

# RF EXPOSURE TEST REPORT

Test Report No. 15786304S-A-R1

|                     |                        |
|---------------------|------------------------|
| Customer            | Yamaha Motor Co., Ltd. |
| Description of EUT  | METER Assy.            |
| Model Number of EUT | X5M                    |
| FCC ID              | 2ADBKX5M               |
| Test Regulation     | FCC 47CFR 2.1093       |
| Test Result         | Complied               |
| Issue Date          | November 14, 2025      |
| Remarks             | -                      |

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CERTIFICATE 1266.03

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- ☒ There is no testing item of "Non-accreditation".

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## **REVISION HISTORY**

| Revision     | Test Report No. | Date              | Page Revised Contents                                                                                                                                                                                                                       |
|--------------|-----------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - (Original) | 15786304S-A     | November 6, 2025  | -                                                                                                                                                                                                                                           |
| R1           | 15786304S-A-R1  | November 14, 2025 | <ul style="list-style-type: none"><li>● P7 Section 3.4<br/>KDB 248227 D01<br/>-&gt;<br/>delete</li><li>● P9 Section 4.2<br/>“Front” was excluded. Since the SAR(&gt;6 GHz) data of “Back” was enough margin.<br/>-&gt;<br/>delete</li></ul> |

**Reference : Abbreviations (Including words undescribed in this report)**

|                |                                                                 |             |                                                                                  |
|----------------|-----------------------------------------------------------------|-------------|----------------------------------------------------------------------------------|
| A2LA           | The American Association for Laboratory Accreditation           | MRA         | Mutual Recognition Arrangement                                                   |
| AC             | Alternating Current                                             | MU-MIMO     | Multi-User Multiple Input Multiple Output (Radio)                                |
| AFH            | Adaptive Frequency Hopping                                      | N/A         | Not Applicable, Not Applied                                                      |
| AM             | Amplitude Modulation                                            | NII         | National Information Infrastructure (Radio)                                      |
| Amp, AMP       | Amplifier                                                       | NIST        | National Institute of Standards and Technology                                   |
| ANSI           | American National Standards Institute                           | NR          | New Radio                                                                        |
| Ant, ANT       | Antenna                                                         | NS          | Nerve Stimulation                                                                |
| AP             | Access Point                                                    | NSA         | Normalized Site Attenuation                                                      |
| APD            | Absorbed Power Density                                          | NVLAP       | National Voluntary Laboratory Accreditation Program                              |
| ASK            | Amplitude Shift Keying                                          | OBW         | Occupied Band Width                                                              |
| Atten., ATT    | Attenuator                                                      | OFDM        | Orthogonal Frequency Division Multiplexing                                       |
| AV             | Average                                                         | OFDMA       | Orthogonal Frequency Division Multiple Access                                    |
| BPSK           | Binary Phase-Shift Keying                                       | PD          | Power Density                                                                    |
| BR             | Bluetooth Basic Rate                                            | psPD        | Peak spatial-average power density                                               |
| BT             | Bluetooth                                                       | psPDn+      | Surface-normal propagation-direction peak spatial-average power density          |
| BT LE          | Bluetooth Low Energy                                            | psPDtot+    | Total propagating spatial-average peak power density                             |
| BW             | BandWidth                                                       | psPDmod+    | Total peak spatial-average power density considering reactive near-field effects |
| Cal Int        | Calibration Interval                                            | P/M         | Power meter                                                                      |
| CCK            | Complementary Code Keying                                       | PCB         | Printed Circuit Board                                                            |
| CDD            | Cyclic Delay Diversity                                          | PER         | Packet Error Rate                                                                |
| CFR            | Code of Federal Regulations                                     | PHY         | Physical Layer                                                                   |
| Ch., CH        | Channel                                                         | PK          | Peak                                                                             |
| CISPR          | Comite International Special des Perturbations Radioelectriques | PN          | Pseudo random Noise                                                              |
| CW             | Continuous Wave                                                 | PP          | Preamble Puncturing                                                              |
| DBPSK          | Differential BPSK                                               | PRBS        | Pseudo-Random Bit Sequence                                                       |
| DC             | Direct Current                                                  | PSD         | Power Spectral Density                                                           |
| D-factor       | Distance factor                                                 | QAM         | Quadrature Amplitude Modulation                                                  |
| DFS            | Dynamic Frequency Selection                                     | QP          | Quasi-Peak                                                                       |
| DQPSK          | Differential QPSK                                               | QPSK        | Quadrature Phase Shift Keying                                                    |
| DSSS           | Direct Sequence Spread Spectrum                                 | RAT         | Radio Access Technology                                                          |
| DUT            | Device Under Test                                               | RBW         | Resolution Band Width                                                            |
| EDR            | Enhanced Data Rate                                              | RDS         | Radio Data System                                                                |
| EIRP, e.i.r.p. | Equivalent Isotropically Radiated Power                         | RE          | Radio Equipment                                                                  |
| EMC            | ElectroMagnetic Compatibility                                   | RF          | Radio Frequency                                                                  |
| EMI            | ElectroMagnetic Interference                                    | RMS         | Root Mean Square                                                                 |
| EN             | European Norm                                                   | RSS         | Radio Standards Specifications                                                   |
| ERP, e.r.p.    | Effective Radiated Power                                        | RU          | Resource Unit                                                                    |
| ETSI           | European Telecommunications Standards Institute                 | Rx          | Receiving                                                                        |
| EU             | European Union                                                  | SA, S/A     | Spectrum Analyzer                                                                |
| EUT            | Equipment Under Test                                            | SAR         | Specific Absorption Rate                                                         |
| Fac.           | Factor                                                          | SDM         | Space Division Multiplexing                                                      |
| FCC            | Federal Communications Commission                               | SISO        | Single Input Single Output (Radio)                                               |
| FHSS           | Frequency Hopping Spread Spectrum                               | SG          | Signal Generator                                                                 |
| FM             | Frequency Modulation                                            | sPD         | Spatial-average power density                                                    |
| Freq.          | Frequency                                                       | sPDn+       | Surface-normal propagation-direction spatial-average power density               |
| FSK            | Frequency Shift Keying                                          | sPDtot+     | Total propagating spatial-average power density                                  |
| GFSK           | Gaussian Frequency-Shift Keying                                 | sPDmod+     | Total spatial-average power density considering reactive near-field effects      |
| GNSS           | Global Navigation Satellite System                              | SPLSR       | SAR to Peak Location Separation Ratio                                            |
| GPS            | Global Positioning System                                       | SVSWR       | Site-Voltage Standing Wave Ratio                                                 |
| HE             | High Efficiency (e.g. IEEE 802.11ax20HE)                        | TER         | Total Exposure Ratio                                                             |
| HT             | High Throughput (e.g. IEEE 802.11n20HT)                         | TSL         | Tissue Simulation Liquid                                                         |
| Hori.          | Horizontal                                                      | T/R         | Test Receiver                                                                    |
| ICES           | Interference-Causing Equipment Standard                         | Tx          | Transmitting                                                                     |
| IEC            | International Electrotechnical Commission                       | U-NII       | Unlicensed National Information Infrastructure (Radio)                           |
| IEEE           | Institute of Electrical and Electronics Engineers               | URS         | Unintentional Radiator(s)                                                        |
| IF             | Intermediate Frequency                                          | VBW         | Video BandWidth                                                                  |
| ILAC           | International Laboratory Accreditation Conference               | Vert.       | Vertical                                                                         |
| IPD            | Incident Power Density                                          | VHT         | Very High Throughput (e.g. IEEE 802.11ac20VHT)                                   |
| ISED           | Innovation, Science and Economic Development Canada             | WLAN        | Wireless LAN                                                                     |
| ISO            | International Organization for Standardization                  | Wi-Fi, WiFi | Wireless LAN, trademarked by Wi-Fi Alliance                                      |
| JAB            | Japan Accreditation Board                                       | WPT         | Wireless Power Transmit                                                          |
| LAN            | Local Area Network                                              |             |                                                                                  |
| LIMS           | Laboratory Information Management System                        |             |                                                                                  |
| MCS            | Modulation and Coding Scheme                                    |             |                                                                                  |
| MIMO           | Multiple Input Multiple Output (Radio)                          |             |                                                                                  |
| MPE            | Maximum Permissible Exposure                                    |             |                                                                                  |

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## SECTION 1: Customer information

|                  |                                                       |
|------------------|-------------------------------------------------------|
| Company Name     | Yamaha Motor Co., Ltd.                                |
| Address          | 2500 Shingai, Iwata-shi, Shizuoka-ken, 438-8501 Japan |
| Telephone Number | +81-538-37-1842                                       |
| Contact Person   | Yu Yüemin                                             |

The information provided from the customer is as follows;

- Customer name, Company name, Type of Equipment, Model No., FCC ID on the cover and other relevant pages.
- SECTION 1: Customer information
- SECTION 2: Equipment under test (EUT)
- SECTION 4: Operation of EUT during testing
- APPENDIX 1: The part of Antenna location information, Description of EUT and Support Equipment

## SECTION 2: Equipment under test (EUT)

### 2.1 Identification of EUT

|               |                                                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------|
| Description   | METER Assy.                                                                                                          |
| Model Number  | X5M                                                                                                                  |
| Serial Number | Refer to Appendix 1-2                                                                                                |
| Rating        | DC 5 V                                                                                                               |
| Condition     | Engineering prototype (Not for sale: The sample is equivalent to mass-produced items.)                               |
| Modification  | No Modification by the test lab.                                                                                     |
| Receipt Date  | October 3, 2025 and October 15, 2025 (for power measurement)<br>January 15, 2025 and January 17, 2025 (for SAR test) |
| Test Date     | January 3, 2025 to October 15, 2025 (for power measurement)<br>October 21, 2025 to (for SAR test)                    |

### 2.2 Product Description

#### General Specification

|                         |                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| SAR Category Identified | Portable device (*. Since EUT may contact to a localized human body during wireless operation, the partial-body SAR (1 g) shall be observed.) |
| SAR Accessory           | None, There are no accessories that would affect SAR test.                                                                                    |

#### Radio specification

This report contains data provided by the customer which can impact the validity of results. UL Japan, Inc. is only responsible for the validity of results after the integration of the data provided by the customer. The data provided by the customer is marked "a)" in the table below.

#### Bluetooth (Low Energy)

|                        |                      |
|------------------------|----------------------|
| Equipment Type         | Transceiver          |
| Frequency of Operation | 2402 MHz to 2480 MHz |
| Type of Modulation     | GFSK                 |
| Antenna Gain *a)       | 1.38 dBi             |

#### ANT+

|                        |             |
|------------------------|-------------|
| Equipment Type         | Transmitter |
| Frequency of Operation | 2457 MHz    |
| Type of Modulation     | GFSK        |
| Antenna Gain *a)       | 1.38 dBi    |

Table of Typical power and Maximum tune-up tolerance limit power  
(\*: Indicate only the lowest data rate which has maximum power.)

| Type | Band | Channel | Frequency [MHz] | Mode  | D/R [bps] or MCS index# | Typ. [dBm] | Max. [dBm] | Typ. [dBm] | Max. [dBm] |
|------|------|---------|-----------------|-------|-------------------------|------------|------------|------------|------------|
| BT   | ANT+ | -       | 2457            | -     | 20k                     | 3          | 6          | N/A        | N/A        |
| BT   | BTLE | 0 to 39 | 2402 to 2480    | PHY 1 | 1M                      | 3          | 6          | N/A        | N/A        |

\*: [Yellow marker]: The transmission mode with the highest power in each band is marked with a yellow marker.

\*: Maximum tune-up tolerance limit is conducted burst average power and is defined by a customer as Duty cycle 100 % (continuous transmitting).

\*: D/R: data rate, Ant.: antenna, Max. Maximum tune-up limit power, N/A: Not applicable.

## SECTION 3: Maximum SAR value, test specification and procedures

### 3.1 Summary of Maximum SAR Value

| Mode / Band               | Highest Reported SAR [W/kg]                                                                                                                                                                                                                      |                    |       |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------|
|                           | Partial-body (Flat phantom, Separation 0 mm)                                                                                                                                                                                                     | Head (SAM phantom) | Limbs |
|                           | 1 g                                                                                                                                                                                                                                              | 1 g                | 10 g  |
| Bluetooth                 | 0.08                                                                                                                                                                                                                                             | N/A                | N/A   |
| ANT+                      | 0.06                                                                                                                                                                                                                                             | N/A                | N/A   |
| Simultaneous Transmission | N/A                                                                                                                                                                                                                                              | N/A                | N/A   |
| Limit applied             | Partial body, Head: 1.6 W/kg (SAR1 g), Limbs: 4.0 W/kg (SAR10 g), for general population/uncontrolled exposure is specified in FCC 47 CFR 2.1093.                                                                                                |                    |       |
| Test Procedure            | Refer to Section 3.2 in this report. In addition;<br>UL Japan's SAR measurement work procedures No. ULID-003599 (13-EM-W0430).<br>UL Japan's SAR measurement equipment calibration and inspection work procedures No. ULID-003598 (13-EM-W0429). |                    |       |

\*. Bluetooth and ANT+ use same antenna. Therefore, simultaneously transmitted SAR was not considered in this platform standalone base.

### Conclusion

The SAR test values found for the device are separately below the maximum limit of 1.6 W/kg.

### 3.2 RF Exposure limit

For the purpose of this Regulation, FCC has adopted the SAR and RF exposure limits established in FCC 47 CFR 1.1310: Radiofrequency radiation exposure limits.

| SAR Exposure Limit (100 kHz to 6 GHz) |                                                 |                                         |
|---------------------------------------|-------------------------------------------------|-----------------------------------------|
|                                       | General Population / Uncontrolled Exposure (*1) | Occupational / Controlled Exposure (*2) |
| Whole Body                            | 0.08 W/kg                                       | 0.4 W/kg                                |
| Partial-Body, Head or Body (1 g)      | 1.6 W/kg                                        | 8 W/kg                                  |
| Hands / Feet / Ankle / Wrist (10 g)   | 4 W/kg                                          | 20 W/kg                                 |

\*1. General Population / Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

\*2. Occupational / 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).

Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.

The limit applied to this device which tested in this report is;

|                                          |          |                                            |
|------------------------------------------|----------|--------------------------------------------|
| Limit of Spatial Peak SAR (Partial-Body) | 1.6 W/kg | General population / uncontrolled exposure |
|------------------------------------------|----------|--------------------------------------------|

### 3.3 Test specification

|               |                                                                |
|---------------|----------------------------------------------------------------|
| 47 CFR 2.1093 | Radiofrequency radiation exposure evaluation: portable devices |
|---------------|----------------------------------------------------------------|

### 3.4 Published RF exposure KDB procedures and companion procedures

| Name of documents        | Title                                                                                                                                                                                                                                                                            | Version |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| ANSI/IEEE C95.1          | IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz                                                                                                                                                       | 1992    |
| IEEE Std. 1528           | IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.                                                                                                | 2013    |
| KDB 447498 D04           | RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices                                                                                                                                                                                      | v01     |
| KDB 447498 D03           | OET Bulletin 65, Supplement C Cross-Reference                                                                                                                                                                                                                                    | v01     |
| KDB 865664 D01           | SAR measurement 100 MHz to 6 GHz                                                                                                                                                                                                                                                 | v01r04  |
| KDB 865664 D02           | RF exposure compliance reporting and documentation considerations                                                                                                                                                                                                                | v01r02  |
| IEC/IEEE 62209-1528 (*1) | Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz). | 2020    |

\*1. The measurement uncertainty budget is suggested by IEC/IEEE 62209-1528.

In addition to the above, the following information was used:

|                      |                                                                                                                                                                                                                                                       |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TCB workshop 2016-10 | (RF Exposure Procedure) Bluetooth Duty Factor.                                                                                                                                                                                                        |
| TCB workshop 2016-10 | (RF Exposure Procedure) DUT Holder Perturbations; When the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands. |
| TCB workshop 2017-05 | (RF Exposure Procedure) Broadband liquid above 3 GHz. Allow application of 10% tissue dielectric tolerance correction in KDB 865664 D01.                                                                                                              |
| TCB workshop 2018-04 | (RF Exposure Procedure) Allow Expedited Area Scans. (including mother scans)                                                                                                                                                                          |
| TCB workshop 2019-04 | (RF Exposure Procedure) 802.11ax SAR Testing                                                                                                                                                                                                          |
| TCB workshop 2019-04 | (RF Exposure Procedure) Tissue Simulating Liquids (TSL) FCC has permitted the use of single head tissue simulating liquid specified in IEC 62209 for all SAR tests. If FCC parameters are used, 5 % tolerance. If IEC parameters, 10 %.               |
| TCB workshop 2019-04 | (RF Exposure Policy) SAR Zoom-Scan Update.                                                                                                                                                                                                            |
| TCB workshop 2019-11 | (RF Exposure Procedure) SPLSR Hotspot Combination                                                                                                                                                                                                     |
| TCB workshop 2021-04 | (RF Exposure Procedure) Application of specific phantoms. (case by case, PAG)                                                                                                                                                                         |
| TCB workshop 2022-04 | (RF Exposure Procedure) Sum Peak Location Separation Ratio (SPLSR)                                                                                                                                                                                    |
| TCB workshop 2025-04 | (RF Exposure Procedure) Interim RF Exposure Testing Guidance.                                                                                                                                                                                         |

### 3.5 Additions or Deviations to Standards

No addition, exclusion nor deviation has been made from the test standard.

### 3.6 Test Location

UL Japan, Inc., Shonan EMC Lab.

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Telephone number: +81 463 50 6400

\*. A2LA Certificate Number: 1266.03 (FCC Test Firm Registration Number: 626366,

ISED Lab Company Number: 2973D / CAB identifier: JP0001)

| Place                   | Width × Depth × Height (m) | Size of reference ground plane (m) / horizontal conducting plane |
|-------------------------|----------------------------|------------------------------------------------------------------|
| No.7 Shielded room(SR7) | 2.76 × 3.76 × 2.4          | 2.76 × 3.76                                                      |

### 3.7 SAR measurement procedure

#### 3.7.1 SAR Definition

|                                                                                                                                                                                                                                                |                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| SAR 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 ( $\rho$ ). The equation description is shown in right. | $SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho \cdot dV} \right)$ |
| SAR measurement can be related to the electrical field in the tissue by the equation in right. SAR is expressed in units of Watts per kilogram (W/kg).                                                                                         | $SAR = \frac{\sigma  E ^2}{\rho}$                                                                        |
| Where: $\sigma$ = conductivity of the tissue (S/m), $\rho$ = mass density of the tissue (kg/m <sup>3</sup> ), E = RMS electric field strength in tissue (V/m)                                                                                  |                                                                                                          |

#### 3.7.2 Full SAR measurement procedure

The SAR measurement procedures are as follows: (1) The EUT is installed engineering testing software that provides continuous transmitting signal; (2) Measure output power through RF cable and power meter; (3) Set scan area, grid size and other setting on the DASY software; (4) Find out the largest SAR result on these testing positions of each band; (5) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg.

\* According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

Step 1) Power measurement -> SAR: Step 2) Power reference measurement -> Step 3) Area scan -> Step 4) Zoom scan -> Step 5) Power drift measurement

##### Step 1: Confirmation before SAR testing

Before SAR test, the RF wiring for the sample had been switched to the antenna conducted power measurement line from the antenna line and the average power was measured. This SAR reference power measurement was proceeded with the lowest data rate (which may have the higher time-based average power typically) on each operation mode and on the lower, middle (or near middle), upper and specified channels. The power measurement result is shown in Section 5.

\* The EUT transmission power used SAR test was verified that it was not more than 2 dB lower than the maximum tune-up tolerance limit. (KDB447498 D04 (v01))

##### Step 2: Power reference measurement

Measured psSAR value at a peak location of Fast Area Scan was used as a reference value for assessing the power drop.

##### Step 3: Area Scan

(Scan parameters: KDB 865664 D01, IEC/IEEE 62209-1528 (> 6GHz))

Area Scans are used to determine the peak location of the measured field before doing a finer measurement around the hotspot. Peak location can be found accurately even on coarse grids using the advanced interpolation routines implemented in DASY8. Area Scans measure a two dimensional volume covering the full device under test area. DASY8 uses Fast Averaged SAR algorithm to compute the 1 g and 10 g of simulated tissue from the Area Scan. DASY8 can either manually or automatically generates Area Scan grid settings based on device dimensions. In automatically case, the scan extent is defined by the device dimensions plus additional 15mm on each side. In manually, the scan covered the entire dimension of the antenna of EUT.

##### Step 4: Zoom Scan and post-processing

(Scan parameters: KDB 865664 D01, IEC/IEEE 62209-1528 (> 6GHz))

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure.

\* A minimum volume of 30 mm (x) × 30 mm (y) × 30 mm (z) was assessed by "Ratio step" method (\*1), for 2.4 GHz band. (Step XY: 5 mm)

\* A minimum volume of 24 mm (x) × 24 mm (y) × 22 mm (z) was assessed by "Ratio step" method (\*1), for 5 GHz band (Step XY: 4 mm).

\* A minimum volume of 22 mm (x) × 22 mm (y) × 22 mm (z) was assessed by "Ratio step" method (\*1), for 6 GHz band (Step XY: 3.4 mm).

When the SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are proceeded for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR. If the zoom scan measured as defined above complies with both of the following criteria. or if the peak spatial-average SAR is below 0.1 W/kg, no additional measurements are needed.

\* The smallest horizontal distance from the local SAR peaks to all points 3 dB below the SAR peak shall be larger than the horizontal grid steps in both x and y directions and recorded.

\* The ratio of the SAR at the second measured point to the SAR at the closest measured point at the x-y location of the measured maximum SAR value shall be at least 30 % and recorded.

##### Step 5: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same project. The Power Drift Measurement gives the SAR difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. It was checked that the power drift was within ± 5% (0.21 dB) in single SAR project run. The verification of power drift during the SAR test shown in SAR plot data of APPENDIX 2.

