	CAB	HR-DSSS, DQPSK, 11.0 Mbps, 57.5% DC	WLAN	3.60	±9.6
10062	CAE	OFDM, BPSK, 6.0 Mbps, 89.1% DC	WLAN	8.68	±9.6
10063	CAE	OFDM, BPSK, 9.0 Mbps, 85.3% DC	WLAN	8.63	±9.6
10064	CAE	OFDM, QPSK, 12.0 Mbps, 82.0% DC	WLAN	9.08	±9.6
10065	CAE	OFDM, QPSK, 18.0 Mbps, 76.0% DC	WLAN	9.00	±9.6
10066	CAE	OFDM, 16QAM, 24.0 Mbps, 70.6% DC	WLAN	9.38	±9.6
10067	CAE	OFDM, 16QAM, 36.0 Mbps, 62.9% DC	WLAN	10.12	±9.6
10068	CAE	OFDM, 64QAM, 48.0 Mbps, 56.8% DC	WLAN	10.24	±9.6
10069	CAE	OFDM, 64QAM, 54.0 Mbps, 54.4% DC	WLAN	10.56	±9.6
10071	CAB	OFDM, BPSK, 9.0 Mbps, 65.1% DC	WLAN	9.83	±9.6
10072	CAB	OFDM, QPSK, 12.0 Mbps, 60.1% DC	WLAN	9.82	±9.6
10073	CAB	OFDM, QPSK, 18.0 Mbps, 53.1% DC	WLAN	9.94	±9.6
10074	CAB	OFDM, 16QAM, 24.0 Mbps, 48.5% DC	WLAN	10.30	±9.6
10075	CAB	OFDM, 16QAM, 36.0 Mbps, 42.9% DC	WLAN	10.77	±9.6
10076	CAB	OFDM, 64QAM, 48.0 Mbps, 39.5% DC	WLAN	10.94	±9.6
10077	CAB	OFDM, 64QAM, 54.0 Mbps, 38.5% DC	WLAN	11.00	±9.6
10081	CAB	RC3, 1xRTT	CDMA2000	3.97	±9.6
10097	CAC	Ref. 5 HSDPA, QPSK, 5.0 MHz	WCDMA	3.98	±9.6
10098	CAC	Ref. 6 HSUPA, Subset 2, QPSK, 5.0 MHz	WCDMA	3.98	±9.6
10100	CAF	20.0 MHz, QPSK, 100% RB	LTE-FDD	5.67	±9.6
10101	CAF	20.0 MHz, 16QAM, 100% RB	LTE-FDD	6.42	±9.6
10102	CAF	20.0 MHz, 64QAM, 100% RB	LTE-FDD	6.60	±9.6
10103	CAH	20.0 MHz, QPSK, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.29	±9.6
10104	CAH	20.0 MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.97	±9.6
10105	CAH	20.0 MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	10.01	±9.6
10108	CAH	10.0 MHz, QPSK, 100% RB	LTE-FDD	5.80	±9.6
10109	CAH	10.0 MHz, 16QAM, 100% RB	LTE-FDD	6.43	±9.6
10110	CAH	5.0 MHz, QPSK, 100% RB	LTE-FDD	5.75	±9.6
10111	CAH	5.0 MHz, 16QAM, 100% RB	LTE-FDD	6.44	±9.6
10112	CAH	10.0 MHz, 64QAM, 100% RB	LTE-FDD	6.59	±9.6
10113	CAH	5.0 MHz, 64QAM, 100% RB	LTE-FDD	6.62	±9.6
10114	CAE	HT40 Greenfield, MCS0 (13.5 Mbps), 99.7% DC	WLAN	8.10	±9.6
10115	CAE	HT40 Greenfield, MCS4 (81.0 Mbps), 99.7% DC	WLAN	8.46	±9.6
10116	CAE	HT40 Greenfield, MCS7 (135.0 Mbps), 99.7% DC	WLAN	8.15	±9.6



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UID	Rev	Communication System Name ^D	Group	PAR (dB)	Unc ^E k = 2
10117	CAE	HT40 Mixed, MCS0 (13.5 Mbps), 99.7% DC	WLAN	8.07	±9.6
10118	CAE	HT40 Mixed, MCS4 (81.0 Mbps), 99.7% DC	WLAN	8.59	±9.6
10119	CAE	HT40 Mixed, MCS7 (135.0 Mbps), 99.7% DC	WLAN	8.13	±9.6
10140	CAF	15.0 MHz, 16QAM, 100% RB	LTE-FDD	6.49	±9.6
10141	CAF	15.0 MHz, 64QAM, 100% RB	LTE-FDD	6.53	±9.6
10142	CAF	3.0 MHz, QPSK, 100% RB	LTE-FDD	5.73	±9.6
10143	CAF	3.0 MHz, 16QAM, 100% RB	LTE-FDD	6.35	±9.6
10144	CAF	3.0 MHz, 64QAM, 100% RB	LTE-FDD	6.65	±9.6
10145	CAG	1.4 MHz, QPSK, 100% RB	LTE-FDD	5.76	±9.6
10146	CAG	1.4 MHz, 16QAM, 100% RB	LTE-FDD	6.41	±9.6
10147	CAG	1.4 MHz, 64QAM, 100% RB	LTE-FDD	6.72	±9.6
10149	CAF	20.0 MHz, 16QAM, 50% RB	LTE-FDD	6.42	±9.6
10150	CAF	20.0 MHz, 64QAM, 50% RB	LTE-FDD	6.60	±9.6
10151	CAH	20.0 MHz, QPSK, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.26	±9.6
10152	CAH	20.0 MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.92	±9.6
10153	CAH	20.0 MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	10.05	±9.6
10154	CAH	10.0 MHz, QPSK, 50% RB	LTE-FDD	5.75	±9.6
10155	CAH	10.0 MHz, 16QAM, 50% RB	LTE-FDD	6.43	±9.6
10156	CAH	5.0 MHz, QPSK, 50% RB	LTE-FDD	5.79	±9.6
10157	CAH	5.0 MHz, 16QAM, 50% RB	LTE-FDD	6.49	±9.6
10158	CAH	10.0 MHz, 64QAM, 50% RB	LTE-FDD	6.62	±9.6
10159	CAH	5.0 MHz, 64QAM, 50% RB	LTE-FDD	6.56	±9.6
10160	CAF	15.0 MHz, QPSK, 50% RB	LTE-FDD	5.82	±9.6
10161	CAF	15.0 MHz, 16QAM, 50% RB	LTE-FDD	6.43	±9.6
10162	CAF	15.0 MHz, 64QAM, 50% RB	LTE-FDD	6.58	±9.6
10166	CAG	1.4 MHz, QPSK, 50% RB	LTE-FDD	5.46	±9.6
10167	CAG	1.4 MHz, 16QAM, 50% RB	LTE-FDD	6.21	±9.6
10168	CAG	1.4 MHz, 64QAM, 50% RB	LTE-FDD	6.79	±9.6
10169	CAF	20.0 MHz, QPSK, 1 RB	LTE-FDD	5.73	±9.6
10170	CAF	20.0 MHz, 16QAM, 1 RB	LTE-FDD	6.52	±9.6
10171	AAF	20.0 MHz, 64QAM, 1 RB	LTE-FDD	6.49	±9.6
10172	CAH	20.0 MHz, QPSK, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.21	±9.6
10173	CAH	20.0 MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.48	±9.6
10174	CAH	20.0 MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	10.25	±9.6
10175	CAH	10.0 MHz, QPSK, 1 RB	LTE-FDD	5.72	±9.6
10176	CAH	10.0 MHz, 16QAM, 1 RB	LTE-FDD	6.52	±9.6
10177	CAJ	5.0 MHz, QPSK, 1 RB	LTE-FDD	5.73	±9.6
10178	CAH	5.0 MHz, 16QAM, 1 RB	LTE-FDD	6.52	±9.6
10179	CAH	10.0 MHz, 64QAM, 1 RB	LTE-FDD	6.50	±9.6
10180	CAH	5.0 MHz, 64QAM, 1 RB	LTE-FDD	6.50	±9.6
10181	CAF	15.0 MHz, QPSK, 1 RB	LTE-FDD	5.72	±9.6
10182	CAF	15.0 MHz, 16QAM, 1 RB	LTE-FDD	6.52	±9.6
10183	AAE	15.0 MHz, 64QAM, 1 RB	LTE-FDD	6.50	±9.6
10184	CAF	3.0 MHz, QPSK, 1 RB	LTE-FDD	5.73	±9.6
10185	CAF	3.0 MHz, 16QAM, 1 RB	LTE-FDD	6.51	±9.6
10186	AAF	3.0 MHz, 64QAM, 1 RB	LTE-FDD	6.50	±9.6
10187	CAG	1.4 MHz, QPSK, 1 RB	LTE-FDD	5.73	±9.6
10188	CAG	1.4 MHz, 16QAM, 1 RB	LTE-FDD	6.52	±9.6
10189	AAG	1.4 MHz, 64QAM, 1 RB	LTE-FDD	6.50	±9.6
10193	CAE	HT20 Greenfield, MCS0 (6.5 Mbps), 99.4% DC	WLAN	8.09	±9.6
10194	CAE	HT20 Greenfield, MCS4 (39.0 Mbps), 99.5% DC	WLAN	8.12	±9.6
10195	CAE	HT20 Greenfield, MCS7 (65.0 Mbps), 99.5% DC	WLAN	8.21	±9.6
10196	CAE	HT20 Mixed, MCS0 (6.5 Mbps), 99.4% DC	WLAN	8.10	±9.6
10197	CAE	HT20 Mixed, MCS4 (39.0 Mbps), 99.5% DC	WLAN	8.13	±9.6
10198	CAE	HT20 Mixed, MCS7 (65.0 Mbps), 99.5% DC	WLAN	8.27	±9.6
10219	CAE	HT20 Mixed, MCS0 (7.2 Mbps), 99.3% DC	WLAN	8.03	±9.6
10220	CAE	HT20 Mixed, MCS4 (43.3 Mbps), 99.4% DC	WLAN	8.13	±9.6
10221	CAE	HT20 Mixed, MCS7 (72.2 Mbps), 99.4% DC	WLAN	8.27	±9.6
10222	CAE	HT40 Mixed, MCS0 (15.0 Mbps), 99.7% DC	WLAN	8.06	±9.6
10223	CAE	HT40 Mixed, MCS4 (80.0 Mbps), 99.7% DC	WLAN	8.48	±9.6
10224	CAE	HT40 Mixed, MCS7 (150.0 Mbps), 99.7% DC	WLAN	8.08	±9.6
10225	CAC	Rel. 7 HSPA+, 16QAM, 5.0 MHz	WCDMA	5.97	±9.6
10226	CAC	1.4 MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.49	±9.6
10227	CAC	1.4 MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	10.26	±9.6
10228	CAC	1.4 MHz, QPSK, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.22	±9.6
10229	CAE	3.0 MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.48	±9.6