\* The most of SAR tests were conservatively performed with test separation distance 0 mm. The phantom bottom thickness is approx. 2mm. Therefore, the distance between the SAR probe tip to the surface of test device which is touched the bottom surface of the phantom is approx. 2.4 mm. Typical distance from probe tip to probe's dipole centers is 1 mm.

\*1. "Ratio step" method parameters used; the first measurement point: "1.4 mm" from the phantom surface, the initial z grid separation: "1.5 mm", subsequent graded grid ratio: "1.5" for 2.4 GHz band and the initial z grid separation: "1.4 mm", subsequent graded grid ratio: "1.4" for above 5 GHz. These parameters comply with the requirement of KDB 865664 D01 and recommended by Schmid & Partner Engineering AG (DASY8 manual).

|                                                                                                        |                                                                                                                                               | $f \leq 3$ GHz                                                                                                                                                                                                                                                         | $3 \text{ GHz} < f \leq 10 \text{ GHz}$                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface |                                                                                                                                               | 5 mm ± 1 mm                                                                                                                                                                                                                                                            | $1/2 \times \delta \times \ln(2)$ mm ± 0.5 mm                                                                                                                                                                     |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location              |                                                                                                                                               | $5^\circ \pm 1^\circ$ (flat phantom only)<br>$30^\circ \pm 1^\circ$ (other phantom)                                                                                                                                                                                    | $5^\circ \pm 1^\circ$ (flat phantom only)<br>$30^\circ \pm 1^\circ$ (other phantom)                                                                                                                               |
| Maximum area scan spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$                               |                                                                                                                                               | $\leq 2 \text{ GHz} : \leq 15 \text{ mm},$<br>$2 \sim 3 \text{ GHz} : \leq 12 \text{ mm}$                                                                                                                                                                              | $3 \sim 4 \text{ GHz} : \leq 12 \text{ mm},$<br>$4 \sim 6 \text{ GHz} : \leq 10 \text{ mm},$<br>$> 6 \text{ GHz} : \leq 60/f \text{ mm},$ or<br>half of the corresponding zoom scan length, whichever is smaller. |
|                                                                                                        |                                                                                                                                               | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                                                                                                                                                                                                   |
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$                               |                                                                                                                                               | $\leq 2 \text{ GHz} : \leq 8 \text{ mm},$<br>$2 \sim 3 \text{ GHz} : \leq 5 \text{ mm} (*1)$                                                                                                                                                                           | $3 \sim 4 \text{ GHz} : \leq 5 \text{ mm} (*1),$<br>$4 \sim 6 \text{ GHz} : \leq 4 \text{ mm} (*1),$<br>$> 6 \text{ GHz} : \leq 24/f \text{ mm}$                                                                  |
| Maximum zoom scan spatial resolution, normal to phantom surface                                        | uniform grid: $\Delta z_{Zoom}(n)$                                                                                                            | $\leq 5 \text{ mm}$                                                                                                                                                                                                                                                    | $3 \sim 4 \text{ GHz} : \leq 4 \text{ mm},$<br>$4 \sim 5 \text{ GHz} : \leq 3 \text{ mm},$<br>$5 \sim 6 \text{ GHz} : \leq 2 \text{ mm},$<br>$> 6 \text{ GHz} : \leq 10/(f-1) \text{ mm}$                         |
|                                                                                                        | graded grid<br>$\Delta z_{Zoom}(1)$ : between 1st two points closest to phantom surface<br>$\Delta z_{Zoom}(n>1)$ : between subsequent points | $\leq 4 \text{ mm}$                                                                                                                                                                                                                                                    | $3 \sim 4 \text{ GHz} : \leq 3 \text{ mm},$<br>$4 \sim 5 \text{ GHz} : \leq 2.5 \text{ mm},$<br>$5 \sim 6 \text{ GHz} : \leq 2 \text{ mm},$<br>$> 6 \text{ GHz} : \leq 12/f \text{ mm}$                           |
| Minimum zoom scan volume                                                                               |                                                                                                                                               | $\geq 30 \text{ mm}$                                                                                                                                                                                                                                                   | $3 \sim 4 \text{ GHz} : \geq 28 \text{ mm},$<br>$4 \sim 5 \text{ GHz} : \geq 25 \text{ mm},$<br>$5 \sim 6 \text{ GHz} : \geq 22 \text{ mm},$<br>$> 6 \text{ GHz} : \geq 22 \text{ mm}$                            |

Note:  $\delta$  is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 ( $\leq 6$  GHz) and IEC/IEEE 62209-1528 ( $\leq 10$  GHz) for details.

\*1. When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is  $\leq 1.4$  W/kg,  $\leq 8$  mm,  $\leq 7$  mm and  $\leq 5$  mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. (KDB 865664 D01)

\* The scan parameters of  $> 6$  GHz is defined IEC/IEEE 62209-1528.

## SECTION 4: Operation of EUT during testing

### 4.1 Operating modes for testing

The test modes and frequencies used in the SAR test are shown in the table of power measurement results in Section 5 with markings.

The control software in the power measurement and SAR test is shown in the following.

| Controlled software | Software name    | Version      | Date             | Storage location / Remarks |
|---------------------|------------------|--------------|------------------|----------------------------|
|                     | Direct Test Mode | 2.4.1        | October 3, 2025  | Host PC (BT)               |
|                     | MAIN MCU         | 1.2.9.5      | October 15, 2025 | Memory of EUT (ANT+)       |
|                     | BLE MCU          | 17.1.1(S212) | October 15, 2025 | Memory of EUT (ANT+)       |

### 4.2 RF exposure conditions (Test exemption considerations)

Antenna separation distances of each test setup plan and SAR test exemption of each test setup are shown as follows.

SAR test exemption consideration by KDB 447498 D04 (v01)

|         |                    | Antenna Separation distance [mm] |            |           |          |                                         |                                                    |
|---------|--------------------|----------------------------------|------------|-----------|----------|-----------------------------------------|----------------------------------------------------|
|         |                    | 6.35                             | 7.7        | 7.95      | 9.39     | 35.47                                   | 38.98                                              |
|         |                    | Top                              | Back       | Front     | Right    | Left                                    | Bottom                                             |
| Tx mode | Higher Freq. [MHz] | Antenna                          |            |           |          |                                         | SAR1g test exempt threshold power [mW] (upper row) |
|         |                    | Max. ATP [dBm]                   | Gain [dBi] | ERP [dBm] | ERP [mW] | Judge of SAR test exemption (lower row) |                                                    |
| BT LE   | 2480               | 6                                | 3.98       | 1.38      | 5.23     | 3.33                                    | 4.28                                               |
|         |                    |                                  |            |           |          |                                         | 6.18                                               |
| ANT+    | 2457               | 6                                | 3.98       | 1.38      | 5.23     | 3.33                                    | 6.57                                               |
|         |                    |                                  |            |           |          |                                         | 9.03                                               |
|         |                    |                                  |            |           |          |                                         | 113.47                                             |
|         |                    |                                  |            |           |          |                                         | 135.82                                             |
|         |                    |                                  |            |           |          |                                         | Exempt                                             |
|         |                    |                                  |            |           |          |                                         | Exempt                                             |
|         |                    |                                  |            |           |          |                                         | Exempt                                             |
|         |                    |                                  |            |           |          |                                         | Exempt                                             |

- \*. Freq.: Frequency, ATP: Antenna terminal conducted power.
- \*. Antenna separation distance. It is the distance from the antenna inside EUT to the outer surface of EUT which user may touch. Details of "antenna separation distance" and "Size of EUT" are shown in Appendix 1-1.
- \*. The table shows the upper frequency which has the maximum power (as "Tune-up limit") in each operation band, in mode and on the single antenna transmission.
- \*. Since this method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive), when the minimum test separation distance is < 5 mm, a distance of 5 mm was applied to determine SAR test exclusion for the calculation.
- \*. The actual test setup tested depends on the measurement results. See Section 7 for the actual tested test setup.

| Calculating formula:                                                                                                                                              |                                                                                                                                                             | TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION                                                                                                                                                                |           |                  |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|------------------|
| 1) ERP<br>ERP (dBm) = (Max. ATP, dBm) + (antenna gain, dBi) - 2.15                                                                                                | $P_{th}(mW) = \begin{cases} ERP_{20cm}(d/20)^x & d \leq 20cm \\ ERP_{20cm} & 20cm < d \leq 40cm \end{cases} \quad (B.2)$                                    | RF Source Frequency                                                                                                                                                                                                                                   |           |                  |                  |
| 2) SAR test exempt threshold power<br>$P_{th}(mW) = \begin{cases} 2040f & 0.3 GHz \leq f < 1.5 GHz \\ 3060 & 1.5 GHz \leq f \leq 6.0 GHz \end{cases} \quad (B.1)$ | $where \ x = -\log_{10}\left(\frac{60}{ERP_{20cm}\sqrt{f}}\right)$<br>and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1). | $f_L$ MHz                                                                                                                                                                                                                                             | $f_H$ MHz | $\lambda_L/2\pi$ | $\lambda_H/2\pi$ |
|                                                                                                                                                                   |                                                                                                                                                             | 0.3                                                                                                                                                                                                                                                   | 1.34      | 159 m            | 35.6 m           |
|                                                                                                                                                                   |                                                                                                                                                             | 1.34                                                                                                                                                                                                                                                  | 30        | 35.6 m           | 1.6 m            |
|                                                                                                                                                                   |                                                                                                                                                             | 30                                                                                                                                                                                                                                                    | 300       | 1.6 m            | 159 m            |
|                                                                                                                                                                   |                                                                                                                                                             | 300                                                                                                                                                                                                                                                   | 1500      | 159 mm           | 31.8 mm          |
|                                                                                                                                                                   |                                                                                                                                                             | 1500                                                                                                                                                                                                                                                  | 100000    | 31.8 mm          | 0.5 mm           |
|                                                                                                                                                                   |                                                                                                                                                             | Subscripts L and H are low and high; $\lambda$ is wavelength.<br>From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns. R is in meter, f is in MHz.<br>Upper 2.4GHz, Threshold ERP [W] = $19.2 \times R^2$ , at distance: over 40 cm |           |                  |                  |

SAR-based thresholds (Pth (mW)) shown below table of "Example Power Thresholds [mW]" are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged effective radiated power (ERP), whichever is greater. The SAR-based exemption is calculated by Formula (B.2) in below, applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

When 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

\*. This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).

Below is the test reduction procedure for KDB.

#### \* SAR test reduction considerations

(KDB 447498 D04(v01) General RF Exposure Guidance) 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:

- (1)  $\leq 0.8$  W/kg for 1g, or 2.0 W/kg for 10g respectively, when the transmission band is  $\leq 100$  MHz
- (2)  $\leq 0.6$  W/kg for 1g, or 1.5 W/kg for 10g respectively, when the transmission band is between 100 MHz and 200 MHz
- (3)  $\leq 0.4$  W/kg for 1g, or 1.0 W/kg for 10g respectively, when the transmission band is  $\geq 200$  MHz

The SAR has been measured with highest transmission duty factor supported by the test mode tool for WLAN and/or Bluetooth. When the transmission duty factor could not be 100%, the reported SAR will be scaled to 100% transmission duty factor to determine compliance. When SAR is not measured at the maximum power level allowed for production unit, the measured SAR will be scaled to the maximum tune-up tolerance limit to determine compliance.

## SECTION 5: Confirmation before testing

### 5.1 Test reference power measurement

| CH | Freq.<br>[MHz] | Tx mode   |               |                   |        | Power         |               |     | Duty cycle<br>[%] | Duty factor<br>[dB] | Duty scaled factor<br>[-] | Power               |                    |              |               |
|----|----------------|-----------|---------------|-------------------|--------|---------------|---------------|-----|-------------------|---------------------|---------------------------|---------------------|--------------------|--------------|---------------|
|    |                | Mode      | D/R<br>[Mbps] | Number of Tx ant. | Stream | Typ.<br>[dBm] | Max.<br>[dBm] | Set |                   |                     |                           | Burst Ave.<br>[dBm] | Burst Ave.<br>[mW] | Δmax<br>[dB] | Scaled Factor |
| -  | 2457           | ANT+      | 0.02          | 1Tx               | 1ST    | 3             | 6             | Fix | 94.6              | 0.24                | 1.06                      | 4.56                | 2.86               | 1.44         | 1.39          |
| 0  | 2402           | BT LE(1M) | 1             | 1Tx               | 1ST    | 3             | 6             | 4   | 85.3              | 0.69                | 1.17                      | 4.02                | 2.52               | 1.98         | 1.58          |
| 19 | 2440           | BT LE(1M) | 1             | 1Tx               | 1ST    | 3             | 6             | 4   | 85.3              | 0.69                | 1.17                      | 4.03                | 2.53               | 1.97         | 1.57          |
| 39 | 2480           | BT LE(1M) | 1             | 1Tx               | 1ST    | 3             | 6             | 4   | 85.3              | 0.69                | 1.17                      | 4.02                | 2.52               | 1.98         | 1.58          |

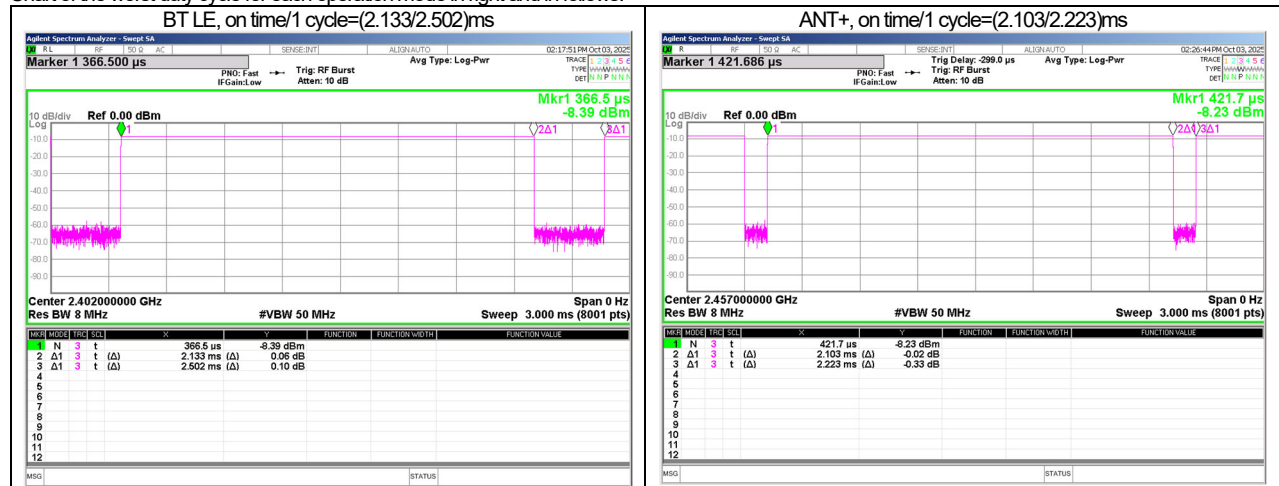
\* CH: Channel; Power: Power specification; Max.: Maximum; Set: Set power by test software; Burst Ave.: Measured burst average power; Time Ave.: Measured time-based average power; N/A: Not applied/Not applicable.

\* Calculating formula:  
Time average power (dBm) = (P/M Reading, dBm)+(Cable loss, dB)+(Attenuator, dB)  
Burst power (dBm) = (P/M Reading, dBm)+(Cable loss, dB)+(Attenuator, dB)+(duty factor, dB)  
Duty cycle: (duty cycle, %) = (Tx on time) / (1 cycle time) × 100, Duty factor (dBm) = 10 × log (100/(duty cycle, %))  
Duty cycle scaled factor [-] = 100% / (duty cycle, %), Power scaled factor [-] = 1 / (10 ^ ("Deviation from max., dB" / 10))  
ΔMax. (Deviation from max.power, dB) = (Max.tune-up limit power (average, dBm)) - (Burst power measured (average, dBm))

| Date             | Test site              | Temperature | Humidity | Engineer    |
|------------------|------------------------|-------------|----------|-------------|
| October 3, 2025  | No. 7 preparation room | 23 deg. C   | 38 % RH  | Akihiro Oda |
| October 15, 2025 | No. 7 preparation room | 23.5 deg. C | 43 % RH  | Akihiro Oda |

\* Uncertainty of antenna port conducted test; (±) 1.3 dB (Average power), (±) 0.27 % (duty cycle).

Chart of the worst duty cycle for each operation mode in right and in follows.



## SECTION 6: Tissue simulating liquid

### 6.1 Liquid measurement

<SPC: System performance check>

| Date<br>measured | Freq. | Liq.<br>type | Target | Permittivity (*, measured) |     |        |         |       | Target | Conductivity (*, calculated)(*) |        |      |      | ΔSAR |    | ΔSAR<br>correct<br>required<br>? | e', e"<br>Lerp<br>? | Liq.<br>Temp.<br>[deg. C.] | Liq.<br>depth<br>[mm] | Liquid usage conditions<br>(*1) |
|------------------|-------|--------------|--------|----------------------------|-----|--------|---------|-------|--------|---------------------------------|--------|------|------|------|----|----------------------------------|---------------------|----------------------------|-----------------------|---------------------------------|
|                  |       |              | e'     | e'                         | Δe' | Limit  | e"      | σ_tgt | σ      | Δσ                              | Limit  | 1g   | 10g  |      |    |                                  |                     |                            |                       |                                 |
| (YYYY-MM-DD)     | [MHz] |              | [-]    | [-]                        | [%] | [%](*) | [-]     | [S/m] | [S/m]  | [%]                             | [%](*) | [%]  | [%]  |      |    |                                  |                     |                            |                       |                                 |
| 2025-10-21       | 2450  | Head         | 39.20  | 41.07                      | 4.8 | ±10    | 13.4118 | 1.800 | 1.828  | 1.6                             | ±10    | -0.3 | -0.3 | Yes  | No | 22.4                             | 150                 | begin                      |                       |                                 |

<SAR test>

| Date measured | Freq. | Liq. type | Target | Permittivity (*, measured) |     |        |         |       | Target | Conductivity (*, calculated)(*) |        |      | ΔSAR |            | ΔSAR correct | e', e" | Liq. Temp. | Liq. depth                | Liquid usage conditions (*1) |
|---------------|-------|-----------|--------|----------------------------|-----|--------|---------|-------|--------|---------------------------------|--------|------|------|------------|--------------|--------|------------|---------------------------|------------------------------|
|               |       |           | e'     | e''                        | Δe' | Limit  | e''     | σ_tgt | σ      | Δσ                              | Limit  | 1g   | 10g  | required ? | e' Lerp      |        |            |                           |                              |
|               |       |           | [-]    | [-]                        | [%] | [%](*) | [-]     | [S/m] | [S/m]  | [%]                             | [%](*) | [%]  | [%]  | [deg.C.]   | [mm]         |        |            |                           |                              |
| 2025-10-21    | 2402  | Head      | 39.29  | 41.14                      | 4.7 | ±10    | 13.4076 | 1.757 | 1.792  | 2.0                             | ±10    | -0.1 | -0.2 | Yes        | No           | 22.4   | 150        | Measured before SAR test. |                              |
| 2025-10-21    | 2440  | Head      | 39.22  | 41.07                      | 4.7 | ±10    | 13.4170 | 1.791 | 1.821  | 1.7                             | ±10    | -0.2 | -0.3 | Yes        | No           | 22.4   | 150        |                           |                              |
| 2025-10-21    | 2457  | Head      | 39.19  | 41.06                      | 4.8 | ±10    | 13.4164 | 1.808 | 1.834  | 1.4                             | ±10    | -0.4 | -0.4 | Yes        | No           | 22.4   | 150        |                           |                              |
| 2025-10-21    | 2480  | Head      | 39.16  | 41.01                      | 4.7 | ±10    | 13.4118 | 1.833 | 1.850  | 0.9                             | ±10    | -0.6 | -0.5 | Yes        | No           | 22.4   | 150        |                           |                              |

\*. Lerp: Linear interpolation, Ref.: reference

\*1. Definition of Δend, "begin": there are measured before SAR test; "< 24 hrs.": SAR test has ended within 24 hours from the liquid parameter measured; "< 48 hrs.": Since SAR test has ended within 48 hours from the liquid parameter measured and a change in the liquid temperature was within 1 degree, liquid parameters measured on first day were used on next day continuously; "> 48 hrs.": Since the SAR test series took longer than 48 hours, the liquid parameters were measured on every 48 hours period and on the date which was end of test series. Since the difference of liquid parameters between the beginning and next measurement was smaller than 5%, the liquid parameters measured in beginning were used until end of each test series.

Calculating formula:  $\Delta_{end} \text{ (when, } >48 \text{ hrs.) } (\%) = \{(\text{dielectric properties, end of test series}) / (\text{dielectric properties, beginning of test series}) - 1\} \times 100$

\*2. The electrical properties of the liquid at <6 GHz were controlled to within 5 % even with a limit of 10 %.

\*3. (Calculating formula)  $\sigma = 2 \times \pi \times f \times \epsilon_0 \times \epsilon''$ , where  $\epsilon_0 = 8.854 \text{ E-12 [F/m]}$ ,  $\epsilon''$ : Imaginary permittivity [-], f: Frequency [Hz]

\*. The electrical characteristics of the SAR test frequencies were measured using DAK software, DAK-3.5 and a network analyzer with the 2.4 GHz band swept at 1 MHz and the 5 GHz and 6 GHz bands swept at 5 MHz. In this way, the electrical characteristics of all test frequencies were measured directly at the individual frequencies without interpolation.

\*. The target values refers to clause 6.2 of this report.

\*. The coefficients in below are parameters defined in IEEE Std.1528.