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UID	Rev	Communication System Name ^D	Group	PAR (dB)	Unc ^E k = 2
10230	CAE	3.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	10.25	±9.6
10231	CAE	3.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.19	±9.6
10232	CAH	5.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.48	±9.6
10233	CAH	5.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	10.25	±9.6
10234	CAH	5.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.21	±9.6
10235	CAH	10.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.48	±9.6
10236	CAH	10.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	10.25	±9.6
10237	CAH	10.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.21	±9.6
10238	CAG	15.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.48	±9.6
10239	CAG	15.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	10.25	±9.6
10240	CAG	15.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 1 RB	LTE-TDD	9.21	±9.6
10241	CAC	1.4MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.82	±9.6
10242	CAC	1.4MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.86	±9.6
10243	CAC	1.4MHz, QPSK, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.46	±9.6
10244	CAE	3.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	10.06	±9.6
10245	CAE	3.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	10.06	±9.6
10246	CAE	3.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.30	±9.6
10247	CAH	5.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.91	±9.6
10248	CAH	5.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	10.09	±9.6
10249	CAH	5.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.29	±9.6
10250	CAH	10.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.81	±9.6
10251	CAH	10.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	10.17	±9.6
10252	CAH	10.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.24	±9.6
10253	CAG	15.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.80	±9.6
10254	CAG	15.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	10.14	±9.6
10255	CAG	15.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 50% RB	LTE-TDD	9.20	±9.6
10256	CAC	1.4MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.96	±9.6
10257	CAC	1.4MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	10.08	±9.6
10258	CAC	1.4MHz, QPSK, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.34	±9.6
10259	CAE	3.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.98	±9.6
10260	CAE	3.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.97	±9.6
10261	CAE	3.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.24	±9.6
10262	CAH	5.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.83	±9.6
10263	CAH	5.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	10.16	±9.6
10264	CAH	5.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.23	±9.6
10265	CAH	10.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.92	±9.6
10266	CAH	10.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	10.07	±9.6
10267	CAH	10.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.30	±9.6
10268	CAG	15.0MHz, 16QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	10.06	±9.6
10269	CAG	15.0MHz, 64QAM, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	10.13	±9.6
10270	CAG	15.0MHz, QPSK, UL/DL CFG: 1, SSC: 4, 100% RB	LTE-TDD	9.58	±9.6
10274	CAC	Rel. 6 HSUPA Subset 2, beta_d 0, QPSK, 5.0MHz	WCDMA	4.87	±9.6
10275	CAC	Rel. 6 HSUPA Subset 2, beta_d 15, QPSK, 5.0MHz	WCDMA	3.96	±9.6
10290	AAB	RC1, SO55, Full frame rate, 1xRTT	CDMA2000	3.91	±9.6
10291	AAB	RC3, SO55, Full frame rate, 1xRTT	CDMA2000	3.46	±9.6
10292	AAB	RC3, SO32, Full frame rate, SCH0 disabled, 1xRTT	CDMA2000	3.39	±9.6
10293	AAB	RC3, SO3, Full frame rate, 1xRTT	CDMA2000	3.50	±9.6
10295	AAB	RC3, SO3, 1/8 frame rate, 1xRTT	CDMA2000	12.49	±9.6
10297	AAE	20.0MHz, QPSK, 50% RB	LTE-FDD	5.81	±9.6
10298	AAE	3.0MHz, QPSK, 50% RB	LTE-FDD	5.72	±9.6
10299	AAE	3.0MHz, 16QAM, 50% RB	LTE-FDD	6.39	±9.6
10300	AAE	3.0MHz, 64QAM, 50% RB	LTE-FDD	6.60	±9.6
10301	AAA	PUSC, 29:18, QPSK, 5.0ms, 18 TRAF SYM	WIMAX	12.03	±9.6
10302	AAA	PUSC, 29:18, QPSK, 5.0ms, 15 TRAF SYM	WIMAX	12.57	±9.6
10303	AAA	PUSC, 31:15, 64QAM, 5.0ms, 15 TRAF SYM	WIMAX	12.52	±9.6
10304	AAA	PUSC, 29:18, 64QAM, 5.0ms, 18 TRAF SYM	WIMAX	11.86	±9.6
10305	AAA	PUSC, 31:15, 64QAM, 10.0ms, 15 TRAF SYM	WIMAX	15.24	±9.6
10306	AAA	PUSC, 29:18, 64QAM, 10.0ms, 18 TRAF SYM	WIMAX	14.67	±9.6
10307	AAA	PUSC, 29:18, QPSK, 10.0ms, 18 TRAF SYM	WIMAX	14.49	±9.6
10308	AAA	PUSC, 29:18, 16QAM, 10.0ms, 18 TRAF SYM	WIMAX	14.46	±9.6
10309	AAA	AMC 2x3, 29:18, 16QAM, 10.0ms, 18 TRAF SYM	WIMAX	14.58	±9.6
10310	AAA	AMC 2x3, 29:18, QPSK, 10.0ms, 18 TRAF SYM	WIMAX	14.57	±9.6
10311	AAE	15.0MHz, QPSK, 100% RB	LTE-FDD	6.06	±9.6
10315	AAB	DSSS, DBPSK, 1.0Mbps, 95.0% DC	WLAN	1.71	±9.6
10316	AAB	OFDM, BPSK, 6.0Mbps, 95.9% DC	WLAN	8.36	±9.6
10317	AAE	OFDM, BPSK, 6.0Mbps, 95.9% DC	WLAN	8.36	±9.6