(Calculating formula, 4 MHz~6 GHz):  $\Delta\text{SAR}(1\text{g}) = C_{\epsilon'} \times \Delta\epsilon' + C_{\sigma} \times \Delta\sigma$ ,  $C_{\epsilon'} = 7.854\text{E-4} \times f^3 + 9.402\text{E-3} \times f^2 - 2.742\text{E-2} \times f + 0.2026$  /  $C_{\sigma} = 9.804\text{E-3} \times f^3 - 8.661\text{E-2} \times f^2 + 2.981\text{E-2} \times f + 0.7829$

$\Delta\text{SAR}(10\text{g}) = C_{\epsilon'} \times \Delta\epsilon' + C_{\sigma} \times \Delta\sigma$ ,  $C_{\epsilon'} = 3.456 \times 10^{-3} \times f^3 + 3.531 \times 10^{-2} \times f^2 + 7.675 \times 10^{-2} \times f + 0.1860$  /  $C_{\sigma} = 4.479 \times 10^{-3} \times f^3 - 1.586 \times 10^{-2} \times f^2 - 0.1972 \times f + 0.7717$

(Calculating formula, above 6GHz):  $\Delta\text{SAR}(1\text{g}) = C_{\epsilon'} \times \Delta\epsilon' + C_{\sigma} \times \Delta\sigma$ ,  $C_{\epsilon'} = -0.198$  /  $C_{\sigma} = 0$ ,  $\Delta\text{SAR}(10\text{g}) = C_{\epsilon'} \times \Delta\epsilon' + C_{\sigma} \times \Delta\sigma$ ,  $C_{\epsilon'} = -0.250$  /  $C_{\sigma} = 0$

Since the ΔSAR values of the tested liquid had shown positive, the measured SAR was not ΔSAR corrected by the conservative reason.

(Calculating formula):  $\Delta\text{SAR corrected SAR (W/kg)} = (\text{Measured SAR (W/kg)}) \times (100 - (\Delta\text{SAR}(\%))) / 100$

### 6.2 Target of tissue simulating liquid

Nominal dielectric values of the Head-TSL (tissue simulating liquids) in the phantom refer to the following table. (Appendix A, KDB 865664 v01r04)

| Target Frequency | Head         |                | Body         |                | Target Frequency | Head         |                | Body         |                |
|------------------|--------------|----------------|--------------|----------------|------------------|--------------|----------------|--------------|----------------|
| (MHz)            | $\epsilon_r$ | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) | (MHz)            | $\epsilon_r$ | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) |
| 1800 to 2000     | 40.0         | 1.40           | 53.3         | 1.52           | 3000             | 38.5         | 2.40           | 52.0         | 2.73           |
| 2450             | 39.2         | 1.80           | 52.7         | 1.95           | 5800             | 35.3         | 5.27           | 48.2         | 6.00           |

\*. For other frequencies, the target nominal dielectric values were obtained by linear interpolation between the higher and lower tabulated figures. Above 5800MHz were obtained using linear extrapolation.

### 6.3 Simulated tissue composition

| Used                        | <input checked="" type="checkbox"/>          | <input type="checkbox"/>      |
|-----------------------------|----------------------------------------------|-------------------------------|
| Model No. / Product No.     | HBBL600-10000V6 / SL AAH U16 BC              | HBBL4-250V4 / SL AAH 005 AD   |
| Frequency [MHz]             | 600 to 10000                                 | 4 to 250                      |
| Ingredient: Mixture [%]     | Water: > 77                                  | 50 < Water < 90               |
|                             | Ethanol: < 5.2                               | 5 < Non-ionic detergents < 50 |
|                             | Sodium acids, petroleum, sodium salts: < 3   | NaCl: < 2                     |
|                             | Hexylene Glycol: < 3                         | Preservative: < 0.1           |
|                             | Alkoxylated alcohol (>C <sub>16</sub> ): < 2 | -                             |
|                             | Potassium hydroxide: < 1                     | -                             |
| Tolerance specification [%] | ± 10                                         |                               |
|                             | Schmid & Partner Engineering AG              |                               |

## SECTION 7: Measurement results

### 7.1 Measurement results

#### 7.1.1 SAR measurement results

| RF Exposure condition | Setup position | Gap [mm] | Source power | Tx mode   |     |        |            | Freq. |    | Duty [%] | Duty S/F [-] | Pmax [dBm] | Pset [-] | Pmeas [dBm] | Pwr. S/F [-] | SAR1g [W/kg] (*b) |          |              | Limit [W/kg] | Data plot#, Appx.2 |
|-----------------------|----------------|----------|--------------|-----------|-----|--------|------------|-------|----|----------|--------------|------------|----------|-------------|--------------|-------------------|----------|--------------|--------------|--------------------|
|                       |                |          |              | mode      | Tx  | Stream | D/R [Mbps] | [MHz] | CH |          |              |            |          |             |              | Meas.             | Δsar(*a) | Report       |              |                    |
| Body                  | Front          | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2402  | 0  | 85.3     | 1.17         | 6          | 4        | 4.02        | 1.58         | 0.041             | N/A      | <b>0.076</b> | 1.6          | -                  |
| Body                  | Front          | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2440  | 19 | 85.3     | 1.17         | 6          | 4        | 4.03        | 1.57         | 0.044             | N/A      | <b>0.081</b> | 1.6          | D1                 |
| Body                  | Front          | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2480  | 39 | 85.3     | 1.17         | 6          | 4        | 4.02        | 1.58         | 0.042             | N/A      | <b>0.078</b> | 1.6          | -                  |
| Body                  | Top            | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2402  | 0  | 85.3     | 1.17         | 6          | 4        | 4.02        | 1.58         | 0.012             | N/A      | <b>0.022</b> | 1.6          | -                  |
| Body                  | Top            | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2440  | 19 | 85.3     | 1.17         | 6          | 4        | 4.03        | 1.57         | 0.012             | N/A      | <b>0.022</b> | 1.6          | -                  |
| Body                  | Top            | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2480  | 39 | 85.3     | 1.17         | 6          | 4        | 4.02        | 1.58         | 0.012             | N/A      | <b>0.022</b> | 1.6          | -                  |
| Body                  | Back           | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2402  | 0  | 85.3     | 1.17         | 6          | 4        | 4.02        | 1.58         | 0.007             | N/A      | <b>0.013</b> | 1.6          | -                  |
| Body                  | Back           | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2440  | 19 | 85.3     | 1.17         | 6          | 4        | 4.03        | 1.57         | 0.009             | N/A      | <b>0.017</b> | 1.6          | -                  |
| Body                  | Back           | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2480  | 39 | 85.3     | 1.17         | 6          | 4        | 4.02        | 1.58         | 0.008             | N/A      | <b>0.015</b> | 1.6          | -                  |
| Body                  | Bottom         | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2440  | 19 | 85.3     | 1.17         | 6          | 4        | 4.03        | 1.57         | 0.003             | N/A      | <b>0.006</b> | 1.6          | -                  |
| Body                  | Right          | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2440  | 19 | 85.3     | 1.17         | 6          | 4        | 4.03        | 1.57         | 0.016             | N/A      | <b>0.029</b> | 1.6          | -                  |
| Body                  | Left           | 0        | Battery      | BT LE(1M) | 1Tx | 1ST    | 1          | 2440  | 19 | 85.3     | 1.17         | 6          | 4        | 4.03        | 1.57         | 0.003             | N/A      | <b>0.006</b> | 1.6          | -                  |
| Body                  | Front          | 0        | Battery      | ANT+      | 1Tx | 1ST    | 0.02       | 2457  | -  | 94.6     | 1.06         | 6          | Fix      | 4.56        | 1.39         | 0.04              | N/A      | <b>0.059</b> | 1.6          | D2                 |
| Body                  | Top            | 0        | Battery      | ANT+      | 1Tx | 1ST    | 0.02       | 2457  | -  | 94.6     | 1.06         | 6          | Fix      | 4.56        | 1.39         | 0.018             | N/A      | <b>0.027</b> | 1.6          | -                  |
| Body                  | Bottom         | 0        | Battery      | ANT+      | 1Tx | 1ST    | 0.02       | 2457  | -  | 94.6     | 1.06         | 6          | Fix      | 4.56        | 1.39         | 0.004             | N/A      | <b>0.006</b> | 1.6          | -                  |
| Body                  | Right          | 0        | Battery      | ANT+      | 1Tx | 1ST    | 0.02       | 2457  | -  | 94.6     | 1.06         | 6          | Fix      | 4.56        | 1.39         | 0.016             | N/A      | <b>0.024</b> | 1.6          | -                  |
| Body                  | Left           | 0        | Battery      | ANT+      | 1Tx | 1ST    | 0.02       | 2457  | -  | 94.6     | 1.06         | 6          | Fix      | 4.56        | 1.39         | 0.003             | N/A      | <b>0.004</b> | 1.6          | -                  |
| Body                  | Back           | 0        | Battery      | ANT+      | 1Tx | 1ST    | 0.02       | 2457  | -  | 94.6     | 1.06         | 6          | Fix      | 4.56        | 1.39         | 0.008             | N/A      | <b>0.012</b> | 1.6          | -                  |

- \*. The highest Reported (scaled) SAR on each antenna are marked with yellow marker (x.xxx), respectively.
- \*. Exempt: SAR test is exempted by evaluated SAR test exclusion threshold power. See section 4.; Ant.: Antenna; D/R: Data rate; Freq.: Frequency; Duty: Duty cycle; D.S/F: Duty Scaling Factor; Pmax: Max power (Tune-up tolerance power); Pmeas.: Measurement conducted power; P.S/F: Power Scaling Factor; Meas.: Measurement; Appx: Appendix; Gap: It is separation distance between the device surface and the bottom outer surface of phantom; ND.: No detected; Dist. b/w ant.: Minimum distance between two antennas on a drawing basis (Refer to Appendix 1-1).
- \*. All SAR tests were conservatively performed with test separation distance 0 mm.
- \*. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.

\*a. Since the calculated ΔSAR values of the tested liquid had shown positive correction even when error was more than 5 %, the measured SAR was not converted by ΔSAR correction.

Calculating formula: ΔSAR corrected SAR (W/kg) = (Measured SAR (W/kg)) × (100 - (ΔSAR(%))) / 100, when ΔSAR shows negative sign.

\*b. Calculating formula: Reported (Scaled) SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)  
where, Duty scaled factor (D.S/F) [-] = 100(%) / (measured duty cycle, %), Power scaled factor (P.S/F) [-] = 10<sup>4</sup> ((Max.power, dBm) - (Measured power, dBm)) / 10)

### 7.2 Simultaneous transmission (including Co-location) evaluation

Result: Simultaneous transmission is not existed.

### 7.3 SAR Measurement Variability (Repeated measurement requirement)

Result: Since all the measured SAR are less than 0.8 W/kg (SAR(1g)), the repeated measurement is not required.

### 7.4 Device holder perturbation verification (SAR)

Result: Since all the reported (scaled) SAR are less than 1.2 W/kg (SAR(1g)), the additional "device holder perturbation verification" measurement is not considered.

### 7.5 Requirements on the Uncertainty Evaluation

#### 7.5.1 SAR Uncertainty Evaluation

Decision Rule

☒ Uncertainty is not included.

☐ Uncertainty is included.

\*. The highest measured SAR(1g) is less than 1.5 W/kg and the highest measured SAR(10g) is less than 3.75 W/kg. Thus, per KDB Publication 865664 D01, the extended measurement uncertainty analysis described in IEC/IEEE 62209-1528 is not required. The uncertainty (k=2) of SAR measurement for 2.4 GHz to 6 GHz is smaller than 30 %.

Description of EUT and Support Equipment

| No. | Item             | Model number | Serial number  | Manufacturer     | Remark     |
|-----|------------------|--------------|----------------|------------------|------------|
| A   | METER Assy.      | X5M          | 12000500000303 | Yamaha Motor     | EUT (BT)   |
| B   | METER Assy.      | X5M          | 12000500001079 | Yamaha Motor     | EUT (ANT+) |
| C   | Conversion Board | -            | -              | SMK              | -          |
| D   | Laptop Computer  | HP 250 G9/CT | JPH318LW8Z     | HP               | -          |
| E   | AC Adapter       | TPN-LA15     | 0A5RH8WD5      | HP               | -          |
| F   | Power Supply(DC) | PW16-5ADP    | 18026330       | TEXIO TECHNOLOGY | -          |

List of cables used

| No. | Name   | Length (m) | Shield     | Remarks                                            |
|-----|--------|------------|------------|----------------------------------------------------|
| 1   | USB    | 0.6        | Shielded   | During SAR testing, the USB cable is not connected |
| 2   | DC     | 0.3+0.9    | Unshielded | -                                                  |
| 3   | Signal | 0.01       | Unshielded | -                                                  |
| 4   | DC     | 1.7        | Unshielded | -                                                  |
| 5   | AC     | 0.8        | Unshielded | -                                                  |
| 6   | AC     | 2.0        | Unshielded | -                                                  |

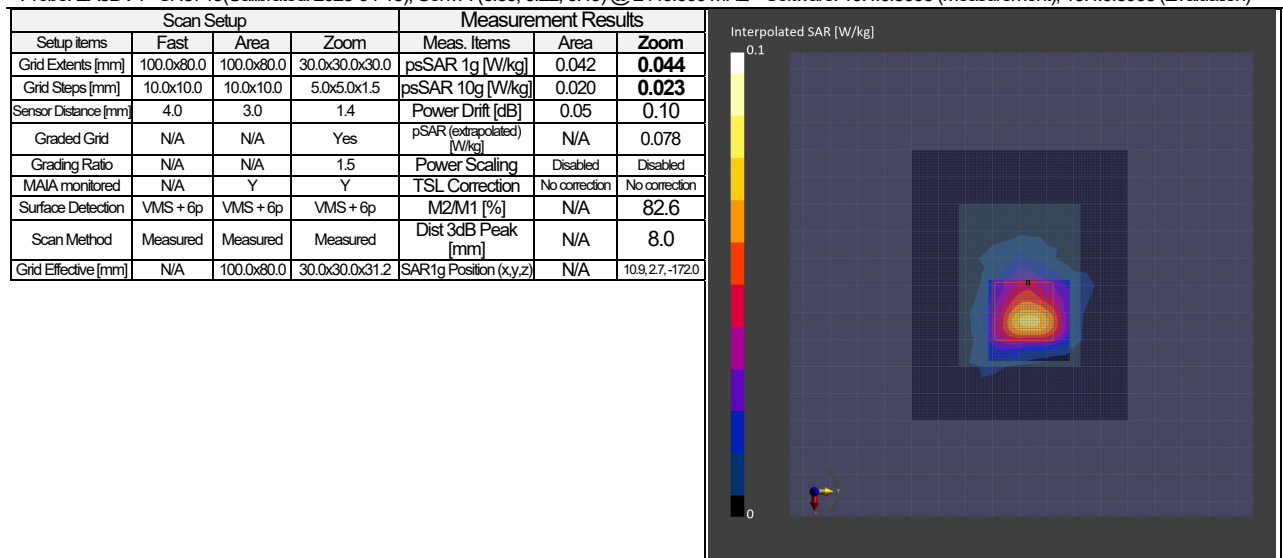
## APPENDIX 2: Measurement data

### Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna)

#### Plot D1:

Mode: BT LE (PHY1) CW (UID: 0 (CW)) ; Frequency: 2440.000 MHz ; Test Distance: 0.00 mm  
TSL parameters used: Head(v6) ; f= 2440.000 MHz; Conductivity: 1.82 S/m; Permittivity: 41.1

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2025-01-13) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161. ; Phantom section: Flat  
- Probe: EX3DV4 - SN3745 (Calibrated: 2025-04-15); ConvF: (6.59, 6.22, 6.49) @ 2440.000 MHz/ - Software: 16.4.0.5005 (Measurement); 16.4.0.5005 (Evaluation)

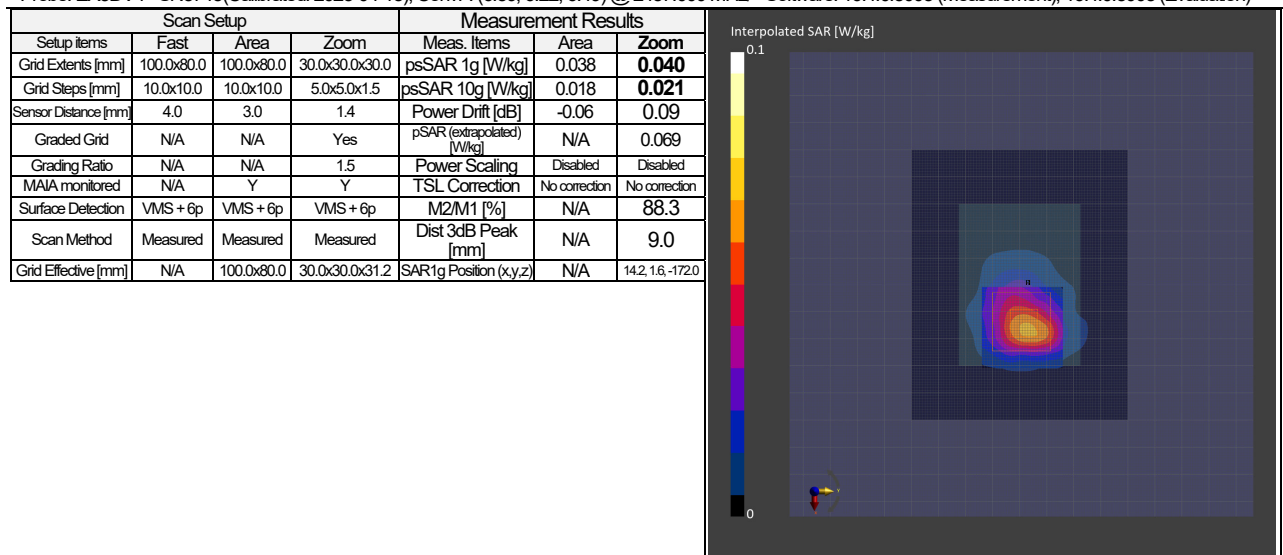


Remarks: \*. Order No.: 15786304 ;\*. Date tested:2025-10-21 ; Tested by: A. Oda; Tested location: UL Japan, Shonan EMC Lab. No.7 shielded room  
\*. Liquid temperature: 22.5 deg.C. ± 0.5 deg.C. (22.4 deg.C., in check); Ambient: (22~24) deg.C. / (50~70) %RH; \*. Red cubic: big=SAR(10g) / small=SAR(1g)  
\*. Project file name-Measurement Group: 251021,yamaha,15786304.d8sar- 8-10/21,ble,2440m,front

#### Plot D2:

Mode: ANT+ CW (UID: 0 (CW)) ; Frequency: 2457.000 MHz ; Test Distance: 0.00 mm  
TSL parameters used: Head(v6) ; f= 2457.000 MHz; Conductivity: 1.83 S/m; Permittivity: 41.1

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2025-01-13) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161. ; Phantom section: Flat  
- Probe: EX3DV4 - SN3745 (Calibrated: 2025-04-15); ConvF: (6.59, 6.22, 6.49) @ 2457.000 MHz/ - Software: 16.4.0.5005 (Measurement); 16.4.0.5005 (Evaluation)



Remarks: \*. Order No.: 15786304 ;\*. Date tested:2025-10-21 ; Tested by: A. Oda; Tested location: UL Japan, Shonan EMC Lab. No.7 shielded room  
\*. Liquid temperature: 22.5 deg.C. ± 0.5 deg.C. (22.4 deg.C., in check); Ambient: (22~24) deg.C. / (50~70) %RH; \*. Red cubic: big=SAR(10g) / small=SAR(1g)  
\*. Project file name-Measurement Group: 251021,yamaha,15786304.d8sar- 1-10/21,ant+,2457m,front