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10352	AAA	Pulse (D=10%, T=5 ms)	Generic	10.00	±9.6
10353	AAA	Pulse (D=20%, T=5 ms)	Generic	6.99	±9.6
10354	AAA	Pulse (D=40%, T=5 ms)	Generic	3.98	±9.6
10355	AAA	Pulse (D=60%, T=5 ms)	Generic	2.22	±9.6
10356	AAA	Pulse (D=80%, T=5 ms)	Generic	0.97	±9.6
10387	AAA	Random (BW=1 MHz, MOD=QPSK)	Generic	5.10	±9.6
10388	AAA	Random (BW=10 MHz, MOD=QPSK)	Generic	5.22	±9.6
10396	AAA	Random (BW=100 kHz, MOD=64QAM)	Generic	6.27	±9.6
10399	AAA	Random (BW=40 MHz, MOD=64QAM)	Generic	6.27	±9.6
10400	AAF	VHT20, MCS5 (52.0 Mbps), 99.0% DC	WLAN	8.37	±9.6
10401	AAF	VHT40, MCS5 (108.0 Mbps), 96.7% DC	WLAN	8.60	±9.6
10402	AAF	VHT80, MCS5 (234.0 Mbps), 99.0% DC	WLAN	8.53	±9.6
10403	AAB	Rev. 0, 1xEV-DO	CDMA2000	3.76	±9.6
10404	AAB	Rev. A, 1xEV-DO	CDMA2000	3.77	±9.6
10406	AAB	RC3, SC32, Full frame rate, SCH0 enabled, 1xRTT	CDMA2000	5.22	±9.6
10410	AAH	10.0 MHz, QPSK, UL/DL CFG: 0, SSC: 4, 1 RB	LTE-TDD	7.82	±9.6
10414	AAA	Random (BW=40 MHz, HIGH PAR)	Generic	8.54	±9.6
10415	AAA	DSSS, DBPSK, 1.0 Mbps, 99.9% DC	WLAN	1.54	±9.6
10416	AAA	OFDM, BPSK, 6.0 Mbps, 99.9% DC	WLAN	8.23	±9.6
10417	AAD	OFDM, BPSK, 6.0 Mbps, 99.9% DC	WLAN	8.23	±9.6
10418	AAA	OFDM (LTF), BPSK, 6.0 Mbps, 99.8% DC	WLAN	8.14	±9.6
10419	AAA	OFDM (STF), BPSK, 6.0 Mbps, 99.8% DC	WLAN	8.19	±9.6
10422	AAD	HT20 Greenfield, MCS0 (7.2 Mbps), 99.3% DC	WLAN	8.32	±9.6
10423	AAD	HT20 Greenfield, MCS4 (43.3 Mbps), 99.3% DC	WLAN	8.47	±9.6
10424	AAD	HT20 Greenfield, MCS7 (72.2 Mbps), 99.3% DC	WLAN	8.40	±9.6
10425	AAD	HT40 Greenfield, MCS0 (15.0 Mbps), 99.2% DC	WLAN	8.41	±9.6
10426	AAD	HT40 Greenfield, MCS4 (90.0 Mbps), 99.2% DC	WLAN	8.45	±9.6
10427	AAD	HT40 Greenfield, MCS7 (150.0 Mbps), 99.2% DC	WLAN	8.41	±9.6
10430	AAE	5.0 MHz, 64-QAM, 100% RB	LTE-FDD	8.28	±9.6
10431	AAE	10.0 MHz, 64-QAM, 100% RB	LTE-FDD	8.36	±9.6
10432	AAD	15.0 MHz, 64-QAM, 100% RB	LTE-FDD	8.34	±9.6
10433	AAD	20.0 MHz, 64-QAM, 100% RB	LTE-FDD	8.34	±9.6
10434	AAB	BS Test Model 1, 64 DPCH, 64QAM, 5.0 MHz (DL)	WCDMA	8.60	±9.6
10435	AAG	20.0 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	7.82	±9.6
10447	AAE	5.0 MHz, 64-QAM, 100% RB	LTE-FDD	7.56	±9.6
10448	AAE	10.0 MHz, 64-QAM, 100% RB	LTE-FDD	7.53	±9.6
10449	AAD	15.0 MHz, 64-QAM, 100% RB	LTE-FDD	7.51	±9.6
10450	AAD	20.0 MHz, 64-QAM, 100% RB	LTE-FDD	7.48	±9.6
10451	AAB	BS Test Model 1, 64 DPCH, Clipping 44%, 64QAM, 5.0 MHz (DL)	WCDMA	7.59	±9.6
10456	AAD	VHT160, MCS5 (58.5 Mbps), 99.0% DC	WLAN	8.63	±9.6
10457	AAB	Rel. 5 DC-HSDPA, QPSK, 10.0 MHz	WCDMA	6.62	±9.6
10458	AAA	Rev. B, 2 carriers, 1xEV-DO	CDMA2000	6.55	±9.6
10459	AAA	Rev. B, 3 carriers, 1xEV-DO	CDMA2000	6.25	±9.6
10460	AAB	Rel. 99, AMR, QPSK, 5.0 MHz	WCDMA	2.39	±9.6
10461	AAC	1.4 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	7.82	±9.6
10462	AAC	1.4 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.30	±9.6
10463	AAC	1.4 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.56	±9.6
10464	AAD	3.0 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	7.82	±9.6
10465	AAD	3.0 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.32	±9.6
10466	AAD	3.0 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.57	±9.6
10467	AAG	5.0 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	7.82	±9.6
10468	AAG	5.0 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.32	±9.6
10469	AAG	5.0 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.56	±9.6
10470	AAG	10.0 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	7.82	±9.6
10471	AAG	10.0 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.32	±9.6
10472	AAG	10.0 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.57	±9.6
10473	AAF	15.0 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	7.82	±9.6
10474	AAF	15.0 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.32	±9.6
10475	AAF	15.0 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.57	±9.6
10477	AAG	20.0 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.32	±9.6
10478	AAG	20.0 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 1 RB	LTE-TDD	8.57	±9.6
10479	AAC	1.4 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	7.74	±9.6
10480	AAC	1.4 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.16	±9.6
10481	AAC	1.4 MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.45	±9.6
10482	AAD	3.0 MHz, QPSK, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	7.71	±9.6
10483	AAD	3.0 MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.39	±9.6



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10484	AAD	3.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.47	±9.6
10485	AAG	5.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	7.59	±9.6
10486	AAG	5.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.38	±9.6
10487	AAG	5.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.60	±9.6
10488	AAG	10.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	7.70	±9.6
10489	AAG	10.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.31	±9.6
10490	AAG	10.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.54	±9.6
10491	AAF	15.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	7.74	±9.6
10492	AAF	15.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.41	±9.6
10493	AAF	15.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.55	±9.6
10494	AAG	20.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	7.74	±9.6
10495	AAG	20.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.37	±9.6
10496	AAG	20.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 50% RB	LTE-TDD	8.54	±9.6
10497	AAC	1.4MHz, QPSK, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	7.67	±9.6
10498	AAC	1.4MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.40	±9.6
10499	AAC	1.4MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.68	±9.6
10500	AAD	3.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	7.67	±9.6
10501	AAD	3.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.44	±9.6
10502	AAD	3.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.52	±9.6
10503	AAG	5.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	7.72	±9.6
10504	AAG	5.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.31	±9.6
10505	AAG	5.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.54	±9.6
10506	AAG	10.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	7.74	±9.6
10507	AAG	10.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.36	±9.6
10508	AAG	10.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.55	±9.6
10509	AAF	15.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	7.99	±9.6
10510	AAF	15.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.49	±9.6
10511	AAF	15.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.51	±9.6
10512	AAG	20.0MHz, QPSK, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	7.74	±9.6
10513	AAG	20.0MHz, 16QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.42	±9.6
10514	AAG	20.0MHz, 64QAM, UL/DL CFG: 0, SSC: 7, 100% RB	LTE-TDD	8.45	±9.6
10515	AAA	DSSS, DQPSK, 2.0Mbps, 99.0% DC	WLAN	1.58	±9.6
10516	AAA	HR-DSSS, DQPSK, 5.5Mbps, 99.2% DC	WLAN	1.57	±9.6
10517	AAA	HR-DSSS, DQPSK, 11.0Mbps, 99.0% DC	WLAN	1.58	±9.6
10518	AAD	OFDM, BPSK, 9.0Mbps, 98.9% DC	WLAN	8.23	±9.6
10519	AAD	OFDM, QPSK, 12.0Mbps, 99.0% DC	WLAN	8.39	±9.6
10520	AAD	OFDM, QPSK, 18.0Mbps, 99.0% DC	WLAN	8.12	±9.6
10521	AAD	OFDM, 16QAM, 24.0Mbps, 99.0% DC	WLAN	7.97	±9.6
10522	AAD	OFDM, 16QAM, 36.0Mbps, 99.0% DC	WLAN	8.45	±9.6
10523	AAD	OFDM, 64QAM, 48.0Mbps, 99.0% DC	WLAN	8.08	±9.6
10524	AAD	OFDM, 64QAM, 54.0Mbps, 99.0% DC	WLAN	8.27	±9.6
10525	AAD	VHT20, MCS0 (6.5Mbps), 98.9% DC	WLAN	8.36	±9.6
10526	AAD	VHT20, MCS1 (13.0Mbps), 99.0% DC	WLAN	8.42	±9.6
10527	AAD	VHT20, MCS2 (19.5Mbps), 99.0% DC	WLAN	8.21	±9.6
10528	AAD	VHT20, MCS3 (26.0Mbps), 99.0% DC	WLAN	8.36	±9.6
10529	AAD	VHT20, MCS4 (39.0Mbps), 99.0% DC	WLAN	8.36	±9.6
10531	AAD	VHT20, MCS6 (58.5Mbps), 99.0% DC	WLAN	8.43	±9.6
10532	AAD	VHT20, MCS7 (65.0Mbps), 99.0% DC	WLAN	8.29	±9.6
10533	AAD	VHT20, MCS8 (78.0Mbps), 99.0% DC	WLAN	8.38	±9.6
10534	AAD	VHT40, MCS0 (13.5Mbps), 98.9% DC	WLAN	8.45	±9.6
10535	AAD	VHT40, MCS1 (27.0Mbps), 98.8% DC	WLAN	8.45	±9.6
10536	AAD	VHT40, MCS2 (40.5Mbps), 98.8% DC	WLAN	8.32	±9.6
10537	AAD	VHT40, MCS3 (54.0Mbps), 98.7% DC	WLAN	8.44	±9.6
10538	AAD	VHT40, MCS4 (61.0Mbps), 98.5% DC	WLAN	8.54	±9.6
10540	AAD	VHT40, MCS6 (121.5Mbps), 98.3% DC	WLAN	8.39	±9.6
10541	AAD	VHT40, MCS7 (135.0Mbps), 98.3% DC	WLAN	8.46	±9.6
10542	AAD	VHT40, MCS8 (162.0Mbps), 98.1% DC	WLAN	8.65	±9.6
10543	AAD	VHT40, MCS9 (180.0Mbps), 98.0% DC	WLAN	8.65	±9.6
10544	AAD	VHT80, MCS0 (29.3Mbps), 99.0% DC	WLAN	8.47	±9.6
10545	AAD	VHT80, MCS1 (58.5Mbps), 99.0% DC	WLAN	8.55	±9.6
10546	AAD	VHT80, MCS2 (87.8Mbps), 99.0% DC	WLAN	8.35	±9.6
10547	AAD	VHT80, MCS3 (117.0Mbps), 99.0% DC	WLAN	8.49	±9.6
10548	AAD	VHT80, MCS4 (175.5Mbps), 99.0% DC	WLAN	8.37	±9.6
10550	AAD	VHT80, MCS6 (263.3Mbps), 99.0% DC	WLAN	8.38	±9.6
10551	AAD	VHT80, MCS7 (292.5Mbps), 99.0% DC	WLAN	8.50	±9.6
10552	AAD	VHT80, MCS8 (351.0Mbps), 99.0% DC	WLAN	8.42	±9.6