## APPENDIX 3: Test instruments

### Appendix 3-1: Equipment used

| Test Name | LIMS ID | Description                              | Manufacturer                    | Model                           | Serial                     | Last Calibration Date | Calibration Interval (Month) |
|-----------|---------|------------------------------------------|---------------------------------|---------------------------------|----------------------------|-----------------------|------------------------------|
| AT        | 236500  | Attenuator                               | To-Conne Co., Ltd.              | SA-PJ-10                        | -                          | 2024/11/12            | 12                           |
| AT        | 145191  | Coaxial Cable                            | Huber+Suhner                    | ST18/SMAm/SMAm/1000mm           | -                          | 2025/03/06            | 12                           |
| AT        | 169910  | Power Meter                              | Keysight Technologies Inc       | 8990B                           | MY51000448                 | 2025/05/21            | 12                           |
| AT        | 169911  | Power sensor                             | Keysight Technologies Inc       | N1923A                          | MY57270004                 | 2025/05/21            | 12                           |
| AT        | 188161  | Power Supply(DC)                         | GW Instek                       | PW16-5ADP                       | 18026330                   | -                     | -                            |
| AT        | 146223  | Spectrum Analyzer                        | Keysight Technologies Inc       | N9010A-526                      | MY48031482                 | 2024/10/18            | 12                           |
| AT,SAR    | 191844  | Thermo-Hygrometer                        | CUSTOM. Inc                     | CTH-201                         | -                          | 2025/08/14            | 12                           |
| SAR       | 224032  | 6-axis Robot                             | Schmid&Partner Engineering AG   | TX2-60L spe                     | F/22/0033789/A/001         | 2025/08/05            | 12                           |
| SAR       | 224031  | DASY8 Module SAR/APD soft                | Schmid&Partner Engineering AG   | ver.16.4.0.5005                 | 9-2506F07D ver.16.4.0.5005 | -                     | -                            |
| SAR       | 224020  | DASY8 PC                                 | Hewlett Packard                 | HP Z4 G4 Workstation            | CZC1198G21                 | -                     | -                            |
| SAR       | 144944  | Data Acquisition Electronics             | Schmid&Partner Engineering AG   | DAE4                            | 626                        | 2025/01/13            | 12                           |
| SAR       | 145596  | Device holder                            | Schmid&Partner Engineering AG   | Mounting device for transmitter | -                          | 2025/08/05            | 12                           |
| SAR       | 268465  | DI water                                 | MonotaRo                        | 34557433                        | -                          | -                     | -                            |
| SAR       | 144886  | Dielectric assessment kit soft           | Schmid&Partner Engineering AG   | DAK ver.3.0.6.72                | 9-0EE103A4 ver.3.0.6.72    | -                     | -                            |
| SAR       | 145500  | Dielectric probe                         | Schmid&Partner Engineering AG   | DAK3.5                          | 1129                       | 2025/01/14            | 12                           |
| SAR       | 201967  | Digital thermomoter                      | HANNA                           | Checktemp-4                     | A01440226111               | 2025/08/14            | 12                           |
| SAR       | 201968  | Digital thermomoter                      | HANNA                           | Checktemp-4                     | A01310946111               | 2025/08/14            | 12                           |
| SAR       | 145090  | Dipole Antenna                           | Schmid&Partner Engineering AG   | D2450V2                         | 822                        | 2025/01/07            | 12                           |
| SAR       | 226380  | Dosimetric E-Field Probe                 | Schmid & Partner Engineering AG | EX3DV4                          | 3745                       | 2025/04/15            | 12                           |
| SAR       | 224026  | Electro-Optical Converter                | Schmid & Partner Engineering AG | EOC8-60                         | 1027                       | -                     | -                            |
| SAR       | 224034  | Flat Phantom                             | Schmid&Partner Engineering AG   | ELI V8.0                        | 2161                       | 2025/08/18            | 12                           |
| SAR       | 255189  | Head Tissue Simulating Liquid            | Schmid & Partner Engineering AG | HBBL600-10000V6                 | SL AAH U16 BC              | -                     | -                            |
| SAR       | 224027  | Light Beam Unit                          | Schmid & Partner Engineering AG | LIGHTBEAM-85                    | 2069                       | -                     | -                            |
| SAR       | 224025  | Measurement Server                       | Schmid & Partner Engineering AG | DASY8 Measurement Server        | 10042                      | 2025/01/28            | 12                           |
| SAR       | 224028  | Modulation & Audio Interference Analyser | Schmid & Partner Engineering AG | MAIA                            | 1582                       | -                     | -                            |
| SAR       | 225155  | Mounting Platform                        | Schmid & Partner Engineering AG | MP8E-TX2-60L Basic              | -                          | -                     | -                            |
| SAR       | 146258  | Network Analyzer                         | Keysight Technologies Inc       | 8753ES                          | US39171777                 | 2025/10/07            | 12                           |
| SAR       | 255474  | Primepure Ethanol                        | Kanto Chemical Co., Inc.        | 14032-79                        | -                          | -                     | -                            |
| SAR       | 230872  | RF Power Source                          | Schmid&Partner Engineering AG   | POWERSOURCE1                    | 4300                       | 2025/01/03            | 12                           |
| SAR       | 224023  | Robot Controller                         | Schmid & Partner Engineering AG | CS9spe-TX2-60                   | F/22/0033789/C/001         | -                     | -                            |
| SAR       | 145087  | Ruler(100x50mm,L)                        | SHINWA                          | 12101                           | -                          | 2025/02/14            | 12                           |
| SAR       | 145086  | Ruler(300mm)                             | SHINWA                          | 13134                           | -                          | 2025/02/14            | 12                           |
| SAR       | 227155  | SP2 Manual Control Pendant               | Schmid&Partner Engineering AG   | D21144507 C                     | 22066839                   | -                     | -                            |
| SAR       | 146176  | Spectrum Analyzer                        | ADVANTEST                       | R3272                           | 101100994                  | -                     | -                            |
| SAR       | 144986  | Thermo-Hygrometer data logger            | SATO KERYOKI                    | SK-L200THlla/SK-LTHlla-2        | 015246/08169               | 2025/08/14            | 12                           |
| SAR       | 238557  | Thermo-Hygrometer data logger            | A&D Company                     | AD-5696                         | 990127766                  | 2025/08/14            | 12                           |

\*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

Test Item:

AT: Antenna terminal conducted test,

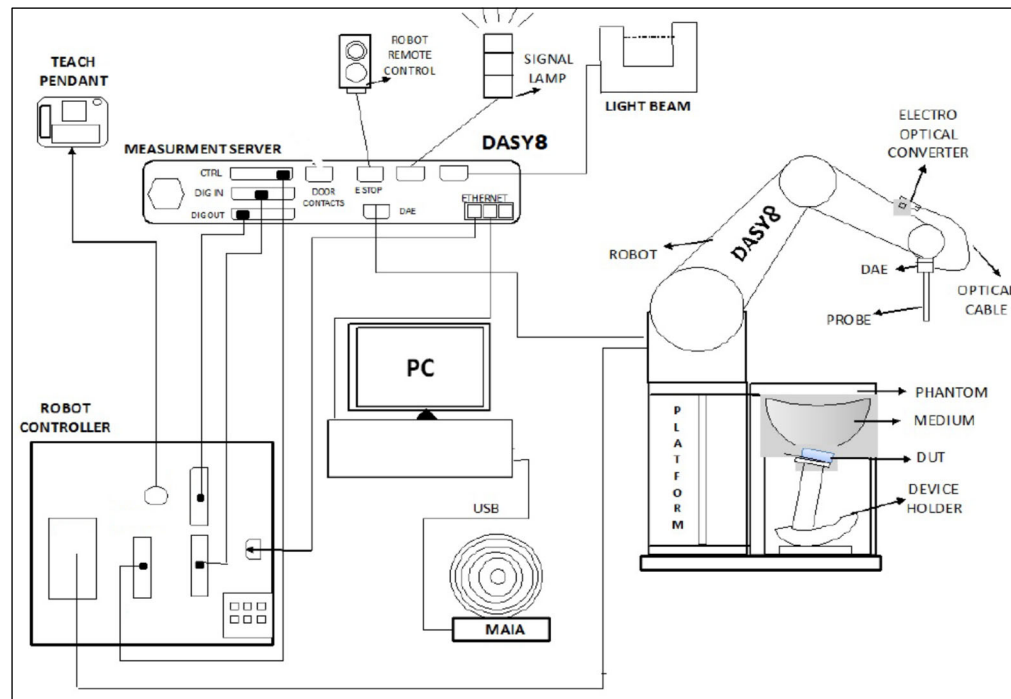
SAR: Specific Absorption Rate

\*LIMS ID: 255474, the parameters of primepure Ethanol (as reference liquid) used for the simulated tissue parameter confirmation was defined the NPL Report MAT23

## Appendix 3-2: Measurement System

### Appendix 3-2-1: SAR Measurement System

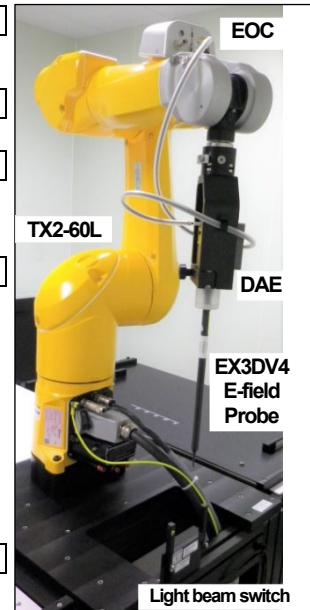
These measurements were performed with the automated near-field scanning system DASY8 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot, which positions the probes with a positional repeatability of better than  $\pm 0.03$  mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit. The SAR measurements were conducted with the dosimetry probes EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.



The DASY8 SAR/APD system for performing compliance tests consist of the following items:

- 6-axis robotic arm (Stäubli TX2-60L) for positioning the probe
- Mounting Platform for keeping the phantoms at a fixed location relative to the robot
- Measurement Server for handling all time-critical tasks, such as measurement data acquisition and supervision of safety features
- EOC (Electrical to Optical Converter) for converting the optical signal from the DAE to electrical before being transmitted to the measurement server
- LB (Light-Beam unit) for probe alignment (measurement of the exact probe length and eccentricity)
- SAR probe (EX3DV4 probes) for measuring the E-field distribution in the phantom. The SAR distribution and the psSAR (peak spatial averaged SAR) are derived from the E-field measurement.
- SAR phantom that represents a physical model with an equivalent human anatomy. A Specific Anthropomorphic Mannequin (SAM) head is usually used for handheld devices, and a Flat phantom is used for body-worn devices.
- TSL (Tissue Simulating Liquid) representing the dielectric properties of used tissue, e.g. Head Simulating Liquid, HSL.
- DAE (Data Acquisition Electronics) for reading the probe voltages and transmitting it to the DASY8 PC.
- Device Holder for positioning the DUT beneath the phantom.
- MAIA (Modulation and Interference Analyzer) for confirming the accuracy of the probe linearization parameters
- Operator PC for running the DASY8 software to define/execute the measurements
- System validation kits for system check/validation purposes.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Platforms</b><br>The platform is a multi-phantom support structure made of a wood and epoxy composite ( $\epsilon = 3.3$ and loss tangent $\delta < 0.07$ ). It is a strong and rigid structure transparent to electric and magnetic fields (nonmetallic components).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>TX2-60L robot, CS9 robot controller</b><br>•Number of Axes : 6 •Repeatability : $\pm 0.03$ mm •Manufacture : Stäubli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>DASY8 Measurement server</b><br>The DASY8 Measurement Server handles all time critical tasks such as acquisition of measurement data, detection of phantom surface, control of robot movements, supervision of safety features.<br>•Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Data Acquisition Electronic (DAE)</b><br>The DAE is used to acquire the probe sensor voltages and transfer them to the DASY8 Measurement Server, and to report mechanical surface detection and probe collisions. The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, and a command decoder with a control logic unit. Transmission to the DASY8 Measurement Server is accomplished through an optical downlink for data and status information and an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts used for mechanical surface detection and probe collision detection.<br>•Measurement Range : 1 $\mu$ V to > 200 mV (2 range settings: 4 mV (low), 400 mV (high))<br>•Input Offset voltage : < 1 $\mu$ V (with auto zero) •Input Resistance : 200 M $\Omega$<br>•Battery operation : > 10 hrs. (with two rechargeable 9 V battery)<br>•Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Electro-Optical Converter (EOC8-TX2-60L)</b><br>The Electrical to Optical Converter (EOC8) supports as data exchange between the DAE and the measurement server (optical connector) and data acquisition based on Ethernet protocol.<br>•Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Light Beam Switch</b><br>The light beam unit allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm, as well as the probe length and the horizontal probe offset, are measured. The software then corrects all movements within the measurement jobs, such that the robot coordinates are valid for the probe tip. The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.<br>•Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>SAR measurement software</b><br>•Software version : Refer to Appendix 3-1 (Equipment used) •Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>E-Field Probe</b><br>•Model : EX3DV4 •Frequency: 4 MHz to 10 GHz, Linearity: $\pm 0.2$ dB (30 MHz to 10 GHz)<br>•Construction : Symmetrical design with triangular core, Built-in shielding against static charges, PEEK enclosure material (resistant to organic solvents, e.g., DGBE).<br>•CF : Refer to calibration data of Appendix. (CF: Conversion Factors)<br>•Directivity : $\pm 0.1$ dB in TSL (rotation around probe axis) / $\pm 0.3$ dB in TSL (rotation normal to probe axis)<br>•Dynamic Range : 10 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)<br>•Dimension : Overall length: 330 mm (Tip: 20 mm) / Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1mm<br>•Application : High precision dosimetric measurement in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30 %.<br>•Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>ELI Phantom</b><br>The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 standard and all known tissue simulating liquids.<br>ELI V8.0 phantom shell has optimized pretension in the bottom surface during production, such that the phantom is more robust and with reduced sagging.<br>•Model Number : ELI V8.0 flat phantom •Shell Material : Vinyl ester, fiberglass reinforced (VE-GF)<br>•Shell Thickness : $2.0 \pm 0.2$ mm (bottom plate) •Dimensions : 600 mm $\times$ 400 mm (oval) (volume: Approx. 30 liters)<br>•Manufacture : Schmid & Partner Engineering AG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Device Holder, Laptop holder, support material</b><br>Accurate device positioning is crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards. The device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles. The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon=3$ and loss tangent $\delta=0.02$ . The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.<br><input checked="" type="checkbox"/> Device holder: In combination with the ELI phantom, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Transmitter devices can be easily and accurately positioned. The low-loss dielectric urethane foam was used for the mounting section of device holder.<br>•Material : Polyoxymethylene (POM) •Manufacture: Schmid & Partner Engineering AG<br><input type="checkbox"/> Laptop holder: A simple but effective and easy-to-use extension for the Mounting Device; facilitates testing of larger devices (e.g., laptops, cameras, etc.) according to IEC/IEEE 62209-1528.<br>•Material : Polyoxymethylene (POM), PET-G, Foam •Manufacture: Schmid & Partner Engineering AG<br><input checked="" type="checkbox"/> Support form: Urethane foam |



#### Data storage and evaluation (post processing)

The uplink signal transmitted by the DUT is measured inside the TSL by the probe, which is accurately positioned at a precisely known distance and with a normal orientation with respect to the phantom surface. The dipole / loop sensors at the probe tips pick up the signal and generate a voltage, which is measured by the voltmeter inside the DAE. The DAE returns digital values, which are converted to an optical signal and transmitted via the EOC to the measurement server. The data is finally transferred to the DASY8 software for further post processing. In addition, the DASY8 software periodically requests a measurement with short-circuited inputs from the DAE to compensate the amplifier offset and drift. This procedure is called DAE zeroing.

The operator has access to the following low level measurement settings:

- the integration time is the voltage acquisition time at each measurement point. It is typically 0.5 s.
- the zeroing period indicates how often the DAE zeroing is performed.

In parallel, the MAIA measures the characteristics of the uplink signal via the air interface and sends this information to the DASY8 software, which compares them to the communication system defined by the operator. A warning is issued if any difference is detected.

The measurement data is now acquired and can be post processed to compute the psSAR1g /8g /10g.

The measured voltages are not directly proportional to SAR and must be linearized. The formulas below are based on [1] (\*1).

The measured voltage is first linearized using the (a, b, c, d) set of parameters specific to the communication system and sensor:

$$V_{comp i} = U_i + U_i^2 \cdot \frac{10^{\frac{d}{10}}}{d_{cp i}}$$

|                   |                                             |                              |
|-------------------|---------------------------------------------|------------------------------|
| with $V_{comp i}$ | = compensated voltage of channel i (μV)     | (i = x,y,z)                  |
| $U_i$             | = input voltage of channel i (μV)           | (i = x,y,z)                  |
| $d$               | = PMR factor d (dB)                         | (Probe parameter)            |
| $d_{cp i}$        | = diode compression point of channel i (μV) | (Probe parameter, i = x,y,z) |

$$V_{comp i \text{ dB}\sqrt{\mu V}} = 10 \cdot \log_{10}(V_{comp i})$$

$$corr_i = a_i \cdot e^{-\left(\frac{b_i - 10 \log_{10}(V_{comp i})}{c_i}\right)^2}$$

|                                     |                                            |                              |
|-------------------------------------|--------------------------------------------|------------------------------|
| with $corr_i$                       | = correction factor of channel i (dB)      | (i = x,y,z)                  |
| $V_{comp i \text{ dB}\sqrt{\mu V}}$ | = compensated voltage of channel i (dB√μV) | (i = x,y,z)                  |
| $a_i$                               | = PMR factor a of channel i (dB)           | (Probe parameter, i = x,y,z) |
| $b_i$                               | = PMR factor b of channel i (dB√μV)        | (Probe parameter, i = x,y,z) |
| $c_i$                               | = PMR factor c of channel i (-)            | (Probe parameter, i = x,y,z) |

The voltage  $V_{i \text{ dB}\sqrt{\mu V}}$  is the linearized voltage in dB√μV:

$$V_{i \text{ dB}\sqrt{\mu V}} = V_{comp i \text{ dB}\sqrt{\mu V}} - corr_i$$

|                                     |                                            |             |
|-------------------------------------|--------------------------------------------|-------------|
| with $V_{i \text{ dB}\sqrt{\mu V}}$ | = linearized voltage of channel i (dB√μV)  | (i = x,y,z) |
| $V_{comp i \text{ dB}\sqrt{\mu V}}$ | = compensated voltage of channel i (dB√μV) | (i = x,y,z) |
| $corr_i$                            | = PMR factor a of channel i (dB)           | (i = x,y,z) |

Finally, the linearized voltage is converted in μV :

$$V_i = 10^{\frac{V_{i \text{ dB}\sqrt{\mu V}}}{10}}$$

|                                     |                                           |             |
|-------------------------------------|-------------------------------------------|-------------|
| with $V_i$                          | = linearized voltage of channel i (μV)    | (i = x,y,z) |
| $V_{comp i \text{ dB}\sqrt{\mu V}}$ | = linearized voltage of channel i (dB√μV) | (i = x,y,z) |

The Field data for each channel are calculated using the linearized voltage:

$$\text{E-field probes: } E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

|            |                                                                               |             |
|------------|-------------------------------------------------------------------------------|-------------|
| with $V_i$ | = linearized voltage of channel i in μV                                       | (i = x,y,z) |
| $Norm_i$   | = sensor sensitivity of channel i in μV/(V/m) <sup>2</sup> for E-field Probes | (i = x,y,z) |
| $ConvF$    | = sensitivity enhancement in solution                                         |             |
| $E_i$      | = electric field strength of channel i in V/m                                 | (i = x,y,z) |

The RMS value of the field components gives the total field strength (Hermitian magnitude) :

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The E-field data value is used to calculate SAR :

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

|            |                                                  |
|------------|--------------------------------------------------|
| with $SAR$ | = local specific absorption rate in mW/g         |
| $E_{tot}$  | = total field strength in V/m                    |
| $\sigma$   | = conductivity in [Ω/m] or [S/m]                 |
| $\rho$     | = equivalent tissue density in g/cm <sup>3</sup> |

Note: The resulting linearized voltage is only approximated because the probe UID is used 0 (CW) for the test signal in this test report.

(\*1) [1] Jagadish Nadakuduti, Sven Kuehn, Marcel Fehr, Mark Douglas Katja Pokovic and Niels Kuster, "The Effect of Diode Response of electromagnetic Field Probes for the Measurements of Complex Signals." IEEE Transactions on Electromagnetic Compatibility, vol. 54, pp. 1195–1204, Dec. 2012.

### Appendix 3-2-2: SAR system check results

\*. Prior to the SAR assessment of EUT, the Daily check was performed to test whether the SAR system was operating within its target of  $\pm 10\%$ . The Daily check results are in the table below.

| Liquid type: Head |       | Liq.  | ΔSAR |      | P.in  | SAR (1g) [W/kg] (*b) |      |             |      |         |      |      | SAR (10g) [W/kg] (*b) |      |             |      |         |      |      | Dev.  |
|-------------------|-------|-------|------|------|-------|----------------------|------|-------------|------|---------|------|------|-----------------------|------|-------------|------|---------|------|------|-------|
| Date              | Freq. | Meas. | 1g   | 10g  |       | Meas.                | 1W   | Target (*c) |      | Dev.[%] |      | Pass | Meas.                 | 1W   | Target (*c) |      | Dev.[%] |      | Pass | limit |
|                   | [MHz] | date  | [%]  | [%]  |       | [dBm]                | (*a) | scaled      | CAL. | STD     | CAL. | STD  | ?                     | (*a) | scaled      | CAL. | STD     | Cal. | STD  | ?     |
| 2025-10-21        | 2450  | 10-21 | -0.3 | -0.3 | 16.98 | 2.54                 | 51.1 | 51.4        | 52.4 | -0.6    | -2.5 | Pass | 1.2                   | 24.1 | 24.1        | 24   | 0.0     | 0.4  | Pass | ±10   |

\*. Freq.: Frequency, Meas.: Measurement, CAL.: Value of Calibration, STD: Value of Standard, Dev. Deviation.

\*a. The Measured SAR/ value is obtained at 17 dBm (50 mW).

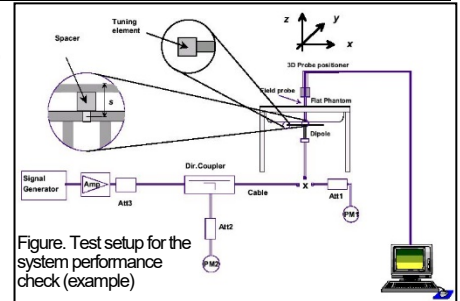
\*b. The measured SAR value of Daily check was compensated for tissue dielectric deviations ( $\Delta$ SAR) and scaled to 1W of output power in order to compare with the manufacture's calibration target value which was normalized.

$$\Delta\text{SAR corrected SAR (1g) (W/kg)} = (\text{Measured SAR(1g) (W/kg)}) \times (100 - (\Delta\text{SAR1g}(\%))) / 100$$

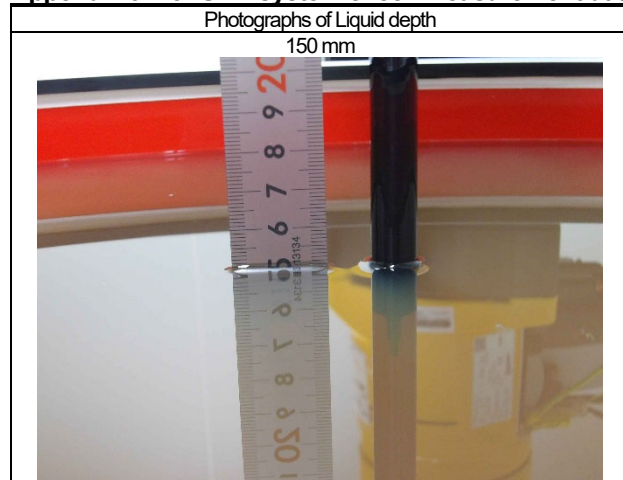
$$\Delta\text{SAR corrected SAR (10g,8g) (W/kg)} = (\text{Measured SAR(10g,8g) (W/kg)}) \times (100 - (\Delta\text{SAR10g}(\%))) / 100$$

\*c. The "CAL." target value is a parameter defined in the calibration data.

The "STD" target value (normalized to 1W) is defined in IEEE Std.1528.