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10553	AAD	VHT80, MCS9 (390.0 Mbps), 99.0% DC	WLAN	8.45	±9.6
10554	AAE	VHT160, MCS0 (58.5 Mbps), 99.0% DC	WLAN	8.48	±9.6
10555	AAE	VHT160, MCS1 (117.0 Mbps), 99.0% DC	WLAN	8.47	±9.6
10556	AAE	VHT160, MCS2 (175.5 Mbps), 99.0% DC	WLAN	8.50	±9.6
10557	AAE	VHT160, MCS3 (234.0 Mbps), 99.0% DC	WLAN	8.52	±9.6
10558	AAE	VHT160, MCS4 (351.0 Mbps), 99.0% DC	WLAN	8.61	±9.6
10560	AAE	VHT160, MCS6 (526.5 Mbps), 99.0% DC	WLAN	8.73	±9.6
10561	AAE	VHT160, MCS7 (585.0 Mbps), 99.0% DC	WLAN	8.56	±9.6
10562	AAE	VHT160, MCS8 (702.0 Mbps), 99.0% DC	WLAN	8.69	±9.6
10563	AAE	VHT160, MCS9 (780.0 Mbps), 99.0% DC	WLAN	8.77	±9.6
10564	AAA	OFDM, BPSK, 9.0 Mbps, 98.9% DC	WLAN	8.25	±9.6
10565	AAA	OFDM, QPSK, 12.0 Mbps, 99.0% DC	WLAN	8.45	±9.6
10566	AAA	OFDM, QPSK, 18.0 Mbps, 99.0% DC	WLAN	8.13	±9.6
10567	AAA	OFDM, 16QAM, 24.0 Mbps, 99.0% DC	WLAN	8.00	±9.6
10568	AAA	OFDM, 16QAM, 36.0 Mbps, 99.0% DC	WLAN	8.37	±9.6
10569	AAA	OFDM, 64QAM, 48.0 Mbps, 99.0% DC	WLAN	8.10	±9.6
10570	AAA	OFDM, 64QAM, 54.0 Mbps, 99.0% DC	WLAN	8.30	±9.6
10571	AAA	DSSS, DQPSK, 1.0 Mbps, 90.0% DC	WLAN	1.99	±9.6
10572	AAA	DSSS, DQPSK, 2.0 Mbps, 90.0% DC	WLAN	1.99	±9.6
10573	AAA	HR-DSSS, DQPSK, 5.5 Mbps, 90.1% DC	WLAN	1.98	±9.6
10574	AAA	HR-DSSS, DQPSK, 11.0 Mbps, 90.3% DC	WLAN	1.98	±9.6
10575	AAA	OFDM, BPSK, 6.0 Mbps, 89.9% DC	WLAN	8.59	±9.6
10576	AAA	OFDM, BPSK, 9.0 Mbps, 89.9% DC	WLAN	8.60	±9.6
10577	AAA	OFDM, QPSK, 12.0 Mbps, 90.0% DC	WLAN	8.70	±9.6
10578	AAA	OFDM, QPSK, 18.0 Mbps, 90.0% DC	WLAN	8.49	±9.6
10579	AAA	OFDM, 16QAM, 24.0 Mbps, 90.0% DC	WLAN	8.36	±9.6
10580	AAA	OFDM, 16QAM, 36.0 Mbps, 90.0% DC	WLAN	8.76	±9.6
10581	AAA	OFDM, 64QAM, 48.0 Mbps, 90.0% DC	WLAN	8.35	±9.6
10582	AAA	OFDM, 64QAM, 54.0 Mbps, 90.0% DC	WLAN	8.67	±9.6
10583	AAD	OFDM, BPSK, 6.0 Mbps, 89.9% DC	WLAN	8.59	±9.6
10584	AAD	OFDM, BPSK, 9.0 Mbps, 89.9% DC	WLAN	8.60	±9.6
10585	AAD	OFDM, QPSK, 12.0 Mbps, 90.0% DC	WLAN	8.70	±9.6
10586	AAD	OFDM, QPSK, 18.0 Mbps, 90.0% DC	WLAN	8.49	±9.6
10587	AAD	OFDM, 16QAM, 24.0 Mbps, 90.0% DC	WLAN	8.36	±9.6
10588	AAD	OFDM, 16QAM, 36.0 Mbps, 90.0% DC	WLAN	8.76	±9.6
10589	AAD	OFDM, 64QAM, 48.0 Mbps, 90.0% DC	WLAN	8.35	±9.6
10590	AAD	OFDM, 64QAM, 54.0 Mbps, 90.0% DC	WLAN	8.67	±9.6
10591	AAD	HT20 Mixed, MCS0 (6.5 Mbps), 89.9% DC	WLAN	8.63	±9.6
10592	AAD	HT20 Mixed, MCS1 (13.0 Mbps), 90.0% DC	WLAN	8.79	±9.6
10593	AAD	HT20 Mixed, MCS2 (19.5 Mbps), 90.0% DC	WLAN	8.64	±9.6
10594	AAD	HT20 Mixed, MCS3 (26.0 Mbps), 90.0% DC	WLAN	8.74	±9.6
10595	AAD	HT20 Mixed, MCS4 (39.0 Mbps), 90.0% DC	WLAN	8.74	±9.6
10596	AAD	HT20 Mixed, MCS5 (52.0 Mbps), 90.0% DC	WLAN	8.71	±9.6
10597	AAD	HT20 Mixed, MCS6 (58.5 Mbps), 90.0% DC	WLAN	8.72	±9.6
10598	AAD	HT20 Mixed, MCS7 (65.0 Mbps), 90.0% DC	WLAN	8.50	±9.6
10599	AAD	HT40 Mixed, MCS0 (13.5 Mbps), 89.9% DC	WLAN	8.79	±9.6
10600	AAD	HT40 Mixed, MCS1 (27.0 Mbps), 89.7% DC	WLAN	8.88	±9.6
10601	AAD	HT40 Mixed, MCS2 (40.5 Mbps), 89.6% DC	WLAN	8.82	±9.6
10602	AAD	HT40 Mixed, MCS3 (54.0 Mbps), 89.4% DC	WLAN	8.94	±9.6
10603	AAD	HT40 Mixed, MCS4 (81.0 Mbps), 89.2% DC	WLAN	8.03	±9.6
10604	AAD	HT40 Mixed, MCS5 (108.0 Mbps), 88.9% DC	WLAN	8.76	±9.6
10605	AAD	HT40 Mixed, MCS6 (121.5 Mbps), 88.8% DC	WLAN	8.97	±9.6
10606	AAD	HT40 Mixed, MCS7 (135.0 Mbps), 88.7% DC	WLAN	8.82	±9.6
10607	AAD	VHT20, MCS0 (6.5 Mbps), 89.9% DC	WLAN	8.64	±9.6
10608	AAD	VHT20, MCS1 (13.0 Mbps), 90.0% DC	WLAN	8.77	±9.6
10609	AAD	VHT20, MCS2 (19.5 Mbps), 90.0% DC	WLAN	8.57	±9.6
10610	AAD	VHT20, MCS3 (26.0 Mbps), 90.0% DC	WLAN	8.78	±9.6
10611	AAD	VHT20, MCS4 (39.0 Mbps), 90.0% DC	WLAN	8.70	±9.6
10612	AAD	VHT20, MCS5 (52.0 Mbps), 90.0% DC	WLAN	8.77	±9.6
10613	AAD	VHT20, MCS6 (58.5 Mbps), 90.0% DC	WLAN	8.94	±9.6
10614	AAD	VHT20, MCS7 (65.0 Mbps), 90.0% DC	WLAN	8.59	±9.6
10615	AAD	VHT20, MCS8 (78.0 Mbps), 90.0% DC	WLAN	8.82	±9.6
10616	AAD	VHT40, MCS0 (13.5 Mbps), 89.9% DC	WLAN	8.82	±9.6
10617	AAD	VHT40, MCS1 (27.0 Mbps), 89.7% DC	WLAN	8.81	±9.6
10618	AAD	VHT40, MCS2 (40.5 Mbps), 89.6% DC	WLAN	8.58	±9.6
10619	AAD	VHT40, MCS3 (54.0 Mbps), 89.4% DC	WLAN	8.86	±9.6



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10620	AAD	VHT40, MCS4 (81.0 Mbps), 89.2% DC	WLAN	8.87	±9.6
10621	AAD	VHT40, MCS5 (106.0 Mbps), 88.9% DC	WLAN	8.77	±9.6
10622	AAD	VHT40, MCS6 (121.5 Mbps), 88.8% DC	WLAN	8.68	±9.6
10623	AAD	VHT40, MCS7 (135.0 Mbps), 88.6% DC	WLAN	8.82	±9.6
10624	AAD	VHT40, MCS8 (162.0 Mbps), 88.4% DC	WLAN	8.96	±9.6
10625	AAD	VHT40, MCS9 (180.0 Mbps), 88.2% DC	WLAN	8.96	±9.6
10626	AAD	VHT80, MCS0 (29.3 Mbps), 90.0% DC	WLAN	8.83	±9.6
10627	AAD	VHT80, MCS1 (58.5 Mbps), 90.0% DC	WLAN	8.86	±9.6
10628	AAD	VHT80, MCS2 (87.8 Mbps), 90.0% DC	WLAN	8.71	±9.6
10629	AAD	VHT80, MCS3 (117.0 Mbps), 90.0% DC	WLAN	8.85	±9.6
10630	AAD	VHT80, MCS4 (175.5 Mbps), 90.0% DC	WLAN	8.72	±9.6
10631	AAD	VHT80, MCS5 (234.0 Mbps), 90.0% DC	WLAN	8.81	±9.6
10632	AAD	VHT80, MCS6 (263.3 Mbps), 90.0% DC	WLAN	8.74	±9.6
10633	AAD	VHT80, MCS7 (292.5 Mbps), 90.0% DC	WLAN	8.83	±9.6
10634	AAD	VHT80, MCS8 (351.0 Mbps), 90.0% DC	WLAN	8.80	±9.6
10635	AAD	VHT80, MCS9 (390.0 Mbps), 90.0% DC	WLAN	8.81	±9.6
10636	AAE	VHT160, MCS0 (58.5 Mbps), 90.0% DC	WLAN	8.83	±9.6
10637	AAE	VHT160, MCS1 (117.0 Mbps), 90.0% DC	WLAN	8.79	±9.6
10638	AAE	VHT160, MCS2 (175.5 Mbps), 90.0% DC	WLAN	8.86	±9.6
10639	AAE	VHT160, MCS3 (234.0 Mbps), 90.0% DC	WLAN	8.85	±9.6
10640	AAE	VHT160, MCS4 (351.0 Mbps), 90.0% DC	WLAN	8.98	±9.6
10641	AAE	VHT160, MCS5 (468.0 Mbps), 90.0% DC	WLAN	9.06	±9.6
10642	AAE	VHT160, MCS6 (526.5 Mbps), 90.0% DC	WLAN	9.06	±9.6
10643	AAE	VHT160, MCS7 (585.0 Mbps), 90.0% DC	WLAN	8.89	±9.6
10644	AAE	VHT160, MCS8 (702.0 Mbps), 90.0% DC	WLAN	9.05	±9.6
10645	AAE	VHT160, MCS9 (780.0 Mbps), 90.0% DC	WLAN	9.11	±9.6
10646	AAH	5.0 MHz, QPSK, UL/DL CFG: 2, SSC: 4, 1 RB	LTE-TDD	11.86	±9.6
10647	AAG	20.0 MHz, QPSK, UL/DL CFG: 2, SSC: 7, 1 RB	LTE-TDD	11.96	±9.6
10648	AAA	RC8, SO75, 1xAdvanced	CDMA2000	3.45	±9.6
10670	AAA	LE, Test, GFSK	Bluetooth	2.19	±9.6
10671	AAC	ET20, MCS0 (8.6 Mbps), 90.0% DC	WLAN	9.09	±9.6
10672	AAC	ET20, MCS1 (17.0 Mbps), 90.0% DC	WLAN	8.57	±9.6
10673	AAC	ET20, MCS2 (26.0 Mbps), 90.0% DC	WLAN	8.78	±9.6
10674	AAC	ET20, MCS3 (34.0 Mbps), 90.0% DC	WLAN	8.74	±9.6
10675	AAC	ET20, MCS4 (52.0 Mbps), 90.0% DC	WLAN	8.90	±9.6
10676	AAC	ET20, MCS5 (69.0 Mbps), 90.0% DC	WLAN	8.77	±9.6
10677	AAC	ET20, MCS6 (77.0 Mbps), 90.0% DC	WLAN	8.73	±9.6
10678	AAC	ET20, MCS7 (86.0 Mbps), 90.0% DC	WLAN	8.78	±9.6
10679	AAC	ET20, MCS8 (103.0 Mbps), 90.0% DC	WLAN	8.89	±9.6
10680	AAC	ET20, MCS9 (115.0 Mbps), 90.0% DC	WLAN	8.80	±9.6
10681	AAC	ET20, MCS10 (122.0 Mbps), 90.0% DC	WLAN	8.62	±9.6
10682	AAC	ET20, MCS11 (135.0 Mbps), 90.0% DC	WLAN	8.83	±9.6
10683	AAC	ET20, MCS0 (8.6 Mbps), 100.0% DC	WLAN	8.42	±9.6
10684	AAC	ET20, MCS1 (17.0 Mbps), 100.0% DC	WLAN	8.26	±9.6
10685	AAC	ET20, MCS2 (26.0 Mbps), 100.0% DC	WLAN	8.33	±9.6
10686	AAC	ET20, MCS3 (34.0 Mbps), 100.0% DC	WLAN	8.28	±9.6
10687	AAC	ET20, MCS4 (52.0 Mbps), 100.0% DC	WLAN	8.45	±9.6
10688	AAC	ET20, MCS5 (69.0 Mbps), 100.0% DC	WLAN	8.29	±9.6
10689	AAC	ET20, MCS6 (77.0 Mbps), 100.0% DC	WLAN	8.55	±9.6
10690	AAC	ET20, MCS7 (86.0 Mbps), 100.0% DC	WLAN	8.29	±9.6
10691	AAC	ET20, MCS8 (103.0 Mbps), 100.0% DC	WLAN	8.25	±9.6
10692	AAC	ET20, MCS9 (115.0 Mbps), 100.0% DC	WLAN	8.29	±9.6
10693	AAC	ET20, MCS10 (122.0 Mbps), 100.0% DC	WLAN	8.25	±9.6
10694	AAC	ET20, MCS11 (135.0 Mbps), 100.0% DC	WLAN	8.57	±9.6
10695	AAC	ET40, MCS0 (17.2 Mbps), 89.8% DC	WLAN	8.78	±9.6
10696	AAC	ET40, MCS1 (34.0 Mbps), 89.8% DC	WLAN	8.91	±9.6
10697	AAC	ET40, MCS2 (52.0 Mbps), 89.7% DC	WLAN	8.61	±9.6
10698	AAC	ET40, MCS3 (69.0 Mbps), 89.7% DC	WLAN	8.89	±9.6
10699	AAC	ET40, MCS4 (103.0 Mbps), 89.9% DC	WLAN	8.82	±9.6
10700	AAC	ET40, MCS5 (138.0 Mbps), 89.8% DC	WLAN	8.73	±9.6
10701	AAC	ET40, MCS6 (155.0 Mbps), 89.8% DC	WLAN	8.86	±9.6
10702	AAC	ET40, MCS7 (172.0 Mbps), 89.8% DC	WLAN	8.70	±9.6
10703	AAC	ET40, MCS8 (207.0 Mbps), 89.8% DC	WLAN	8.82	±9.6
10704	AAC	ET40, MCS9 (229.0 Mbps), 89.8% DC	WLAN	8.56	±9.6
10705	AAC	ET40, MCS10 (258.0 Mbps), 89.8% DC	WLAN	8.69	±9.6
10706	AAC	ET40, MCS11 (267.0 Mbps), 89.8% DC	WLAN	8.66	±9.6