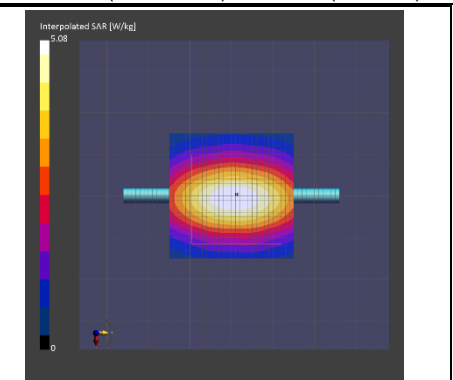
### Appendix 3-2-3: SAR system check measurement data



Dipole: D2450V2 - SN822 ; Mode: CW(0) ; Frequency: 2450.000 MHz ; Test Distance: 10 mm (dipole to liquid); Power setting: 17.0 dBm  
TSL parameters used: Head(v6) ; F= 2450.000 MHz; Conductivity: 1.83 S/m; Permittivity: 41.1

DASY8 Configuration: - Electronics: DAE4 - SN626(Calibrated:2025-01-13)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161. ; Phantom section: Flat  
- Probe: EX3DV4 - SN3745(Calibrated: 2025-04-15); ConvF: (6.59, 6.22, 6.49) @ 2450.000 MHz/ - Software: 16.4.0.5005 (Measurement); 16.4.0.5005 (Evaluation)

| Scan Setup           |           |           |                | Measurement Results                           |               |               |
|----------------------|-----------|-----------|----------------|-----------------------------------------------|---------------|---------------|
| Setup Items          | Fast      | Area      | Zoom           | Meas. Items                                   | Area          | Zoom          |
| Grid Extents [mm]    | 40.0x80.0 | 40.0x80.0 | 30.0x30.0x30.0 | psSAR1g [W/kg]                                | 2.57          | <b>2.54</b>   |
| Grid Steps [mm]      | 10.0x10.0 | 10.0x10.0 | 5.0x5.0x1.5    | psSAR10g [W/kg]                               | 1.19          | <b>1.20</b>   |
| Sensor Distance [mm] | 4.0       | 3.0       | 1.4            | Power Drift [dB]                              | 0.01          | -0.02         |
| Graded Grid          | N/A       | N/A       | Yes            | pSAR (extrapolated) [W/kg]                    | N/A           | 5.08          |
| Grading Ratio        | N/A       | N/A       | 1.5            | Power Scaling                                 | Disabled      | Disabled      |
| MAIA monitored       | N/A       | Y         | Y              | TSL Correction                                | No correction | No correction |
| Surface Deletion     | VMS + 6p  | VMS + 6p  | VMS + 6p       | M2/M1 [%]                                     | N/A           | 81.6          |
| Scan Method          | Measured  | Measured  | Measured       | Dist 3dB Peak [mm]                            | N/A           | 9.0           |
| Grid Effective [mm]  | N/A       | 40.0x80.0 | 30.0x30.0x31.2 | psSAR8g [W/kg]                                | 1.32          | 1.32          |
|                      |           |           |                | PD 1 cm <sup>2</sup> -sq. [W/m <sup>2</sup> ] | N/A           | N/A           |
|                      |           |           |                | PD 4 cm <sup>2</sup> -sq. [W/m <sup>2</sup> ] | N/A           | N/A           |



Remarks: \*. Order No.: \*. Date tested:2025-10-21 ; Tested by: A. Oda; Tested location: UL Japan, Shonan EMC Lab. No.7 shielded room  
\*. Liquid temperature: 22.5 deg.C.  $\pm$  0.5 deg.C. (22.4 deg.C., in check); Ambient: (22~24) deg.C. / (50~70) %RH; \*. Red cubic: big=SAR(10g) / small=SAR(1g)  
\*. Project file name-Measurement Group: 251021.yamaha.15786304.d8sar- SPC Measurement Group

### Appendix 3-3: Measurement Uncertainty

| Uncertainty in the measured value of 1 g or 10 g psSAR from a DUT(2.4 GHz to 6 GHz) |                                           |             |      |      |             |              |                |                 |  |
|-------------------------------------------------------------------------------------|-------------------------------------------|-------------|------|------|-------------|--------------|----------------|-----------------|--|
| Symbol                                                                              | Input quantity<br>(source of uncertainty) | Unc.<br>[%] | Dist | Div  | ci<br>(1 g) | ci<br>(10 g) | ui(1 g)<br>[%] | ui(10 g)<br>[%] |  |
| Measurement System Errors                                                           |                                           |             |      |      |             |              |                |                 |  |
| CF                                                                                  | Probe Calibration                         | ± 13.1      | N    | 2    | 1           | 1            | ± 6.55         | ± 6.55          |  |
| CFdrift                                                                             | Probe Calibration Drift                   | ± 1.7       | R    | 1.73 | 1           | 1            | ± 0.98         | ± 0.98          |  |
| LIN                                                                                 | Probe Linearity                           | ± 4.7       | R    | 1.73 | 1           | 1            | ± 2.71         | ± 2.71          |  |
| BBS                                                                                 | Broadband Signal                          | ± 2.6       | R    | 1.73 | 1           | 1            | ± 1.50         | ± 1.50          |  |
| ISO                                                                                 | Probe Isotropy                            | ± 7.6       | R    | 1.73 | 1           | 1            | ± 4.39         | ± 4.39          |  |
| DAE                                                                                 | Other Probe+Electronic                    | ± 1.2       | N    | 1    | 1           | 1            | ± 1.20         | ± 1.20          |  |
| AMB                                                                                 | RF Ambient                                | ± 1.8       | N    | 1    | 1           | 1            | ± 1.80         | ± 1.80          |  |
| Asys                                                                                | Probe Positioning                         | ± 0.5       | N    | 1    | 0.34        | 0.34         | ± 0.18         | ± 0.18          |  |
| DAT                                                                                 | Data Processing                           | ± 2.3       | N    | 1    | 1           | 1            | ± 2.31         | ± 2.31          |  |
| Phantom and Device Errors                                                           |                                           |             |      |      |             |              |                |                 |  |
| LIQ(σ)                                                                              | Conductivity (meas.)                      | ± 2.5       | N    | 1    | 0.78        | 0.71         | ± 1.95         | ± 1.78          |  |
| LIQ(Tσ)                                                                             | Conductivity (temp.)                      | ± 1.6       | R    | 1.73 | 0.78        | 0.71         | ± 0.72         | ± 0.66          |  |
| EPS                                                                                 | Phantom Permittivity                      | ± 14.0      | R    | 1.73 | 0.25        | 0.25         | ± 2.02         | ± 2.02          |  |
| DIS                                                                                 | Distance DUT – TSL                        | ± 2.0       | N    | 1    | 2           | 2            | ± 3.98         | ± 3.98          |  |
| Dxyz                                                                                | Device Positioning                        | ± 1.0       | N    | 1    | 1           | 1            | ± 1.00         | ± 1.00          |  |
| H                                                                                   | Device Holder                             | ± 3.6       | N    | 1    | 1           | 1            | ± 3.60         | ± 3.60          |  |
| MOD                                                                                 | DUT Modulationm                           | ± 2.4       | R    | 1.73 | 1           | 1            | ± 1.39         | ± 1.39          |  |
| TAS                                                                                 | Time-average SAR                          | ± 0.0       | R    | 1.73 | 1           | 1            | ± 0.00         | ± 0.00          |  |
| RFdrift                                                                             | DUT drift                                 | ± 4.7       | N    | 2    | 1           | 1            | ± 2.35         | ± 2.35          |  |
| VAL                                                                                 | Val Antenna Unc.val                       | ± 0.0       | N    | 1    | 1           | 1            | ± 0.00         | ± 0.00          |  |
| RFin                                                                                | Unc. Input Power val                      | ± 0.0       | R    | 1.73 | 1           | 1            | ± 0.00         | ± 0.00          |  |
| Correction to the SAR results                                                       |                                           |             |      |      |             |              |                |                 |  |
| C(ε, σ)                                                                             | Deviation to Target                       | ± 1.9       | N    | 1    | 1           | 0.84         | ± 1.90         | ± 1.60          |  |
| C(R)                                                                                | SAR scaling                               | ± 0.0       | R    | 1.73 | 1           | 1.0          | ± 0.00         | ± 0.00          |  |
| u(SAR)                                                                              | Combined Uncertainty                      |             |      |      |             |              | ± 11.5         | ± 11.4          |  |
| U                                                                                   | Expanded Uncertainty                      |             |      |      |             |              | ± 23.0         | ± 22.8          |  |
| Uncertainty in the system check value of 1 g or 10 g psSAR(2.4 GHz to 6 GHz)        |                                           |             |      |      |             |              |                |                 |  |
| Symbol                                                                              | Input quantity<br>(source of uncertainty) | Unc.<br>[%] | Dist | Div  | ci<br>(1 g) | ci<br>(10 g) | ui(1 g)<br>[%] | ui(10 g)<br>[%] |  |
| Measurement System Errors                                                           |                                           |             |      |      |             |              |                |                 |  |
| CF                                                                                  | Probe Calibration                         | ± 13.1      | N    | 2    | 1           | 1            | ± 6.55         | ± 6.55          |  |
| CFdrift                                                                             | Probe Calibration Drift                   | ± 1.7       | R    | 1.73 | 1           | 1            | ± 0.98         | ± 0.98          |  |
| LIN                                                                                 | Probe Linearity                           | ± 4.7       | R    | 1.73 | 1           | 1            | ± 2.71         | ± 2.71          |  |
| BBS                                                                                 | Broadband Signal                          | ± 0.0       | R    | 1.73 | 1           | 1            | ± 0.00         | ± 0.00          |  |
| ISO                                                                                 | Probe Isotropy                            | ± 4.7       | R    | 1.73 | 1           | 1            | ± 2.71         | ± 2.71          |  |
| DAE                                                                                 | Other Probe+Electronic                    | ± 1.2       | N    | 1    | 1           | 1            | ± 1.20         | ± 1.20          |  |
| AMB                                                                                 | RF Ambient                                | ± 1.8       | N    | 1    | 1           | 1            | ± 1.80         | ± 1.80          |  |
| Asys                                                                                | Probe Positioning                         | ± 0.5       | N    | 1    | 0.34        | 0.34         | ± 0.18         | ± 0.18          |  |
| DAT                                                                                 | Data Processing                           | ± 0.6       | N    | 1    | 1           | 1            | ± 0.58         | ± 0.58          |  |
| Phantom and Device Errors                                                           |                                           |             |      |      |             |              |                |                 |  |
| LIQ(σ)                                                                              | Conductivity (meas.)                      | ± 2.5       | N    | 1    | 0.78        | 0.71         | ± 1.95         | ± 1.78          |  |
| LIQ(Tσ)                                                                             | Conductivity (temp.)                      | ± 1.6       | R    | 1.73 | 0.78        | 0.71         | ± 0.72         | ± 0.66          |  |
| EPS                                                                                 | Phantom Permittivity                      | ± 14.0      | R    | 1.73 | 0.25        | 0.25         | ± 2.02         | ± 2.02          |  |
| DIS                                                                                 | Distance DUT – TSL                        | ± 2.0       | N    | 1    | 2           | 2            | ± 4.08         | ± 4.08          |  |
| Dxyz                                                                                | Device Positioning                        | ± 0.0       | N    | 1    | 0           | 0            | ± 0.00         | ± 0.00          |  |
| H                                                                                   | Device Holder                             | ± 0.0       | N    | 1    | 1           | 1            | ± 0.00         | ± 0.00          |  |
| MOD                                                                                 | DUT Modulationm                           | ± 0.0       | R    | 1.73 | 1           | 1            | ± 0.00         | ± 0.00          |  |
| TAS                                                                                 | Time-average SAR                          | ± 0.0       | R    | 1.73 | 1           | 1            | ± 0.00         | ± 0.00          |  |
| RFdrift                                                                             | DUT drift                                 | ± 2.5       | N    | 2    | 1           | 1            | ± 1.25         | ± 1.25          |  |
| VAL                                                                                 | Val Antenna Unc.val                       | ± 3.2       | N    | 1    | 1           | 1            | ± 3.20         | ± 3.20          |  |
| RFin                                                                                | Unc. Input Power val                      | ± 2.3       | R    | 1.73 | 1           | 1            | ± 1.34         | ± 1.34          |  |
| Correction to the SAR results                                                       |                                           |             |      |      |             |              |                |                 |  |
| C(ε, σ)                                                                             | Deviation to Target                       | ± 1.9       | N    | 1    | 1           | 0.84         | ± 1.90         | ± 1.60          |  |
| C(R)                                                                                | SAR scaling                               | ± 0.0       | R    | 1.73 | 1           | 1            | ± 0.00         | ± 0.00          |  |
| u(SAR)                                                                              | Combined Uncertainty                      |             |      |      |             |              | ± 10.3         | ± 10.2          |  |
| U                                                                                   | Expanded Uncertainty                      |             |      |      |             |              | ± 20.6         | ± 20.4          |  |

\*. This uncertainty budget is suggested by IEC/IEEE 62209-1528 and determined by SPEAG, DASY8 Module SAR Manual.

\*. Table of uncertainties are listed for ISO/IEC 17025.

\*. Although this standard determines only the limit value of uncertainty, there is no applicable rule of uncertainty in this. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

### Appendix 3-4: Calibration certificates

| LIMS ID | Description              | Type/Model | Serial Number | Manufacture |
|---------|--------------------------|------------|---------------|-------------|
| 226380  | Dosimetric E-Field Probe | EX3DV4     | 3745          | SPEAG       |

**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

Client **MWF**  
Yokohama, Japan

Certificate No. **EX-3745\_Apr25**

### CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3745**

Calibration procedure(s) **QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6,  
QA CAL-25.v8  
Calibration procedure for dosimetric E-field probes**

Calibration date **April 15, 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 ± 3) °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 NRP-33T             | SN: 100967 | 26-Mar-25 (No. 217-04290)                        | Mar-26       |
| Short [S6019I] + Attenuator [S6020I] | SN: L1119  | 26-Mar-25 (No. 217-04292)                        | Mar-26       |
| 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       |
| DAE4                                 | SN: 1301   | 07-Nov-24 (No. DAE4-1301_Nov24)                  | Nov-25       |
| Secondary Standards                  | ID         | Check Date (in house)                            | Sched. Check |
| ACAP 2020 Calibration Setup          | SN: L1404  | 30-Sept-24 (No. Report_ACAP2020E-Cave_20240930s) | Sep-25       |

|               |                           |                                   |               |
|---------------|---------------------------|-----------------------------------|---------------|
| Calibrated by | Name<br>Krešimir Franjčić | Function<br>Laboratory Technician | Signature<br> |
| Approved by   | Sven Kühn                 | Technical Manager                 |               |

Issued: April 15, 2025

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

Certificate No: EX-3745\_Apr25

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## Calibration Laboratory of

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## Glossary

|                        |                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                    | tissue simulating liquid                                                                                                                       |
| NORM <sub>x,y,z</sub>  | sensitivity in free space                                                                                                                      |
| ConvF                  | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                     |
| DCP                    | diode compression point                                                                                                                        |
| CF                     | crest factor (1/duty_cycle) of the RF signal                                                                                                   |
| A, B, C, D             | modulation dependent linearization parameters                                                                                                  |
| Polarization $\varphi$ | $\varphi$ rotation around probe axis                                                                                                           |
| Polarization $\theta$  | $\theta$ 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<sub>x,y,z</sub>**: Assessed for E-field polarization  $\theta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* 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<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal. DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. 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<sub>x,y,z</sub> \* 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  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

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## Parameters of Probe: EX3DV4 - SN:3745

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k = 2)  |
|-----------------------------------------------------------|----------|----------|----------|--------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 0.48     | 0.44     | 0.49     | $\pm 10.1\%$ |
| DCP (mV) <sup>B</sup>                                     | 101.3    | 102.7    | 101.2    | $\pm 4.7\%$  |

### Calibration Results for Modulation Response

| UID   | Communication System Name   |   | A<br>dB | B<br>dB $\sqrt{\mu\text{V}}$ | C     | D<br>dB | VR<br>mV | Max<br>dev. | Max<br>Unc <sup>E</sup><br>k = 2 |
|-------|-----------------------------|---|---------|------------------------------|-------|---------|----------|-------------|----------------------------------|
| 0     | CW                          | X | 0.00    | 0.00                         | 1.00  | 0.00    | 127.1    | $\pm 0.9\%$ | $\pm 4.7\%$                      |
|       |                             | Y | 0.00    | 0.00                         | 1.00  |         | 141.6    |             |                                  |
|       |                             | Z | 0.00    | 0.00                         | 1.00  |         | 127.2    |             |                                  |
| 10352 | Pulse Waveform (200Hz, 10%) | X | 20.00   | 93.32                        | 23.10 | 10.00   | 60.0     | $\pm 2.6\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 93.53                        | 22.42 |         | 60.0     |             |                                  |
|       |                             | Z | 20.00   | 94.17                        | 24.70 |         | 60.0     |             |                                  |
| 10353 | Pulse Waveform (200Hz, 20%) | X | 20.00   | 93.02                        | 21.72 | 6.99    | 80.0     | $\pm 1.0\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 94.85                        | 22.17 |         | 80.0     |             |                                  |
|       |                             | Z | 20.00   | 94.23                        | 23.34 |         | 80.0     |             |                                  |
| 10354 | Pulse Waveform (200Hz, 40%) | X | 20.00   | 94.43                        | 20.94 | 3.98    | 95.0     | $\pm 1.3\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 99.66                        | 23.31 |         | 95.0     |             |                                  |
|       |                             | Z | 20.00   | 95.94                        | 22.53 |         | 95.0     |             |                                  |
| 10355 | Pulse Waveform (200Hz, 60%) | X | 20.00   | 97.50                        | 21.11 | 2.22    | 120.0    | $\pm 1.3\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 107.06                       | 25.55 |         | 120.0    |             |                                  |
|       |                             | Z | 20.00   | 99.22                        | 22.65 |         | 120.0    |             |                                  |
| 10387 | QPSK Waveform, 1 MHz        | X | 1.74    | 64.90                        | 14.59 | 1.00    | 150.0    | $\pm 1.8\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 1.74    | 66.38                        | 15.24 |         | 150.0    |             |                                  |
|       |                             | Z | 1.84    | 64.92                        | 14.79 |         | 150.0    |             |                                  |
| 10388 | QPSK Waveform, 10 MHz       | X | 2.25    | 67.26                        | 15.15 | 0.00    | 150.0    | $\pm 1.1\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 2.30    | 68.33                        | 15.92 |         | 150.0    |             |                                  |
|       |                             | Z | 2.35    | 67.62                        | 15.31 |         | 150.0    |             |                                  |
| 10396 | 64-QAM Waveform, 100 kHz    | X | 3.18    | 69.85                        | 18.15 | 3.01    | 150.0    | $\pm 0.7\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 3.11    | 71.45                        | 19.21 |         | 150.0    |             |                                  |
|       |                             | Z | 3.46    | 70.13                        | 18.34 |         | 150.0    |             |                                  |
| 10399 | 64-QAM Waveform, 40 MHz     | X | 3.57    | 66.99                        | 15.56 | 0.00    | 150.0    | $\pm 0.9\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 3.58    | 67.43                        | 15.91 |         | 150.0    |             |                                  |
|       |                             | Z | 3.64    | 67.14                        | 15.65 |         | 150.0    |             |                                  |
| 10414 | WLAN CCDF, 64-QAM, 40 MHz   | X | 4.84    | 64.98                        | 15.08 | 0.00    | 150.0    | $\pm 1.8\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 4.77    | 65.29                        | 15.31 |         | 150.0    |             |                                  |
|       |                             | Z | 4.95    | 65.07                        | 15.14 |         | 150.0    |             |                                  |

Note: For details on UID parameters see Appendix

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

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 to 8).

<sup>B</sup> Linearization parameter uncertainty for maximum specified field strength.