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10773	AAF	CP-OFDM, 40.0 MHz, QPSK, 15 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	8.03	±9.6
10774	AAE	CP-OFDM, 50.0 MHz, QPSK, 15 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	8.02	±9.6
10775	AAF	CP-OFDM, 5.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.31	±9.6
10776	AAE	CP-OFDM, 10.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.30	±9.6
10777	AAC	CP-OFDM, 15.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.30	±9.6
10778	AAE	CP-OFDM, 20.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.34	±9.6
10779	AAC	CP-OFDM, 25.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.42	±9.6
10780	AAE	CP-OFDM, 30.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.38	±9.6
10781	AAF	CP-OFDM, 40.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.38	±9.6
10782	AAE	CP-OFDM, 50.0 MHz, QPSK, 15 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.43	±9.6
10783	AAG	CP-OFDM, 5.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.31	±9.6
10784	AAE	CP-OFDM, 10.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.29	±9.6
10785	AAD	CP-OFDM, 15.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.40	±9.6
10786	AAE	CP-OFDM, 20.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.35	±9.6
10787	AAD	CP-OFDM, 25.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.44	±9.6
10788	AAE	CP-OFDM, 30.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.39	±9.6
10789	AAF	CP-OFDM, 40.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.37	±9.6
10790	AAE	CP-OFDM, 50.0 MHz, QPSK, 15 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.39	±9.6
10791	AAG	CP-OFDM, 5.0 MHz, QPSK, 30 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	7.83	±9.6
10792	AAE	CP-OFDM, 10.0 MHz, QPSK, 30 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	7.92	±9.6
10793	AAD	CP-OFDM, 15.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.95	±9.6
10794	AAE	CP-OFDM, 20.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.82	±9.6
10795	AAD	CP-OFDM, 25.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.84	±9.6
10796	AAE	CP-OFDM, 30.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.82	±9.6
10797	AAF	CP-OFDM, 40.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	8.01	±9.6
10798	AAE	CP-OFDM, 50.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.89	±9.6
10799	AAF	CP-OFDM, 60.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.93	±9.6
10801	AAF	CP-OFDM, 80.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.89	±9.6
10802	AAE	CP-OFDM, 90.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.87	±9.6
10803	AAF	CP-OFDM, 100.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.93	±9.6
10805	AAE	CP-OFDM, 10.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.34	±9.6
10806	AAD	CP-OFDM, 15.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.37	±9.6
10809	AAE	CP-OFDM, 30.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.34	±9.6
10810	AAF	CP-OFDM, 40.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.34	±9.6
10812	AAF	CP-OFDM, 60.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.35	±9.6
10817	AAG	CP-OFDM, 5.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.35	±9.6
10818	AAE	CP-OFDM, 10.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.34	±9.6
10819	AAD	CP-OFDM, 15.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.33	±9.6
10820	AAE	CP-OFDM, 20.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.30	±9.6
10821	AAD	CP-OFDM, 25.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.41	±9.6
10822	AAE	CP-OFDM, 30.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.41	±9.6
10823	AAF	CP-OFDM, 40.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.36	±9.6
10824	AAE	CP-OFDM, 50.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.39	±9.6
10825	AAF	CP-OFDM, 60.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.41	±9.6
10827	AAF	CP-OFDM, 80.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.42	±9.6
10828	AAE	CP-OFDM, 90.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.43	±9.6
10829	AAF	CP-OFDM, 100.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.40	±9.6
10830	AAE	CP-OFDM, 10.0 MHz, QPSK, 60 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	7.63	±9.6
10831	AAD	CP-OFDM, 15.0 MHz, QPSK, 60 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	7.73	±9.6
10832	AAE	CP-OFDM, 20.0 MHz, QPSK, 60 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	7.74	±9.6
10833	AAD	CP-OFDM, 25.0 MHz, QPSK, 60 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	7.70	±9.6
10834	AAE	CP-OFDM, 30.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.75	±9.6
10835	AAF	CP-OFDM, 40.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.70	±9.6
10836	AAE	CP-OFDM, 50.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.66	±9.6
10837	AAF	CP-OFDM, 60.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.68	±9.6
10839	AAF	CP-OFDM, 80.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.70	±9.6
10840	AAE	CP-OFDM, 90.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.67	±9.6
10841	AAF	CP-OFDM, 100.0 MHz, QPSK, 60 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	7.71	±9.6
10843	AAD	CP-OFDM, 15.0 MHz, QPSK, 80 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.49	±9.6
10844	AAE	CP-OFDM, 20.0 MHz, QPSK, 80 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.34	±9.6
10846	AAE	CP-OFDM, 30.0 MHz, QPSK, 80 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	8.41	±9.6
10854	AAE	CP-OFDM, 10.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.34	±9.6
10855	AAD	CP-OFDM, 15.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.36	±9.6
10856	AAE	CP-OFDM, 20.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.37	±9.6
10857	AAD	CP-OFDM, 25.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.35	±9.6
10858	AAE	CP-OFDM, 30.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.36	±9.6



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UID	Rev	Communication System Name ^B	Group	PAR (dB)	Unc ^C k = 2
10859	AAF	CP-OFDM, 40.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.34	±9.6
10860	AAE	CP-OFDM, 50.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.41	±9.6
10861	AAF	CP-OFDM, 60.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.40	±9.6
10863	AAF	CP-OFDM, 80.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.41	±9.6
10864	AAE	CP-OFDM, 90.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.37	±9.6
10865	AAF	CP-OFDM, 100.0 MHz, QPSK, 60 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	8.41	±9.6
10866	AAF	DFT-s-OFDM, 100.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.68	±9.6
10868	AAF	DFT-s-OFDM, 100.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.89	±9.6
10869	AAE	DFT-s-OFDM, 100.0 MHz, QPSK, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	5.75	±9.6
10870	AAE	DFT-s-OFDM, 100.0 MHz, QPSK, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	5.86	±9.6
10871	AAE	DFT-s-OFDM, 100.0 MHz, 16QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	5.75	±9.6
10872	AAE	DFT-s-OFDM, 100.0 MHz, 16QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	6.52	±9.6
10873	AAE	DFT-s-OFDM, 100.0 MHz, 64QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	6.61	±9.6
10874	AAE	DFT-s-OFDM, 100.0 MHz, 64QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	6.55	±9.6
10875	AAE	CP-OFDM, 100.0 MHz, QPSK, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	7.78	±9.6
10876	AAE	CP-OFDM, 100.0 MHz, QPSK, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	8.39	±9.6
10877	AAE	CP-OFDM, 100.0 MHz, 16QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	7.95	±9.6
10878	AAE	CP-OFDM, 100.0 MHz, 16QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	8.41	±9.6
10879	AAE	CP-OFDM, 100.0 MHz, 64QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	8.12	±9.6
10880	AAE	CP-OFDM, 100.0 MHz, 64QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	8.38	±9.6
10881	AAE	DFT-s-OFDM, 50.0 MHz, QPSK, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	5.75	±9.6
10882	AAE	DFT-s-OFDM, 50.0 MHz, QPSK, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	5.96	±9.6
10883	AAE	DFT-s-OFDM, 50.0 MHz, 16QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	6.57	±9.6
10884	AAE	DFT-s-OFDM, 50.0 MHz, 16QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	6.53	±9.6
10885	AAE	DFT-s-OFDM, 50.0 MHz, 64QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	6.61	±9.6
10886	AAE	DFT-s-OFDM, 50.0 MHz, 64QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	6.65	±9.6
10887	AAE	CP-OFDM, 50.0 MHz, QPSK, 120 kHz, 99.9% DC, 1 RB	5G NR FR2 TDD	7.78	±9.6
10888	AAE	CP-OFDM, 50.0 MHz, QPSK, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	8.35	±9.6
10889	AAE	CP-OFDM, 50.0 MHz, 16QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	8.02	±9.6
10890	AAE	CP-OFDM, 50.0 MHz, 16QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	8.40	±9.6
10891	AAE	CP-OFDM, 50.0 MHz, 64QAM, 120 kHz, 100.0% DC, 1 RB	5G NR FR2 TDD	8.13	±9.6
10892	AAE	CP-OFDM, 50.0 MHz, 64QAM, 120 kHz, 100.0% DC, 100% RB	5G NR FR2 TDD	8.41	±9.6
10897	AAE	DFT-s-OFDM, 5.0 MHz, QPSK, 30 kHz, 99.9% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10898	AAC	DFT-s-OFDM, 10.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.87	±9.6
10899	AAB	DFT-s-OFDM, 15.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.87	±9.6
10900	AAC	DFT-s-OFDM, 20.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10901	AAB	DFT-s-OFDM, 25.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10902	AAC	DFT-s-OFDM, 30.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10903	AAD	DFT-s-OFDM, 40.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10904	AAC	DFT-s-OFDM, 50.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10905	AAD	DFT-s-OFDM, 60.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10906	AAD	DFT-s-OFDM, 80.0 MHz, QPSK, 30 kHz, 100.0% DC, 1 RB	5G NR FR1 TDD	5.88	±9.6
10907	AAE	DFT-s-OFDM, 5.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.78	±9.6
10908	AAC	DFT-s-OFDM, 10.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.93	±9.6
10909	AAB	DFT-s-OFDM, 15.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.96	±9.6
10910	AAC	DFT-s-OFDM, 20.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.93	±9.6
10911	AAB	DFT-s-OFDM, 25.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.93	±9.6
10912	AAC	DFT-s-OFDM, 30.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.94	±9.6
10913	AAD	DFT-s-OFDM, 40.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.84	±9.6
10914	AAC	DFT-s-OFDM, 50.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.85	±9.6
10915	AAD	DFT-s-OFDM, 60.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.83	±9.6
10916	AAD	DFT-s-OFDM, 80.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.87	±9.6
10917	AAD	DFT-s-OFDM, 100.0 MHz, QPSK, 30 kHz, 100.0% DC, 50% RB	5G NR FR1 TDD	5.94	±9.6
10918	AAE	DFT-s-OFDM, 5.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.86	±9.6
10919	AAC	DFT-s-OFDM, 10.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.86	±9.6
10920	AAB	DFT-s-OFDM, 15.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.87	±9.6
10921	AAC	DFT-s-OFDM, 20.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.84	±9.6
10922	AAB	DFT-s-OFDM, 25.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.82	±9.6
10923	AAC	DFT-s-OFDM, 30.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.84	±9.6
10924	AAD	DFT-s-OFDM, 40.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.84	±9.6
10925	AAC	DFT-s-OFDM, 50.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.95	±9.6
10926	AAD	DFT-s-OFDM, 60.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.84	±9.6
10927	AAD	DFT-s-OFDM, 80.0 MHz, QPSK, 30 kHz, 100.0% DC, 100% RB	5G NR FR1 TDD	5.94	±9.6
10928	AAD	DFT-s-OFDM, 5.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.52	±9.6
10929	AAD	DFT-s-OFDM, 10.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.52	±9.6
10930	AAC	DFT-s-OFDM, 15.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.52	±9.6



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UID	Rev	Communication System Name ^D	Group	PAR (dB)	Unc ^E k = 2
10931	AAC	DFT-s-OFDM, 20.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.51	±9.6
10932	AAC	DFT-s-OFDM, 25.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.51	±9.6
10933	AAC	DFT-s-OFDM, 30.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.51	±9.6
10934	AAC	DFT-s-OFDM, 40.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.51	±9.6
10935	AAD	DFT-s-OFDM, 50.0 MHz, QPSK, 15 kHz, 1 RB	5G NR FR1 FDD	5.51	±9.6
10936	AAD	DFT-s-OFDM, 5.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.90	±9.6
10937	AAD	DFT-s-OFDM, 10.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.77	±9.6
10938	AAC	DFT-s-OFDM, 15.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.90	±9.6
10939	AAC	DFT-s-OFDM, 20.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.82	±9.6
10940	AAC	DFT-s-OFDM, 25.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.89	±9.6
10941	AAC	DFT-s-OFDM, 30.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.83	±9.6
10942	AAC	DFT-s-OFDM, 40.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.85	±9.6
10943	AAD	DFT-s-OFDM, 50.0 MHz, QPSK, 15 kHz, 50% RB	5G NR FR1 FDD	5.95	±9.6
10944	AAD	DFT-s-OFDM, 5.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.81	±9.6
10945	AAD	DFT-s-OFDM, 10.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.85	±9.6
10946	AAC	DFT-s-OFDM, 15.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.83	±9.6
10947	AAC	DFT-s-OFDM, 20.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.87	±9.6
10948	AAC	DFT-s-OFDM, 25.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.94	±9.6
10949	AAC	DFT-s-OFDM, 30.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.87	±9.6
10950	AAC	DFT-s-OFDM, 40.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.94	±9.6
10951	AAD	DFT-s-OFDM, 50.0 MHz, QPSK, 15 kHz, 100% RB	5G NR FR1 FDD	5.92	±9.6
10978	AAA	BDR, 1.0 MHz, 76.7% DC	ULLA	1.16	±9.6
10979	AAA	HDR4, 2.0 MHz, 25.1% DC	ULLA	8.58	±9.6
10980	AAA	HDR8, 4.0 MHz, 16.5% DC	ULLA	10.32	±9.6
10981	AAA	HDRp4, 2.0 MHz, 89.0% DC	ULLA	3.19	±9.6
10982	AAA	HDRp8, 4.0 MHz, 90.3% DC	ULLA	3.43	±9.6
11013	AAB	EHT320, MCS1 (272.0 Mbps), 100.0% DC	WLAN	8.47	±9.6
11014	AAB	EHT320, MCS2 (408.0 Mbps), 100.0% DC	WLAN	8.45	±9.6
11015	AAB	EHT320, MCS3 (544.0 Mbps), 100.0% DC	WLAN	8.44	±9.6
11016	AAB	EHT320, MCS4 (817.0 Mbps), 100.0% DC	WLAN	8.44	±9.6
11017	AAB	EHT320, MCS5 (1089.0 Mbps), 100.0% DC	WLAN	8.41	±9.6
11018	AAB	EHT320, MCS6 (1225.0 Mbps), 100.0% DC	WLAN	8.40	±9.6
11019	AAB	EHT320, MCS7 (1361.0 Mbps), 100.0% DC	WLAN	8.29	±9.6
11020	AAB	EHT320, MCS8 (1633.0 Mbps), 100.0% DC	WLAN	8.27	±9.6
11021	AAB	EHT320, MCS9 (1815.0 Mbps), 100.0% DC	WLAN	8.46	±9.6
11022	AAB	EHT320, MCS10 (2042.0 Mbps), 100.0% DC	WLAN	8.36	±9.6
11023	AAB	EHT320, MCS11 (2269.0 Mbps), 100.0% DC	WLAN	8.09	±9.6
11024	AAB	EHT320, MCS12 (2450.0 Mbps), 100.0% DC	WLAN	8.42	±9.6
11025	AAB	EHT320, MCS13 (2722.0 Mbps), 100.0% DC	WLAN	8.37	±9.6
11026	AAB	EHT320, MCS0 (136.0 Mbps), 100.0% DC	WLAN	8.39	±9.6

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



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Accreditation No.: **SCS 0108**

Client **KES**
Gyeonggi-do, Republic of Korea

Certificate No. **D900V2-094_Jan25**

CALIBRATION CERTIFICATE

Object **D900V2 - SN: 094**

Calibration procedure(s) **QA CAL-05.v12**
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date **January 17, 2025**

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 $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Cal
Power Sensor R&S NRP-33T	SN: 100967	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP18A	SN: 101859	22-Jul-24 (No. 4030A315008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch: Short [S4188] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCP DAK-12	SN: 1016	24-Sept-24 (No. OCP-DAK12-1016_Sep24)	Sep-25
OCP DAK-3.5	SN: 1249	23-Sept-24 (No. OCP-DAK3.5-1249_Sep24)	Sep-25
Reference Probe EX3DV4	SN: 7349	10-Jan-25 (No. EX3-7349_Jan25)	Jan-26
DAE4ip	SN: 1836	28-Oct-24 (No. DAE4ip-1836_Oct24)	Oct-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMB100A	SN: 182081	28-May-24 (No. 675-CAL16-S4588-240528)	May-25
Mismatch; SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pina	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: January 21, 2025

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



**Calibration Laboratory of
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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

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

- 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-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation

- DASY 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%.



D900V2 - SN: 094

January 17, 2025

Measurement Conditions

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

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with spacer
Zoom Scan Resolution	dx, dy = 6mm, dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	900MHz $\pm$ 1MHz	

Head TSL parameters at 900 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.970 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.5 $\pm$ 6%	0.930 mho/m $\pm$ 6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 900 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	2.73 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	10.9 W/kg $\pm$ 17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	1.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.93 W/kg $\pm$ 16.5% (k = 2)



D900V2 - SN: 094

January 17, 2025

Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL at 900 MHz**

Impedance	48.6 Ω - 4.3 j Ω
Return Loss	-26.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.406 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D900V2 - SN: 094

January 17, 2025

System Performance Check Report

Summary

Dipole	Frequency [MHz]	TSL	Power [dBm]
D900V2 - SN094	900	HSL	-24

Exposure Conditions

Phantom Section, TSL	Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	15	CW, 0--		900, 0	9.32	0.83	-41.5

Hardware Setup

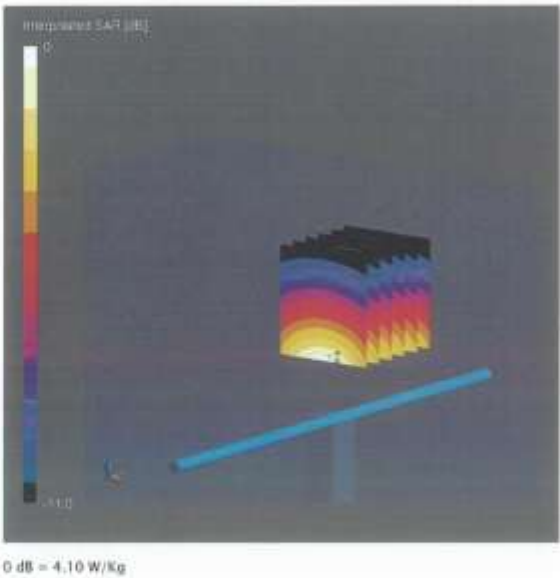
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Flat V4.0 mod	HSL, 2025-01-17	EK32V4 - SN7349, 2025-01-10	DAE4ip Sn1836, 2024-10-28