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

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## Parameters of Probe: EX3DV4 - SN:3745

### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>V <sup>-1</sup> | T1<br>msV <sup>-2</sup> | T2<br>msV <sup>-1</sup> | T3<br>ms | T4<br>V <sup>-2</sup> | T5<br>V <sup>-1</sup> | T6   |
|---|----------|----------|-----------------------------|-------------------------|-------------------------|----------|-----------------------|-----------------------|------|
| x | 60.4     | 444.70   | 34.62                       | 21.88                   | 0.84                    | 5.06     | 0.64                  | 0.50                  | 1.01 |
| y | 46.6     | 339.86   | 34.17                       | 21.20                   | 0.07                    | 5.10     | 1.37                  | 0.22                  | 1.01 |
| z | 71.6     | 531.33   | 35.11                       | 26.89                   | 1.40                    | 5.09     | 0.01                  | 0.74                  | 1.01 |

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle                               | 55.1°      |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 9 mm       |
| Tip Diameter                                  | 2.5 mm     |
| Probe Tip to Sensor X Calibration Point       | 1 mm       |
| Probe Tip to Sensor Y Calibration Point       | 1 mm       |
| Probe Tip to Sensor Z Calibration Point       | 1 mm       |
| Recommended Measurement Distance from Surface | 1.4 mm     |

**Note:** Measurement distance from surface can be increased to 3–4 mm for an Area Scan job.

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## Parameters of Probe: EX3DV4 - SN:3745

### Calibration Parameter Determined in HSL

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity <sup>F</sup> (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc <sup>H</sup> (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|--------------------------|
| 13                   | 55.0                               | 0.75                            | 14.87   | 12.88   | 14.89   | 0.00               | 1.25                    | ±13.3%                   |
| 300                  | 45.3                               | 0.87                            | 10.52   | 10.52   | 10.52   | 0.09               | 1.00                    | ±13.3%                   |
| 450                  | 43.5                               | 0.87                            | 9.54    | 9.54    | 9.54    | 0.16               | 1.30                    | ±13.3%                   |
| 600                  | 42.7                               | 0.88                            | 9.38    | 9.38    | 9.38    | 0.10               | 1.25                    | ±13.3%                   |
| 750                  | 41.9                               | 0.89                            | 8.85    | 8.36    | 8.71    | 0.35               | 1.27                    | ±11.0%                   |
| 835                  | 41.5                               | 0.90                            | 8.51    | 8.04    | 8.38    | 0.35               | 1.27                    | ±11.0%                   |
| 900                  | 41.5                               | 0.97                            | 8.27    | 7.81    | 8.14    | 0.35               | 1.27                    | ±11.0%                   |
| 1450                 | 40.5                               | 1.20                            | 7.60    | 7.18    | 7.48    | 0.35               | 1.27                    | ±11.0%                   |
| 1640                 | 40.2                               | 1.31                            | 7.37    | 6.97    | 7.26    | 0.35               | 1.27                    | ±11.0%                   |
| 1750                 | 40.1                               | 1.37                            | 7.28    | 6.88    | 7.17    | 0.35               | 1.27                    | ±11.0%                   |
| 1900                 | 40.0                               | 1.40                            | 7.14    | 6.75    | 7.03    | 0.35               | 1.27                    | ±11.0%                   |
| 1950                 | 40.0                               | 1.40                            | 7.11    | 6.71    | 7.00    | 0.35               | 1.27                    | ±11.0%                   |
| 2300                 | 39.5                               | 1.67                            | 6.69    | 6.32    | 6.59    | 0.35               | 1.27                    | ±11.0%                   |
| 2450                 | 39.2                               | 1.80                            | 6.59    | 6.22    | 6.49    | 0.35               | 1.27                    | ±11.0%                   |
| 2600                 | 39.0                               | 1.96                            | 6.47    | 6.11    | 6.36    | 0.35               | 1.27                    | ±11.0%                   |
| 3300                 | 38.2                               | 2.71                            | 6.31    | 5.96    | 6.21    | 0.35               | 1.27                    | ±13.1%                   |
| 3500                 | 37.9                               | 2.91                            | 6.26    | 5.91    | 6.16    | 0.35               | 1.27                    | ±13.1%                   |
| 3700                 | 37.7                               | 3.12                            | 6.20    | 5.86    | 6.11    | 0.35               | 1.27                    | ±13.1%                   |
| 3900                 | 37.5                               | 3.32                            | 6.18    | 5.84    | 6.08    | 0.36               | 1.27                    | ±13.1%                   |
| 4100                 | 37.2                               | 3.53                            | 6.15    | 5.81    | 6.05    | 0.36               | 1.27                    | ±13.1%                   |
| 4600                 | 36.7                               | 4.04                            | 5.88    | 5.55    | 5.79    | 0.36               | 1.27                    | ±13.1%                   |
| 4800                 | 36.4                               | 4.25                            | 5.83    | 5.51    | 5.74    | 0.36               | 1.27                    | ±13.1%                   |
| 4950                 | 36.3                               | 4.40                            | 5.69    | 5.37    | 5.60    | 0.34               | 1.27                    | ±13.1%                   |
| 5200                 | 36.0                               | 4.66                            | 5.34    | 5.05    | 5.26    | 0.32               | 1.27                    | ±13.1%                   |
| 5250                 | 35.9                               | 4.71                            | 5.16    | 4.88    | 5.08    | 0.32               | 1.27                    | ±13.1%                   |
| 5300                 | 35.9                               | 4.76                            | 5.01    | 4.73    | 4.93    | 0.31               | 1.27                    | ±13.1%                   |
| 5500                 | 35.6                               | 4.96                            | 4.83    | 4.56    | 4.76    | 0.29               | 1.27                    | ±13.1%                   |
| 5600                 | 35.5                               | 5.07                            | 4.88    | 4.61    | 4.81    | 0.28               | 1.27                    | ±13.1%                   |

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

<sup>F</sup> The probes are calibrated using tissue simulating liquids (TSL) that deviate for  $\epsilon$  and  $\sigma$  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.

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

<sup>H</sup> 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:3745

### Calibration Parameter Determined in HSL

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity <sup>F</sup> (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc <sup>H</sup> (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|--------------------------|
| 5750                 | 35.4                               | 5.22                            | 4.78    | 4.51    | 4.70    | 0.27               | 1.27                    | ±13.1%                   |
| 5800                 | 35.3                               | 5.27                            | 4.83    | 4.56    | 4.75    | 0.26               | 1.27                    | ±13.1%                   |
| 5850                 | 35.2                               | 5.32                            | 4.87    | 4.60    | 4.79    | 0.26               | 1.27                    | ±13.1%                   |

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

<sup>F</sup> The probes are calibrated using tissue simulating liquids (TSL) that deviate for  $\epsilon$  and  $\sigma$  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.

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

<sup>H</sup> 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:3745

### Calibration Parameter Determined in MSL

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity <sup>F</sup> (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc <sup>H</sup> (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|--------------------------|
| 2450                 | 52.7                               | 1.95                            | 6.82    | 6.34    | 6.71    | 0.34               | 1.27                    | ±11.0%                   |
| 2600                 | 52.5                               | 2.16                            | 6.63    | 6.16    | 6.52    | 0.33               | 1.27                    | ±11.0%                   |
| 5200                 | 49.0                               | 5.30                            | 4.63    | 4.30    | 4.55    | 0.36               | 1.60                    | ±13.1%                   |
| 5250                 | 48.9                               | 5.36                            | 4.48    | 4.16    | 4.41    | 0.34               | 1.72                    | ±13.1%                   |
| 5300                 | 48.9                               | 5.42                            | 4.36    | 4.05    | 4.29    | 0.34               | 1.74                    | ±13.1%                   |
| 5500                 | 48.6                               | 5.65                            | 4.11    | 3.82    | 4.04    | 0.41               | 1.61                    | ±13.1%                   |
| 5600                 | 48.5                               | 5.77                            | 4.09    | 3.80    | 4.03    | 0.40               | 1.67                    | ±13.1%                   |
| 5750                 | 48.3                               | 5.94                            | 4.06    | 3.78    | 4.00    | 0.40               | 1.75                    | ±13.1%                   |
| 5800                 | 48.2                               | 6.00                            | 4.11    | 3.81    | 4.04    | 0.36               | 1.86                    | ±13.1%                   |

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

<sup>F</sup> The probes are calibrated using tissue simulating liquids (TSL) that deviate for  $\epsilon$  and  $\sigma$  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.

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

<sup>H</sup> 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:3745

### Calibration Parameter Determined in HSL

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity <sup>F</sup> (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc <sup>H</sup> (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|--------------------------|
| 6500                 | 34.5                               | 6.07                            | 5.09    | 4.81    | 5.01    | 0.20               | 1.27                    | ±18.6%                   |

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

<sup>F</sup> The probes are calibrated using tissue simulating liquids (TSL) that deviate for  $\epsilon$  and  $\sigma$  by less than ±10% from the target values (typically better than ±5%) and are valid for TSL with deviations of up to ±10%.

<sup>G</sup> 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.

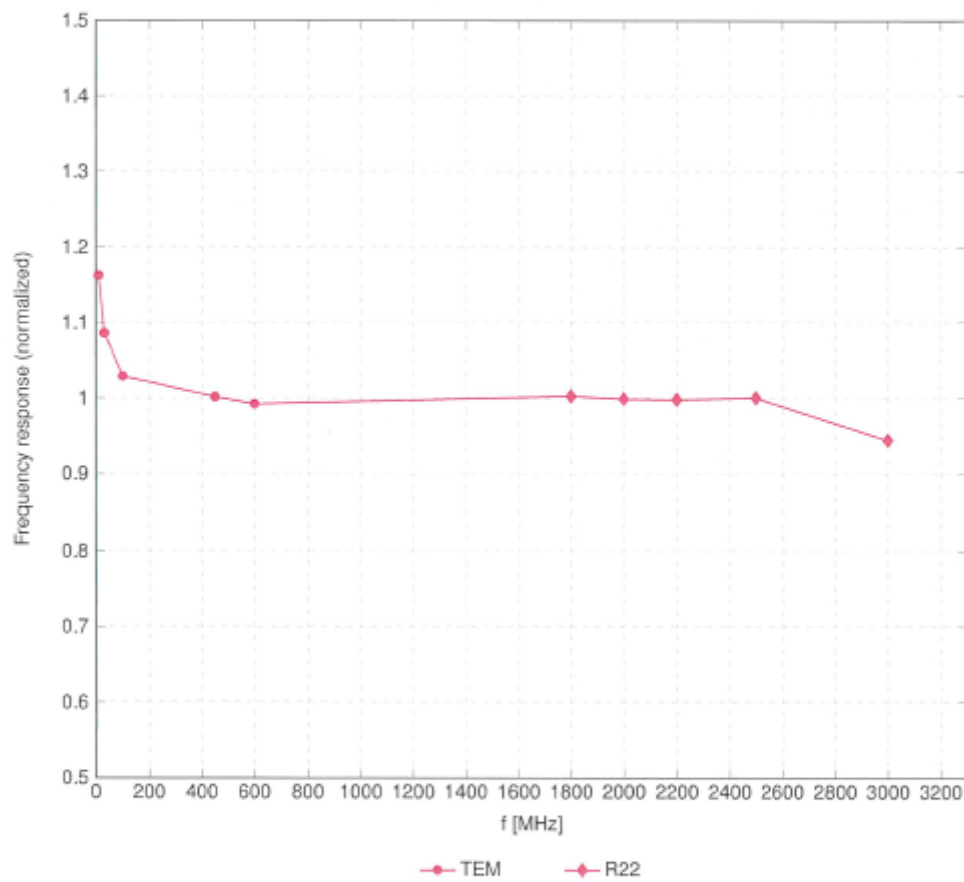
<sup>H</sup> The stated uncertainty is the total calibration uncertainty (k = 2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1526:2020.

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### Frequency Response of E-Field

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

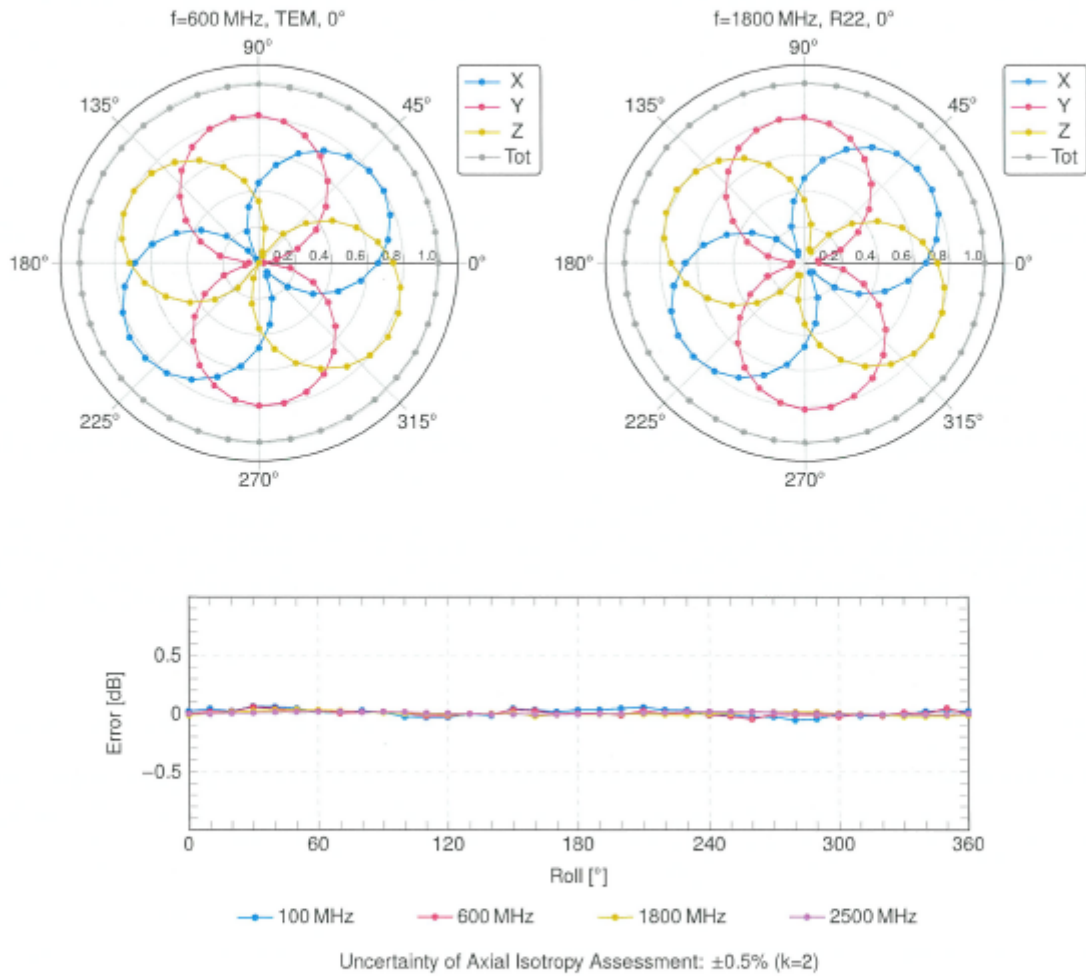


Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

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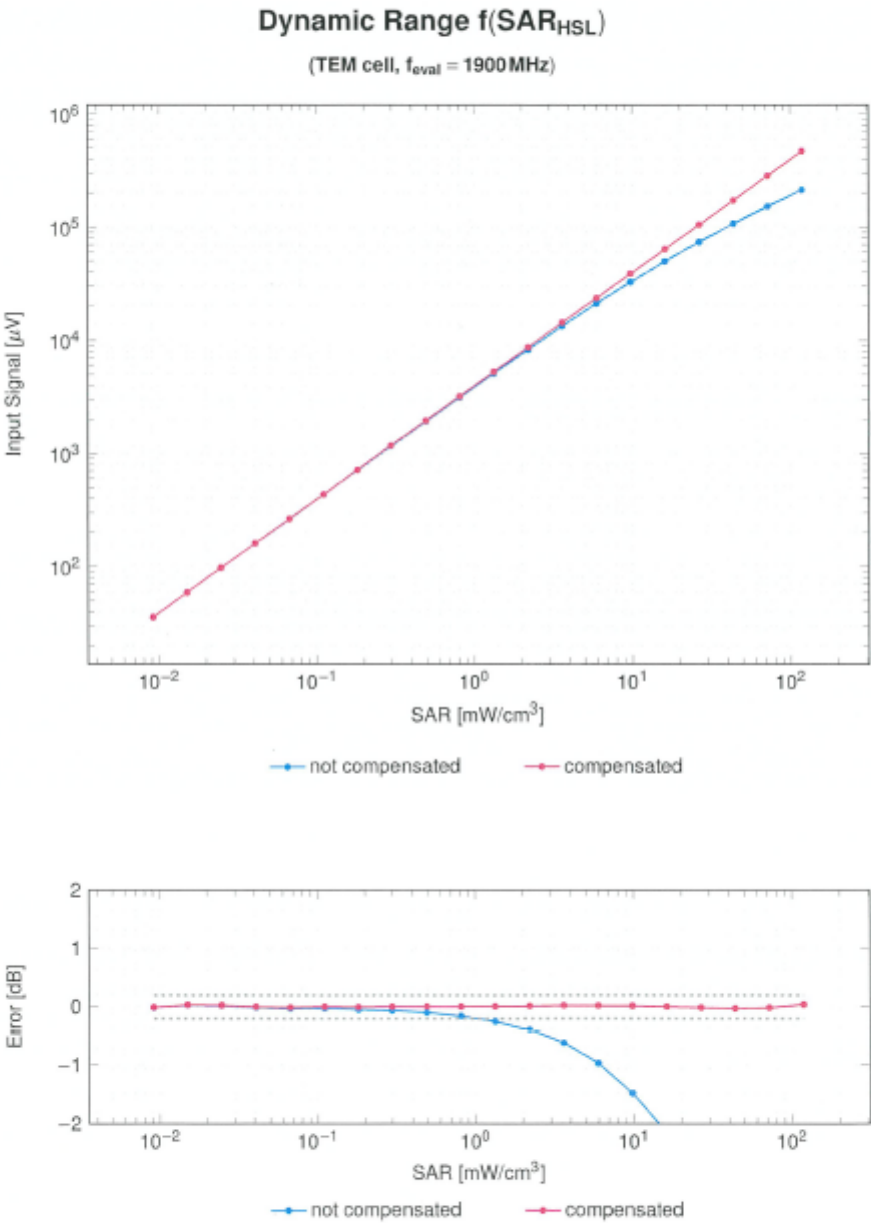
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Receiving Pattern ( $\phi$ ),  $\theta = 0^\circ$



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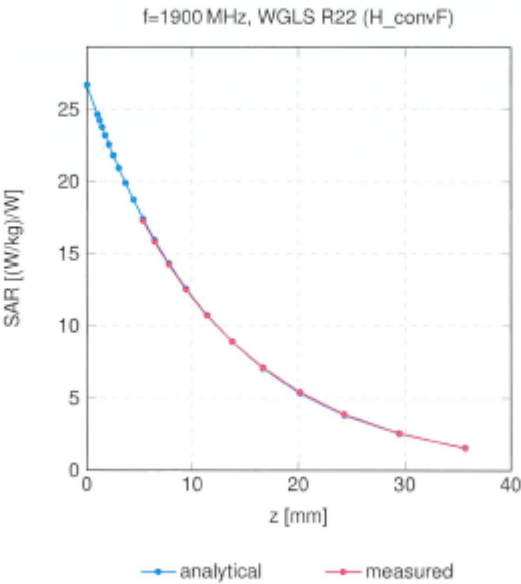
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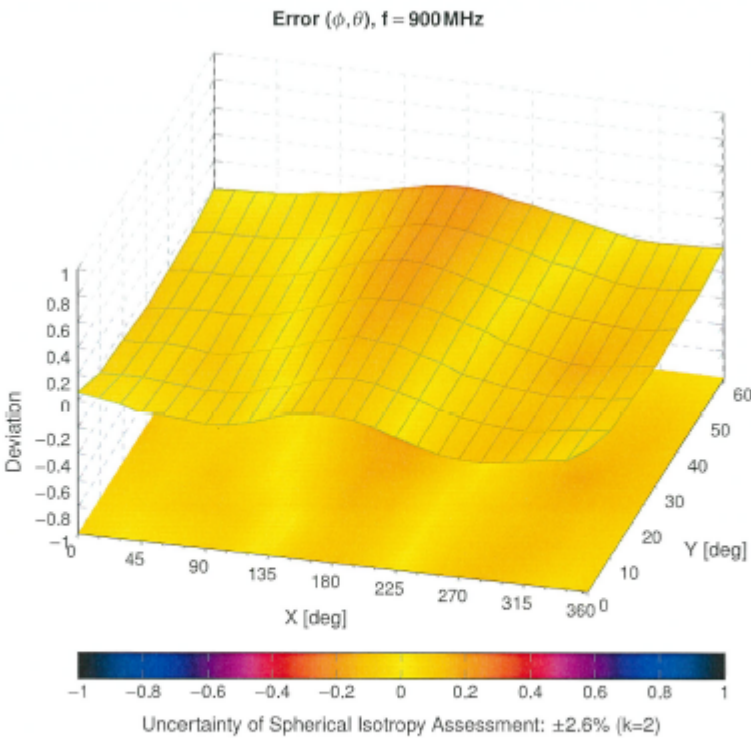
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Conversion Factor Assessment



Deviation from Isotropy in Liquid



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## Appendix: Modulation Calibration Parameters

| UID   | Rev | Communication System Name                           | Group     | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|-----------------------------------------------------|-----------|----------|------------------------|
| 0     |     | CW                                                  | CW        | 0.00     | ±4.7                   |
| 10010 | CAB | SAR Validation (Square, 100 ms, 10 ms)              | Test      | 10.00    | ±9.6                   |
| 10011 | CAC | UMTS-FDD (WCDMA)                                    | WCDMA     | 2.91     | ±9.6                   |
| 10012 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)            | WLAN      | 1.87     | ±9.6                   |
| 10013 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)       | WLAN      | 9.46     | ±9.6                   |
| 10021 | DAC | GSM-FDD (TDMA, GMSK)                                | GSM       | 9.39     | ±9.6                   |
| 10023 | DAC | GPRS-FDD (TDMA, GMSK, TN 0)                         | GSM       | 9.57     | ±9.6                   |
| 10024 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1)                       | GSM       | 6.56     | ±9.6                   |
| 10025 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0)                         | GSM       | 12.62    | ±9.6                   |
| 10026 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1)                       | GSM       | 9.55     | ±9.6                   |
| 10027 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2)                     | GSM       | 4.80     | ±9.6                   |
| 10028 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)                   | GSM       | 3.55     | ±9.6                   |
| 10029 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2)                     | GSM       | 7.78     | ±9.6                   |
| 10030 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1)                 | Bluetooth | 5.30     | ±9.6                   |
| 10031 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3)                 | Bluetooth | 1.87     | ±9.6                   |
| 10032 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5)                 | Bluetooth | 1.16     | ±9.6                   |
| 10033 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)           | Bluetooth | 7.74     | ±9.6                   |
| 10034 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)           | Bluetooth | 4.53     | ±9.6                   |
| 10035 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)           | Bluetooth | 3.83     | ±9.6                   |
| 10036 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1)               | Bluetooth | 8.01     | ±9.6                   |
| 10037 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3)               | Bluetooth | 4.77     | ±9.6                   |
| 10038 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5)               | Bluetooth | 4.10     | ±9.6                   |
| 10039 | CAB | CDMA2000 (1xRTT, RC1)                               | CDMA2000  | 4.57     | ±9.6                   |
| 10042 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate) | AMPS      | 7.78     | ±9.6                   |
| 10044 | CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM)                    | AMPS      | 0.00     | ±9.6                   |
| 10048 | CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)           | DECT      | 13.80    | ±9.6                   |
| 10049 | CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)         | DECT      | 10.79    | ±9.6                   |
| 10056 | CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps)                      | TD-SCDMA  | 11.01    | ±9.6                   |
| 10058 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)                   | GSM       | 6.52     | ±9.6                   |
| 10059 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)            | WLAN      | 2.12     | ±9.6                   |
| 10060 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)          | WLAN      | 2.83     | ±9.6                   |
| 10061 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)           | WLAN      | 3.60     | ±9.6                   |
| 10062 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)            | WLAN      | 8.68     | ±9.6                   |
| 10063 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)            | WLAN      | 8.63     | ±9.6                   |
| 10064 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)           | WLAN      | 9.09     | ±9.6                   |
| 10065 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)           | WLAN      | 9.00     | ±9.6                   |
| 10066 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)           | WLAN      | 9.38     | ±9.6                   |
| 10067 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)           | WLAN      | 10.12    | ±9.6                   |
| 10068 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)           | WLAN      | 10.24    | ±9.6                   |
| 10069 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)           | WLAN      | 10.56    | ±9.6                   |
| 10071 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)       | WLAN      | 9.83     | ±9.6                   |
| 10072 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)      | WLAN      | 9.62     | ±9.6                   |
| 10073 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)      | WLAN      | 9.94     | ±9.6                   |
| 10074 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)      | WLAN      | 10.30    | ±9.6                   |
| 10075 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)      | WLAN      | 10.77    | ±9.6                   |
| 10076 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)      | WLAN      | 10.94    | ±9.6                   |
| 10077 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)      | WLAN      | 11.00    | ±9.6                   |
| 10081 | CAB | CDMA2000 (1xRTT, RC3)                               | CDMA2000  | 3.97     | ±9.6                   |
| 10082 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate) | AMPS      | 4.77     | ±9.6                   |
| 10090 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-4)                       | GSM       | 6.56     | ±9.6                   |
| 10097 | CAC | UMTS-FDD (HSDPA)                                    | WCDMA     | 3.98     | ±9.6                   |
| 10098 | CAC | UMTS-FDD (HSUPA, Subtest 2)                         | WCDMA     | 3.98     | ±9.6                   |
| 10099 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4)                       | GSM       | 9.55     | ±9.6                   |
| 10100 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | LTE-FDD   | 5.67     | ±9.6                   |
| 10101 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | LTE-FDD   | 6.42     | ±9.6                   |
| 10102 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | LTE-FDD   | 6.60     | ±9.6                   |
| 10103 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | LTE-TDD   | 9.29     | ±9.6                   |
| 10104 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | LTE-TDD   | 9.97     | ±9.6                   |
| 10105 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | LTE-TDD   | 10.01    | ±9.6                   |
| 10108 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)            | LTE-FDD   | 5.80     | ±9.6                   |
| 10109 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)          | LTE-FDD   | 6.43     | ±9.6                   |
| 10110 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)             | LTE-FDD   | 5.75     | ±9.6                   |
| 10111 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)           | LTE-FDD   | 6.44     | ±9.6                   |