Scans Setup

	Zoom Scan
Grid Extents [mm]	30 x 30 x 30
Grid Steps [mm]	6.0 x 6.0 x 1.5
Sensor Surface [mm]	1.4
Graded Grid	Yes
Grading Ratio	1.5
WNA	N/A
Surface Detection	VMS + Rp
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2025-01-17
psSAR1g [W/Kg]	2.73
psSAR10g [W/Kg]	1.74
Power Drift [dB]	0.00
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative

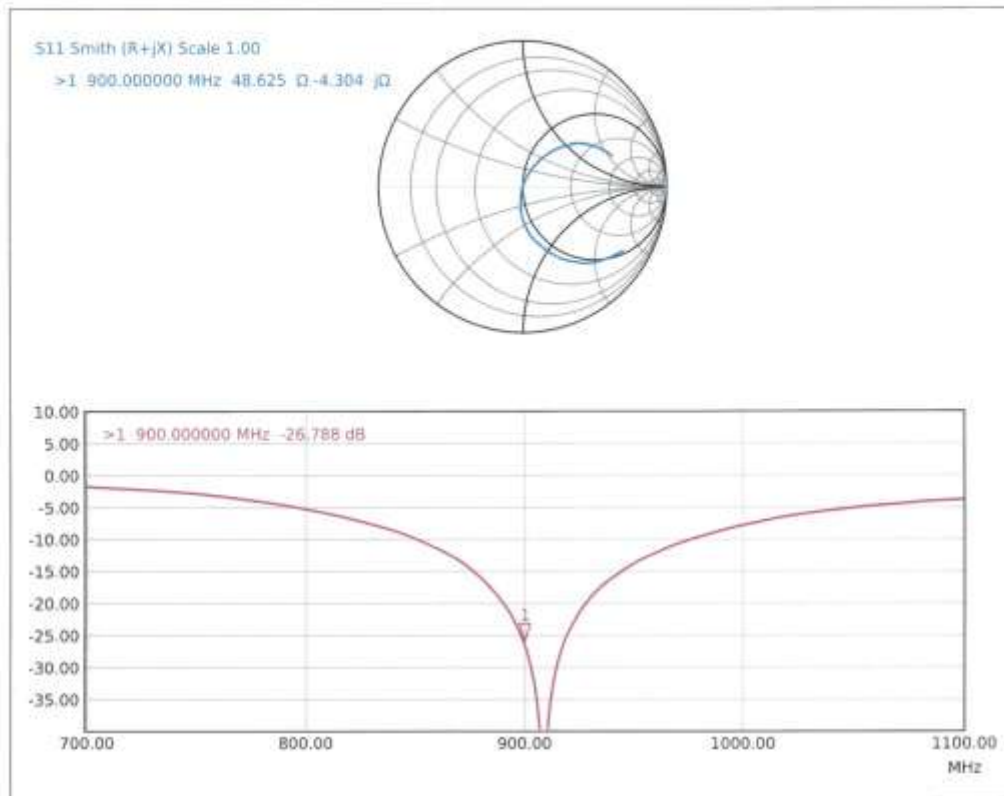




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Impedance Measurement Plot for Head TSL





Certification of Calibration



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Object D900V2 - SN: 094

Calibration Procedure Procedure for Calibration Extension for SAR Dipoles

Extended Calibration date 2026.01.17

Description SAR Validation Dipole at 900 MHz

Test method used CFR §2.1093

Calibration Equipment used:

Equipment	Manufacturer	Model	Serial No.	Cal. Date	Next Cal. Date	Cal. Interval
Data Acquisition Electronics	SPEAG	DAE4	1460	2025-11-19	2026-11-19	1 Year
E-Field Probe	SPEAG	EX3DV4	7359	2026-06-04	2027-06-04	1 Year
Dipole Antenna	SPEAG	D900V2	280	2025-01-17	2027-01-17	2 Years
RF Signal Generator	ANRITSU	68369B	992113	2026-01-06	2027-01-06	1 Year
RF POWER AMPLIFIER	L2 Microwave	BPA10T60W2-H	SH-02-0001	2026-01-06	2027-01-06	1 Year
DUAL DIRECTIONAL COUPLER	HP	778D-012	16468	2025-06-09	2026-06-09	1 Year
EPM Series Power Meter	HP	E4419B	MY45101506	2026-01-06	2027-01-06	1 Year
E-Series AVG Power Sensor	Agilent	E9300H	MY41495967	2026-01-06	2027-01-06	1 Year
E-Series AVG Power Sensor	Agilent	E9300H	US39215405	2026-01-06	2027-01-06	1 Year
ATTENUATOR	Agilent	8493C	52759	2026-01-06	2027-01-06	1 Year
ATTENUATOR	HP	8491B	22234	2026-01-06	2027-01-06	1 Year
Low Pass Filter	FILTRON	F-LPCA-KOO1430	1408003S	2026-01-06	2027-01-06	1 Year
DIELECTRIC ASSESSMENT KIT	SPEAG	DAK3.5	1205	2025-01-20	2026-01-20	1 Year
Network Analyzer	HP	8720C	3124A01008	2025-06-09	2026-06-09	1 Year
DIGITAL THERMOMETER	CAS	TE-201	NONE	2026-01-12	2027-01-12	1 Year
DIGITAL THERMOMETER	NONE	TP101	191105	2026-01-08	2027-01-08	1 Year

Note: CST (Calibration 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 : 20% (K = 2)

Affirmation	Tested by	Technical Manager
	Name : Min-sup Kim 	Name : Wi-han, Jeong 

KES-QP16-F01(00-23-01-01)

KES Co., Ltd.

The authenticity of this test report can be found on the verification page of our website (www.kes.co.kr).



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 20 dB minimum return-loss requirement.
3. The measurement of real or imaginary parts of impedance does not deviate more than 5 Ω 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:

PASS/FAIL	Calibration Date	Extension Date	Certificate Electronical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 24.0 dBm	Measured Head SAR (1g) W/kg @ 24.0 dBm	Deviation 1g (%)	Certificate SAR Target Head (10g) W/kg @ 24.0 dBm	Measured Head SAR (10g) W/kg @ 24.0 dBm	Deviation 10g (%)
PASS	2025-01-17	2026-01-17	1.406	10.90	11.20	2.75	6.93	6.88	-0.72
PASS/FAIL	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	48.625	49.602	0.977	-4.304	-2.316	1.988	-26.788	-29.532	-10.25

KES-QP16-F01(00-23-01-01)

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Appendix D. SAR Tissue Specifications

Measurement Procedure for Tissue verification:

- 1) The network analyzer and probe system was configured and calibrated.
- 2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
- 3) The complex admittance with respect to the probe aperture was measured.
- 4) The complex relative permittivity ϵ' can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\epsilon_r\epsilon_0}{[\ln(b/a)]^2} \int_a^b \int_a^b \int_0^\pi \cos\phi' \frac{\exp[-j\omega'(\mu_0\epsilon_r'\epsilon_0)^{1/2}r]}{r} d\phi' d\rho' d\rho$$

where Y is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

Table D-1 Composition of the Tissue Equivalent Matter - Head

Model No./Product No.	HBBL600-10000V6 / SL AAH U16 CA
Ingredient: Mixture[%]	Water: >77, Ethanol: <5.2, Sodium petroleum sulfonate: <2.9, Hexylene Glycol: <2.9, alkoxyated alcohol (>C16):<2.0
Temperature gradients [%/deg.C]	permittivity: -0.19 / conductivity: -0.57 (at 2.6 GHz), permittivity: +0.31 / conductivity: -1.43 (at 5.5 GHz)
Manufacture	SPEAG

Table D-2 Recommended Tissue Dielectric Parameters (IEC 1528-2013)

Frequency (MHz)	Relative permittivity (ϵ')	Conductivity (σ) (S/m)
300	45.3	0.87
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1500	40.4	1.23
1640	40.2	1.31
1750	40.1	1.37
1800	40.0	1.40
1900	40.0	1.40
2000	40.0	1.40
2100	39.8	1.49
2300	39.5	1.67
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
3500	37.9	2.91
4000	37.4	3.43
4500	36.8	3.94
5000	36.2	4.45
5200	36.0	4.66
5400	35.8	4.86
5600	35.5	5.07
5800	35.3	5.27
6000	35.1	5.48



Appendix E. SAR System Validation

Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table E-1 SAR System Validation Summary

SAR System #	Freq. [MHz]	Date	Probe SN	Probe Type	Cond.	Perm.	CW Validation			Mod. Validation		
					(σ)	(ϵ_r)	Sensitivity	Probe Linearity	Probe Isotropy	Mod. Type	Duty Factor	PAR
1	900	2026-01-22	7359	EX3DV4	0.949	41.236	PASS	PASS	PASS	DSSS	PASS	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (> 5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.