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| UID   | Rev | Communication System Name                      | Group   | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|------------------------------------------------|---------|----------|------------------------|
| 10112 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)     | LTE-FDD | 6.59     | ±9.6                   |
| 10113 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)      | LTE-FDD | 6.62     | ±9.6                   |
| 10114 | CAE | IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)  | WLAN    | 8.10     | ±9.6                   |
| 10115 | CAE | IEEE 802.11n (HT Greenfield, 61 Mbps, 16-QAM)  | WLAN    | 8.46     | ±9.6                   |
| 10116 | CAE | IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM) | WLAN    | 8.15     | ±9.6                   |
| 10117 | CAE | IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)       | WLAN    | 8.07     | ±9.6                   |
| 10118 | CAE | IEEE 802.11n (HT Mixed, 61 Mbps, 16-QAM)       | WLAN    | 8.59     | ±9.6                   |
| 10119 | CAE | IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)      | WLAN    | 8.13     | ±9.6                   |
| 10140 | CAF | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)     | LTE-FDD | 6.49     | ±9.6                   |
| 10141 | CAF | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)     | LTE-FDD | 6.53     | ±9.6                   |
| 10142 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)        | LTE-FDD | 5.73     | ±9.6                   |
| 10143 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)      | LTE-FDD | 6.35     | ±9.6                   |
| 10144 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)      | LTE-FDD | 6.65     | ±9.6                   |
| 10145 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)      | LTE-FDD | 5.76     | ±9.6                   |
| 10146 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)    | LTE-FDD | 6.41     | ±9.6                   |
| 10147 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)    | LTE-FDD | 6.72     | ±9.6                   |
| 10149 | CAF | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)      | LTE-FDD | 6.42     | ±9.6                   |
| 10150 | CAF | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)      | LTE-FDD | 6.60     | ±9.6                   |
| 10151 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)        | LTE-TDD | 9.28     | ±9.6                   |
| 10152 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)      | LTE-TDD | 9.92     | ±9.6                   |
| 10153 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)      | LTE-TDD | 10.05    | ±9.6                   |
| 10154 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)        | LTE-FDD | 5.75     | ±9.6                   |
| 10155 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)      | LTE-FDD | 6.43     | ±9.6                   |
| 10156 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         | LTE-FDD | 5.79     | ±9.6                   |
| 10157 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)       | LTE-FDD | 6.49     | ±9.6                   |
| 10158 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)      | LTE-FDD | 6.62     | ±9.6                   |
| 10159 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)       | LTE-FDD | 6.56     | ±9.6                   |
| 10160 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)        | LTE-FDD | 5.82     | ±9.6                   |
| 10161 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)      | LTE-FDD | 6.43     | ±9.6                   |
| 10162 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)      | LTE-FDD | 6.58     | ±9.6                   |
| 10166 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)       | LTE-FDD | 5.46     | ±9.6                   |
| 10167 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)     | LTE-FDD | 6.21     | ±9.6                   |
| 10168 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)     | LTE-FDD | 6.79     | ±9.6                   |
| 10169 | CAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)          | LTE-FDD | 5.73     | ±9.6                   |
| 10170 | CAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)        | LTE-FDD | 6.52     | ±9.6                   |
| 10171 | AAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)        | LTE-FDD | 6.49     | ±9.6                   |
| 10172 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)          | LTE-TDD | 9.21     | ±9.6                   |
| 10173 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)        | LTE-TDD | 9.48     | ±9.6                   |
| 10174 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)        | LTE-TDD | 10.25    | ±9.6                   |
| 10175 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)          | LTE-FDD | 5.72     | ±9.6                   |
| 10176 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)        | LTE-FDD | 6.52     | ±9.6                   |
| 10177 | CAJ | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)           | LTE-FDD | 5.73     | ±9.6                   |
| 10178 | CAH | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)         | LTE-FDD | 6.52     | ±9.6                   |
| 10179 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)        | LTE-FDD | 6.50     | ±9.6                   |
| 10180 | CAH | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         | LTE-FDD | 6.50     | ±9.6                   |
| 10181 | CAF | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)          | LTE-FDD | 5.72     | ±9.6                   |
| 10182 | CAF | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)        | LTE-FDD | 6.52     | ±9.6                   |
| 10183 | AAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)        | LTE-FDD | 6.50     | ±9.6                   |
| 10184 | CAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)           | LTE-FDD | 5.73     | ±9.6                   |
| 10185 | CAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)         | LTE-FDD | 6.51     | ±9.6                   |
| 10186 | AAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         | LTE-FDD | 6.50     | ±9.6                   |
| 10187 | CAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         | LTE-FDD | 5.73     | ±9.6                   |
| 10188 | CAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)       | LTE-FDD | 6.52     | ±9.6                   |
| 10189 | AAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)       | LTE-FDD | 6.50     | ±9.6                   |
| 10193 | CAE | IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)   | WLAN    | 8.09     | ±9.6                   |
| 10194 | CAE | IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)  | WLAN    | 8.12     | ±9.6                   |
| 10195 | CAE | IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)  | WLAN    | 8.21     | ±9.6                   |
| 10196 | CAE | IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)        | WLAN    | 8.10     | ±9.6                   |
| 10197 | CAE | IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)       | WLAN    | 8.13     | ±9.6                   |
| 10198 | CAE | IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)       | WLAN    | 8.27     | ±9.6                   |
| 10219 | CAE | IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)        | WLAN    | 8.03     | ±9.6                   |
| 10220 | CAE | IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)     | WLAN    | 8.13     | ±9.6                   |
| 10221 | CAE | IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)     | WLAN    | 8.27     | ±9.6                   |
| 10222 | CAE | IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)         | WLAN    | 8.06     | ±9.6                   |
| 10223 | CAE | IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)       | WLAN    | 8.48     | ±9.6                   |
| 10224 | CAE | IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)      | WLAN    | 8.08     | ±9.6                   |

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| UID   | Rev | Communication System Name                                            | Group    | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|----------------------------------------------------------------------|----------|----------|------------------------|
| 10225 | CAC | UMTS-FDD (HSPA+)                                                     | WCDMA    | 5.97     | ±9.6                   |
| 10226 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)                             | LTE-TDD  | 9.49     | ±9.6                   |
| 10227 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)                             | LTE-TDD  | 10.26    | ±9.6                   |
| 10228 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)                               | LTE-TDD  | 9.22     | ±9.6                   |
| 10229 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)                               | LTE-TDD  | 9.48     | ±9.6                   |
| 10230 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)                               | LTE-TDD  | 10.25    | ±9.6                   |
| 10231 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)                                 | LTE-TDD  | 9.19     | ±9.6                   |
| 10232 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)                               | LTE-TDD  | 9.48     | ±9.6                   |
| 10233 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)                               | LTE-TDD  | 10.25    | ±9.6                   |
| 10234 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)                                 | LTE-TDD  | 9.21     | ±9.6                   |
| 10235 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)                              | LTE-TDD  | 9.48     | ±9.6                   |
| 10236 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)                              | LTE-TDD  | 10.25    | ±9.6                   |
| 10237 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)                                | LTE-TDD  | 9.21     | ±9.6                   |
| 10238 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)                              | LTE-TDD  | 9.48     | ±9.6                   |
| 10239 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)                              | LTE-TDD  | 10.25    | ±9.6                   |
| 10240 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)                                | LTE-TDD  | 9.21     | ±9.6                   |
| 10241 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)                           | LTE-TDD  | 9.82     | ±9.6                   |
| 10242 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)                           | LTE-TDD  | 9.86     | ±9.6                   |
| 10243 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)                             | LTE-TDD  | 9.46     | ±9.6                   |
| 10244 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)                             | LTE-TDD  | 10.06    | ±9.6                   |
| 10245 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                             | LTE-TDD  | 10.06    | ±9.6                   |
| 10246 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)                               | LTE-TDD  | 9.30     | ±9.6                   |
| 10247 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)                             | LTE-TDD  | 9.91     | ±9.6                   |
| 10248 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)                             | LTE-TDD  | 10.09    | ±9.6                   |
| 10249 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)                               | LTE-TDD  | 9.29     | ±9.6                   |
| 10250 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)                            | LTE-TDD  | 9.81     | ±9.6                   |
| 10251 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)                            | LTE-TDD  | 10.17    | ±9.6                   |
| 10252 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)                              | LTE-TDD  | 9.24     | ±9.6                   |
| 10253 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)                            | LTE-TDD  | 9.90     | ±9.6                   |
| 10254 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)                            | LTE-TDD  | 10.14    | ±9.6                   |
| 10255 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)                              | LTE-TDD  | 9.20     | ±9.6                   |
| 10256 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)                          | LTE-TDD  | 9.96     | ±9.6                   |
| 10257 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)                          | LTE-TDD  | 10.08    | ±9.6                   |
| 10258 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)                            | LTE-TDD  | 9.34     | ±9.6                   |
| 10259 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)                            | LTE-TDD  | 9.98     | ±9.6                   |
| 10260 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)                            | LTE-TDD  | 9.97     | ±9.6                   |
| 10261 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)                              | LTE-TDD  | 9.24     | ±9.6                   |
| 10262 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)                            | LTE-TDD  | 9.83     | ±9.6                   |
| 10263 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)                            | LTE-TDD  | 10.16    | ±9.6                   |
| 10264 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)                              | LTE-TDD  | 9.23     | ±9.6                   |
| 10265 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)                           | LTE-TDD  | 9.92     | ±9.6                   |
| 10266 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)                           | LTE-TDD  | 10.07    | ±9.6                   |
| 10267 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)                             | LTE-TDD  | 9.30     | ±9.6                   |
| 10268 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)                           | LTE-TDD  | 10.06    | ±9.6                   |
| 10269 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)                           | LTE-TDD  | 10.13    | ±9.6                   |
| 10270 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)                             | LTE-TDD  | 9.58     | ±9.6                   |
| 10274 | CAC | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)                            | WCDMA    | 4.87     | ±9.6                   |
| 10275 | CAC | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)                             | WCDMA    | 3.96     | ±9.6                   |
| 10277 | CAA | PHS (QPSK)                                                           | PHS      | 11.81    | ±9.6                   |
| 10278 | CAA | PHS (QPSK, BW 884 MHz, Roll-off 0.5)                                 | PHS      | 11.81    | ±9.6                   |
| 10279 | CAA | PHS (QPSK, BW 884 MHz, Roll-off 0.38)                                | PHS      | 12.16    | ±9.6                   |
| 10290 | AAB | CDMA2000, RC1, SO55, Full Rate                                       | CDMA2000 | 3.91     | ±9.6                   |
| 10291 | AAB | CDMA2000, RC3, SO55, Full Rate                                       | CDMA2000 | 3.46     | ±9.6                   |
| 10292 | AAB | CDMA2000, RC3, SO32, Full Rate                                       | CDMA2000 | 3.39     | ±9.6                   |
| 10293 | AAB | CDMA2000, RC3, SO3, Full Rate                                        | CDMA2000 | 3.50     | ±9.6                   |
| 10295 | AAB | CDMA2000, RC1, SO3, 1/8th Rate 25 fr.                                | CDMA2000 | 12.49    | ±9.6                   |
| 10297 | AAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)                              | LTE-FDD  | 5.81     | ±9.6                   |
| 10298 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)                               | LTE-FDD  | 5.72     | ±9.6                   |
| 10299 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)                             | LTE-FDD  | 6.39     | ±9.6                   |
| 10300 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                             | LTE-FDD  | 6.60     | ±9.6                   |
| 10301 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC)                 | WiMAX    | 12.03    | ±9.6                   |
| 10302 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols) | WiMAX    | 12.57    | ±9.6                   |
| 10303 | AAA | IEEE 802.16e WiMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC)                | WiMAX    | 12.52    | ±9.6                   |
| 10304 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC)                | WiMAX    | 11.86    | ±9.6                   |
| 10305 | AAA | IEEE 802.16e WiMAX (31:15, 10 ms, 10 MHz, 64QAM, PUSC, 15 symbols)   | WiMAX    | 15.24    | ±9.6                   |
| 10306 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols)   | WiMAX    | 14.67    | ±9.6                   |

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| UID   | Rev | Communication System Name                                                       | Group    | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|---------------------------------------------------------------------------------|----------|----------|------------------------|
| 10307 | AAA | IEEE 802.16e WiMAX (29-18, 10 ms, 10 MHz, QPSK, PUSC, 18 symbols)               | WiMAX    | 14.49    | ±9.6                   |
| 10308 | AAA | IEEE 802.16e WiMAX (29-18, 10 ms, 10 MHz, 16QAM, PUSC)                          | WiMAX    | 14.46    | ±9.6                   |
| 10309 | AAA | IEEE 802.16e WiMAX (29-18, 10 ms, 10 MHz, 16QAM, AMC 2x3, 18 symbols)           | WiMAX    | 14.58    | ±9.6                   |
| 10310 | AAA | IEEE 802.16e WiMAX (29-18, 10 ms, 10 MHz, QPSK, AMC 2x3, 18 symbols)            | WiMAX    | 14.57    | ±9.6                   |
| 10311 | AAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)                                        | LTE-FDD  | 6.06     | ±9.6                   |
| 10313 | AAA | IDEN 1:3                                                                        | IDEN     | 10.51    | ±9.6                   |
| 10314 | AAA | IDEN 1:6                                                                        | IDEN     | 13.48    | ±9.6                   |
| 10315 | AAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)                       | WLAN     | 1.71     | ±9.6                   |
| 10316 | AAB | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)                   | WLAN     | 8.36     | ±9.6                   |
| 10317 | AAE | IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)                         | WLAN     | 8.36     | ±9.6                   |
| 10352 | AAA | Pulse Waveform (200Hz, 10%)                                                     | Generic  | 10.00    | ±9.6                   |
| 10353 | AAA | Pulse Waveform (200Hz, 20%)                                                     | Generic  | 6.99     | ±9.6                   |
| 10354 | AAA | Pulse Waveform (200Hz, 40%)                                                     | Generic  | 3.98     | ±9.6                   |
| 10355 | AAA | Pulse Waveform (200Hz, 60%)                                                     | Generic  | 2.22     | ±9.6                   |
| 10356 | AAA | Pulse Waveform (200Hz, 80%)                                                     | Generic  | 0.97     | ±9.6                   |
| 10387 | AAA | QPSK Waveform, 1 MHz                                                            | Generic  | 5.10     | ±9.6                   |
| 10388 | AAA | QPSK Waveform, 10 MHz                                                           | Generic  | 5.22     | ±9.6                   |
| 10396 | AAA | 64-QAM Waveform, 100 kHz                                                        | Generic  | 6.27     | ±9.6                   |
| 10399 | AAA | 64-QAM Waveform, 40 MHz                                                         | Generic  | 6.27     | ±9.6                   |
| 10400 | AAF | IEEE 802.11ac WiFi (20 MHz, 64-QAM, 99pc duty cycle)                            | WLAN     | 8.37     | ±9.6                   |
| 10401 | AAF | IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle)                            | WLAN     | 8.60     | ±9.6                   |
| 10402 | AAF | IEEE 802.11ac WiFi (80 MHz, 64-QAM, 99pc duty cycle)                            | WLAN     | 8.53     | ±9.6                   |
| 10403 | AAB | CDMA2000 (1xEV-DO, Rev. 0)                                                      | CDMA2000 | 3.76     | ±9.6                   |
| 10404 | AAB | CDMA2000 (1xEV-DO, Rev. A)                                                      | CDMA2000 | 3.77     | ±9.6                   |
| 10406 | AAB | CDMA2000, RC3, SC32, SCH0, Full Rate                                            | CDMA2000 | 5.22     | ±9.6                   |
| 10410 | AAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4) | LTE-TDD  | 7.82     | ±9.6                   |
| 10414 | AAA | WLAN CCDF, 64-QAM, 40 MHz                                                       | Generic  | 8.54     | ±9.6                   |
| 10415 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)                       | WLAN     | 1.54     | ±9.6                   |
| 10416 | AAA | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)                   | WLAN     | 8.23     | ±9.6                   |
| 10417 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)                       | WLAN     | 8.23     | ±9.6                   |
| 10418 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)   | WLAN     | 8.14     | ±9.6                   |
| 10419 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)  | WLAN     | 8.19     | ±9.6                   |
| 10422 | AAD | IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)                                    | WLAN     | 8.32     | ±9.6                   |
| 10423 | AAD | IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)                                 | WLAN     | 8.47     | ±9.6                   |
| 10424 | AAD | IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)                                 | WLAN     | 8.40     | ±9.6                   |
| 10425 | AAD | IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)                                     | WLAN     | 8.41     | ±9.6                   |
| 10426 | AAD | IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)                                   | WLAN     | 8.45     | ±9.6                   |
| 10427 | AAD | IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)                                  | WLAN     | 8.41     | ±9.6                   |
| 10430 | AAE | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)                                                | LTE-FDD  | 8.28     | ±9.6                   |
| 10431 | AAE | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)                                               | LTE-FDD  | 8.38     | ±9.6                   |
| 10432 | AAD | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)                                               | LTE-FDD  | 8.34     | ±9.6                   |
| 10433 | AAD | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)                                               | LTE-FDD  | 8.34     | ±9.6                   |
| 10434 | AAB | W-CDMA (BS Test Model 1, 64 DPCH)                                               | WCDMA    | 8.60     | ±9.6                   |
| 10435 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                  | LTE-TDD  | 7.82     | ±9.6                   |
| 10447 | AAE | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)                                  | LTE-FDD  | 7.56     | ±9.6                   |
| 10448 | AAE | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.53     | ±9.6                   |
| 10449 | AAD | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.51     | ±9.6                   |
| 10450 | AAD | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.48     | ±9.6                   |
| 10451 | AAB | W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)                                 | WCDMA    | 7.59     | ±9.6                   |
| 10453 | AAE | Validation (Square, 10 ms, 1 ms)                                                | Test     | 10.00    | ±9.6                   |
| 10456 | AAD | IEEE 802.11ac WiFi (160 MHz, 64-QAM, 99pc duty cycle)                           | WLAN     | 8.63     | ±9.6                   |
| 10457 | AAB | UMTS-FDD (DC-HSDPA)                                                             | WCDMA    | 6.62     | ±9.6                   |
| 10458 | AAA | CDMA2000 (1xEV-DO, Rev. B, 2 carriers)                                          | CDMA2000 | 6.55     | ±9.6                   |
| 10459 | AAA | CDMA2000 (1xEV-DO, Rev. B, 3 carriers)                                          | CDMA2000 | 8.25     | ±9.6                   |
| 10460 | AAB | UMTS-FDD (WCDMA, AMR)                                                           | WCDMA    | 2.39     | ±9.6                   |
| 10461 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 7.82     | ±9.6                   |
| 10462 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)               | LTE-TDD  | 8.30     | ±9.6                   |
| 10463 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)               | LTE-TDD  | 8.56     | ±9.6                   |
| 10464 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                   | LTE-TDD  | 7.82     | ±9.6                   |
| 10465 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.32     | ±9.6                   |
| 10466 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.57     | ±9.6                   |
| 10467 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                   | LTE-TDD  | 7.82     | ±9.6                   |
| 10468 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.32     | ±9.6                   |
| 10469 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.56     | ±9.6                   |
| 10470 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                  | LTE-TDD  | 7.82     | ±9.6                   |
| 10471 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)                | LTE-TDD  | 8.32     | ±9.6                   |

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| UID   | Rev | Communication System Name                                            | Group   | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|----------------------------------------------------------------------|---------|----------|------------------------|
| 10472 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.57     | ±9.6                   |
| 10473 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)       | LTE-TDD | 7.82     | ±9.6                   |
| 10474 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.32     | ±9.6                   |
| 10475 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.57     | ±9.6                   |
| 10477 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.32     | ±9.6                   |
| 10478 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.57     | ±9.6                   |
| 10479 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74     | ±9.6                   |
| 10480 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.18     | ±9.6                   |
| 10481 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.45     | ±9.6                   |
| 10482 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)      | LTE-TDD | 7.71     | ±9.6                   |
| 10483 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.39     | ±9.6                   |
| 10484 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.47     | ±9.6                   |
| 10485 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)      | LTE-TDD | 7.59     | ±9.6                   |
| 10486 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.38     | ±9.6                   |
| 10487 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.60     | ±9.6                   |
| 10488 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.70     | ±9.6                   |
| 10489 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.31     | ±9.6                   |
| 10490 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54     | ±9.6                   |
| 10491 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.74     | ±9.6                   |
| 10492 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.41     | ±9.6                   |
| 10493 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.55     | ±9.6                   |
| 10494 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.74     | ±9.6                   |
| 10495 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.37     | ±9.6                   |
| 10496 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54     | ±9.6                   |
| 10497 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 7.67     | ±9.6                   |
| 10498 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.40     | ±9.6                   |
| 10499 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.68     | ±9.6                   |
| 10500 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.67     | ±9.6                   |
| 10501 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.44     | ±9.6                   |
| 10502 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.52     | ±9.6                   |
| 10503 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.72     | ±9.6                   |
| 10504 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.31     | ±9.6                   |
| 10505 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54     | ±9.6                   |
| 10506 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74     | ±9.6                   |
| 10507 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.36     | ±9.6                   |
| 10508 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.55     | ±9.6                   |
| 10509 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.99     | ±9.6                   |
| 10510 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.49     | ±9.6                   |
| 10511 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.51     | ±9.6                   |
| 10512 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74     | ±9.6                   |
| 10513 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.42     | ±9.6                   |
| 10514 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.45     | ±9.6                   |
| 10515 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)            | WLAN    | 1.58     | ±9.6                   |
| 10516 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)          | WLAN    | 1.57     | ±9.6                   |
| 10517 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)           | WLAN    | 1.58     | ±9.6                   |
| 10518 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)            | WLAN    | 8.23     | ±9.6                   |
| 10519 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)           | WLAN    | 8.39     | ±9.6                   |
| 10520 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)           | WLAN    | 8.12     | ±9.6                   |
| 10521 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)           | WLAN    | 7.97     | ±9.6                   |
| 10522 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)           | WLAN    | 8.45     | ±9.6                   |
| 10523 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)           | WLAN    | 8.08     | ±9.6                   |
| 10524 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)           | WLAN    | 8.27     | ±9.6                   |
| 10525 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS0, 99pc duty cycle)                   | WLAN    | 8.36     | ±9.6                   |
| 10526 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS1, 99pc duty cycle)                   | WLAN    | 8.42     | ±9.6                   |
| 10527 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS2, 99pc duty cycle)                   | WLAN    | 8.21     | ±9.6                   |
| 10528 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS3, 99pc duty cycle)                   | WLAN    | 8.36     | ±9.6                   |
| 10529 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS4, 99pc duty cycle)                   | WLAN    | 8.36     | ±9.6                   |
| 10531 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS6, 99pc duty cycle)                   | WLAN    | 8.43     | ±9.6                   |
| 10532 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS7, 99pc duty cycle)                   | WLAN    | 8.29     | ±9.6                   |
| 10533 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS8, 99pc duty cycle)                   | WLAN    | 8.38     | ±9.6                   |
| 10534 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS0, 99pc duty cycle)                   | WLAN    | 8.45     | ±9.6                   |
| 10535 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS1, 99pc duty cycle)                   | WLAN    | 8.45     | ±9.6                   |
| 10536 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS2, 99pc duty cycle)                   | WLAN    | 8.32     | ±9.6                   |
| 10537 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS3, 99pc duty cycle)                   | WLAN    | 8.44     | ±9.6                   |
| 10538 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS4, 99pc duty cycle)                   | WLAN    | 8.54     | ±9.6                   |
| 10540 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS6, 99pc duty cycle)                   | WLAN    | 8.39     | ±9.6                   |

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| UID   | Rev | Communication System Name                                       | Group | PAR (dB) | Unc <sup>k</sup> k = 2 |
|-------|-----|-----------------------------------------------------------------|-------|----------|------------------------|
| 10541 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS7, 99pc duty cycle)              | WLAN  | 8.46     | ±9.6                   |
| 10542 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS8, 99pc duty cycle)              | WLAN  | 8.65     | ±9.6                   |
| 10543 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS9, 99pc duty cycle)              | WLAN  | 8.65     | ±9.6                   |
| 10544 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS0, 99pc duty cycle)              | WLAN  | 8.47     | ±9.6                   |
| 10545 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS1, 99pc duty cycle)              | WLAN  | 8.55     | ±9.6                   |
| 10546 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS2, 99pc duty cycle)              | WLAN  | 8.35     | ±9.6                   |
| 10547 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS3, 99pc duty cycle)              | WLAN  | 8.49     | ±9.6                   |
| 10548 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS4, 99pc duty cycle)              | WLAN  | 8.37     | ±9.6                   |
| 10550 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS6, 99pc duty cycle)              | WLAN  | 8.38     | ±9.6                   |
| 10551 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS7, 99pc duty cycle)              | WLAN  | 8.50     | ±9.6                   |
| 10552 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS8, 99pc duty cycle)              | WLAN  | 8.42     | ±9.6                   |
| 10553 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS9, 99pc duty cycle)              | WLAN  | 8.45     | ±9.6                   |
| 10554 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS0, 99pc duty cycle)             | WLAN  | 8.48     | ±9.6                   |
| 10555 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS1, 99pc duty cycle)             | WLAN  | 8.47     | ±9.6                   |
| 10556 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS2, 99pc duty cycle)             | WLAN  | 8.50     | ±9.6                   |
| 10557 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS3, 99pc duty cycle)             | WLAN  | 8.52     | ±9.6                   |
| 10558 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS4, 99pc duty cycle)             | WLAN  | 8.61     | ±9.6                   |
| 10560 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS6, 99pc duty cycle)             | WLAN  | 8.73     | ±9.6                   |
| 10561 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS7, 99pc duty cycle)             | WLAN  | 8.56     | ±9.6                   |
| 10562 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS8, 99pc duty cycle)             | WLAN  | 8.69     | ±9.6                   |
| 10563 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS9, 99pc duty cycle)             | WLAN  | 8.77     | ±9.6                   |
| 10564 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)  | WLAN  | 8.25     | ±9.6                   |
| 10565 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | WLAN  | 8.45     | ±9.6                   |
| 10566 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | WLAN  | 8.13     | ±9.6                   |
| 10567 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | WLAN  | 8.00     | ±9.6                   |
| 10568 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | WLAN  | 8.37     | ±9.6                   |
| 10569 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | WLAN  | 8.10     | ±9.6                   |
| 10570 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | WLAN  | 8.30     | ±9.6                   |
| 10571 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)       | WLAN  | 1.99     | ±9.6                   |
| 10572 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)       | WLAN  | 1.99     | ±9.6                   |
| 10573 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)     | WLAN  | 1.98     | ±9.6                   |
| 10574 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)      | WLAN  | 1.98     | ±9.6                   |
| 10575 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)  | WLAN  | 8.59     | ±9.6                   |
| 10576 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)  | WLAN  | 8.60     | ±9.6                   |
| 10577 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | WLAN  | 8.70     | ±9.6                   |
| 10578 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | WLAN  | 8.49     | ±9.6                   |
| 10579 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | WLAN  | 8.36     | ±9.6                   |
| 10580 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | WLAN  | 8.76     | ±9.6                   |
| 10581 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | WLAN  | 8.35     | ±9.6                   |
| 10582 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | WLAN  | 8.67     | ±9.6                   |
| 10583 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)       | WLAN  | 8.59     | ±9.6                   |
| 10584 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)       | WLAN  | 8.60     | ±9.6                   |
| 10585 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)      | WLAN  | 8.70     | ±9.6                   |
| 10586 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)      | WLAN  | 8.49     | ±9.6                   |
| 10587 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)      | WLAN  | 8.36     | ±9.6                   |
| 10588 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)      | WLAN  | 8.76     | ±9.6                   |
| 10589 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)      | WLAN  | 8.35     | ±9.6                   |
| 10590 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)      | WLAN  | 8.67     | ±9.6                   |
| 10591 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS0, 90pc duty cycle)          | WLAN  | 8.63     | ±9.6                   |
| 10592 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 90pc duty cycle)          | WLAN  | 8.79     | ±9.6                   |
| 10593 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS2, 90pc duty cycle)          | WLAN  | 8.64     | ±9.6                   |
| 10594 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 90pc duty cycle)          | WLAN  | 8.74     | ±9.6                   |
| 10595 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS4, 90pc duty cycle)          | WLAN  | 8.74     | ±9.6                   |
| 10596 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS5, 90pc duty cycle)          | WLAN  | 8.71     | ±9.6                   |
| 10597 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 90pc duty cycle)          | WLAN  | 8.72     | ±9.6                   |
| 10598 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 90pc duty cycle)          | WLAN  | 8.50     | ±9.6                   |
| 10599 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS0, 90pc duty cycle)          | WLAN  | 8.79     | ±9.6                   |
| 10600 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS1, 90pc duty cycle)          | WLAN  | 8.88     | ±9.6                   |
| 10601 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS2, 90pc duty cycle)          | WLAN  | 8.82     | ±9.6                   |
| 10602 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 90pc duty cycle)          | WLAN  | 8.94     | ±9.6                   |
| 10603 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS4, 90pc duty cycle)          | WLAN  | 9.03     | ±9.6                   |
| 10604 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS5, 90pc duty cycle)          | WLAN  | 8.76     | ±9.6                   |
| 10605 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS6, 90pc duty cycle)          | WLAN  | 8.97     | ±9.6                   |
| 10606 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS7, 90pc duty cycle)          | WLAN  | 8.82     | ±9.6                   |
| 10607 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS0, 90pc duty cycle)              | WLAN  | 8.64     | ±9.6                   |
| 10608 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS1, 90pc duty cycle)              | WLAN  | 8.77     | ±9.6                   |

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| UID   | Rev | Communication System Name                              | Group     | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|--------------------------------------------------------|-----------|----------|------------------------|
| 10609 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle)     | WLAN      | 8.57     | ±9.6                   |
| 10610 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS3, 90pc duty cycle)     | WLAN      | 8.78     | ±9.6                   |
| 10611 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc duty cycle)     | WLAN      | 8.70     | ±9.6                   |
| 10612 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS5, 90pc duty cycle)     | WLAN      | 8.77     | ±9.6                   |
| 10613 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle)     | WLAN      | 8.94     | ±9.6                   |
| 10614 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle)     | WLAN      | 8.59     | ±9.6                   |
| 10615 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc duty cycle)     | WLAN      | 8.82     | ±9.6                   |
| 10616 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS0, 90pc duty cycle)     | WLAN      | 8.82     | ±9.6                   |
| 10617 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS1, 90pc duty cycle)     | WLAN      | 8.81     | ±9.6                   |
| 10618 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS2, 90pc duty cycle)     | WLAN      | 8.58     | ±9.6                   |
| 10619 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS3, 90pc duty cycle)     | WLAN      | 8.86     | ±9.6                   |
| 10620 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS4, 90pc duty cycle)     | WLAN      | 8.87     | ±9.6                   |
| 10621 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS5, 90pc duty cycle)     | WLAN      | 8.77     | ±9.6                   |
| 10622 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS6, 90pc duty cycle)     | WLAN      | 8.68     | ±9.6                   |
| 10623 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS7, 90pc duty cycle)     | WLAN      | 8.82     | ±9.6                   |
| 10624 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)     | WLAN      | 8.96     | ±9.6                   |
| 10625 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle)     | WLAN      | 8.96     | ±9.6                   |
| 10626 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS0, 90pc duty cycle)     | WLAN      | 8.83     | ±9.6                   |
| 10627 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS1, 90pc duty cycle)     | WLAN      | 8.88     | ±9.6                   |
| 10628 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle)     | WLAN      | 8.71     | ±9.6                   |
| 10629 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle)     | WLAN      | 8.85     | ±9.6                   |
| 10630 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS4, 90pc duty cycle)     | WLAN      | 8.72     | ±9.6                   |
| 10631 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS5, 90pc duty cycle)     | WLAN      | 8.81     | ±9.6                   |
| 10632 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS6, 90pc duty cycle)     | WLAN      | 8.74     | ±9.6                   |
| 10633 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle)     | WLAN      | 8.83     | ±9.6                   |
| 10634 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)     | WLAN      | 8.80     | ±9.6                   |
| 10635 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)     | WLAN      | 8.81     | ±9.6                   |
| 10636 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS0, 90pc duty cycle)    | WLAN      | 8.83     | ±9.6                   |
| 10637 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS1, 90pc duty cycle)    | WLAN      | 8.79     | ±9.6                   |
| 10638 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS2, 90pc duty cycle)    | WLAN      | 8.86     | ±9.6                   |
| 10639 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle)    | WLAN      | 8.85     | ±9.6                   |
| 10640 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS4, 90pc duty cycle)    | WLAN      | 8.98     | ±9.6                   |
| 10641 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle)    | WLAN      | 9.06     | ±9.6                   |
| 10642 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS6, 90pc duty cycle)    | WLAN      | 9.06     | ±9.6                   |
| 10643 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS7, 90pc duty cycle)    | WLAN      | 8.89     | ±9.6                   |
| 10644 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS8, 90pc duty cycle)    | WLAN      | 9.05     | ±9.6                   |
| 10645 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)    | WLAN      | 9.11     | ±9.6                   |
| 10646 | AAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)  | LTE-TDD   | 11.96    | ±9.6                   |
| 10647 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7) | LTE-TDD   | 11.96    | ±9.6                   |
| 10648 | AAA | CDMA2000 (1x Advanced)                                 | CDMA2000  | 3.45     | ±9.6                   |
| 10652 | AAF | LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)         | LTE-TDD   | 6.91     | ±9.6                   |
| 10653 | AAF | LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)        | LTE-TDD   | 7.42     | ±9.6                   |
| 10654 | AAE | LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)        | LTE-TDD   | 6.96     | ±9.6                   |
| 10655 | AAF | LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)        | LTE-TDD   | 7.21     | ±9.6                   |
| 10658 | AAB | Pulse Waveform (200Hz, 10%)                            | Test      | 10.00    | ±9.6                   |
| 10659 | AAB | Pulse Waveform (200Hz, 20%)                            | Test      | 6.99     | ±9.6                   |
| 10660 | AAB | Pulse Waveform (200Hz, 40%)                            | Test      | 3.98     | ±9.6                   |
| 10661 | AAB | Pulse Waveform (200Hz, 60%)                            | Test      | 2.22     | ±9.6                   |
| 10662 | AAB | Pulse Waveform (200Hz, 80%)                            | Test      | 0.97     | ±9.6                   |
| 10670 | AAA | Bluetooth Low Energy                                   | Bluetooth | 2.19     | ±9.6                   |
| 10671 | AAC | IEEE 802.11ax (20 MHz, MCS0, 90pc duty cycle)          | WLAN      | 9.09     | ±9.6                   |
| 10672 | AAC | IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle)          | WLAN      | 8.57     | ±9.6                   |
| 10673 | AAC | IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle)          | WLAN      | 8.78     | ±9.6                   |
| 10674 | AAC | IEEE 802.11ax (20 MHz, MCS3, 90pc duty cycle)          | WLAN      | 8.74     | ±9.6                   |
| 10675 | AAC | IEEE 802.11ax (20 MHz, MCS4, 90pc duty cycle)          | WLAN      | 8.90     | ±9.6                   |
| 10676 | AAC | IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle)          | WLAN      | 8.77     | ±9.6                   |
| 10677 | AAC | IEEE 802.11ax (20 MHz, MCS6, 90pc duty cycle)          | WLAN      | 8.73     | ±9.6                   |
| 10678 | AAC | IEEE 802.11ax (20 MHz, MCS7, 90pc duty cycle)          | WLAN      | 8.78     | ±9.6                   |
| 10679 | AAC | IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle)          | WLAN      | 8.89     | ±9.6                   |
| 10680 | AAC | IEEE 802.11ax (20 MHz, MCS9, 90pc duty cycle)          | WLAN      | 8.80     | ±9.6                   |
| 10681 | AAC | IEEE 802.11ax (20 MHz, MCS10, 90pc duty cycle)         | WLAN      | 8.62     | ±9.6                   |
| 10682 | AAC | IEEE 802.11ax (20 MHz, MCS11, 90pc duty cycle)         | WLAN      | 8.83     | ±9.6                   |
| 10683 | AAC | IEEE 802.11ax (20 MHz, MCS0, 99pc duty cycle)          | WLAN      | 8.42     | ±9.6                   |
| 10684 | AAC | IEEE 802.11ax (20 MHz, MCS1, 99pc duty cycle)          | WLAN      | 8.26     | ±9.6                   |
| 10685 | AAC | IEEE 802.11ax (20 MHz, MCS2, 99pc duty cycle)          | WLAN      | 8.33     | ±9.6                   |
| 10686 | AAC | IEEE 802.11ax (20 MHz, MCS3, 99pc duty cycle)          | WLAN      | 8.28     | ±9.6                   |

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| UID   | Rev | Communication System Name                      | Group | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|------------------------------------------------|-------|----------|------------------------|
| 10687 | AAC | IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)  | WLAN  | 8.45     | ±9.6                   |
| 10688 | AAC | IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10689 | AAC | IEEE 802.11ax (20 MHz, MCS6, 99pc duty cycle)  | WLAN  | 8.55     | ±9.6                   |
| 10690 | AAC | IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10691 | AAC | IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)  | WLAN  | 8.25     | ±9.6                   |
| 10692 | AAC | IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10693 | AAC | IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle) | WLAN  | 8.25     | ±9.6                   |
| 10694 | AAC | IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle) | WLAN  | 8.57     | ±9.6                   |
| 10695 | AAC | IEEE 802.11ax (40 MHz, MCS0, 90pc duty cycle)  | WLAN  | 8.78     | ±9.6                   |
| 10696 | AAC | IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle)  | WLAN  | 8.91     | ±9.6                   |
| 10697 | AAC | IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle)  | WLAN  | 8.81     | ±9.6                   |
| 10698 | AAC | IEEE 802.11ax (40 MHz, MCS3, 90pc duty cycle)  | WLAN  | 8.89     | ±9.6                   |
| 10699 | AAC | IEEE 802.11ax (40 MHz, MCS4, 90pc duty cycle)  | WLAN  | 8.82     | ±9.6                   |
| 10700 | AAC | IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle)  | WLAN  | 8.73     | ±9.6                   |
| 10701 | AAC | IEEE 802.11ax (40 MHz, MCS6, 90pc duty cycle)  | WLAN  | 8.86     | ±9.6                   |
| 10702 | AAC | IEEE 802.11ax (40 MHz, MCS7, 90pc duty cycle)  | WLAN  | 8.70     | ±9.6                   |
| 10703 | AAC | IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)  | WLAN  | 8.82     | ±9.6                   |
| 10704 | AAC | IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle)  | WLAN  | 8.56     | ±9.6                   |
| 10705 | AAC | IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle) | WLAN  | 8.69     | ±9.6                   |
| 10706 | AAC | IEEE 802.11ax (40 MHz, MCS11, 90pc duty cycle) | WLAN  | 8.66     | ±9.6                   |
| 10707 | AAC | IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle)  | WLAN  | 8.32     | ±9.6                   |
| 10708 | AAC | IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle)  | WLAN  | 8.55     | ±9.6                   |
| 10709 | AAC | IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)  | WLAN  | 8.33     | ±9.6                   |
| 10710 | AAC | IEEE 802.11ax (40 MHz, MCS3, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10711 | AAC | IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)  | WLAN  | 8.39     | ±9.6                   |
| 10712 | AAC | IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)  | WLAN  | 8.67     | ±9.6                   |
| 10713 | AAC | IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)  | WLAN  | 8.33     | ±9.6                   |
| 10714 | AAC | IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)  | WLAN  | 8.26     | ±9.6                   |
| 10715 | AAC | IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)  | WLAN  | 8.45     | ±9.6                   |
| 10716 | AAC | IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)  | WLAN  | 8.30     | ±9.6                   |
| 10717 | AAC | IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle) | WLAN  | 8.48     | ±9.6                   |
| 10718 | AAC | IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle) | WLAN  | 8.24     | ±9.6                   |
| 10719 | AAC | IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle)  | WLAN  | 8.81     | ±9.6                   |
| 10720 | AAC | IEEE 802.11ax (80 MHz, MCS1, 90pc duty cycle)  | WLAN  | 8.87     | ±9.6                   |
| 10721 | AAC | IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle)  | WLAN  | 8.76     | ±9.6                   |
| 10722 | AAC | IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle)  | WLAN  | 8.55     | ±9.6                   |
| 10723 | AAC | IEEE 802.11ax (80 MHz, MCS4, 90pc duty cycle)  | WLAN  | 8.70     | ±9.6                   |
| 10724 | AAC | IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle)  | WLAN  | 8.90     | ±9.6                   |
| 10725 | AAC | IEEE 802.11ax (80 MHz, MCS6, 90pc duty cycle)  | WLAN  | 8.74     | ±9.6                   |
| 10726 | AAC | IEEE 802.11ax (80 MHz, MCS7, 90pc duty cycle)  | WLAN  | 8.72     | ±9.6                   |
| 10727 | AAC | IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)  | WLAN  | 8.66     | ±9.6                   |
| 10728 | AAC | IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle)  | WLAN  | 8.65     | ±9.6                   |
| 10729 | AAC | IEEE 802.11ax (80 MHz, MCS10, 90pc duty cycle) | WLAN  | 8.64     | ±9.6                   |
| 10730 | AAC | IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle) | WLAN  | 8.67     | ±9.6                   |
| 10731 | AAC | IEEE 802.11ax (80 MHz, MCS0, 99pc duty cycle)  | WLAN  | 8.42     | ±9.6                   |
| 10732 | AAC | IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)  | WLAN  | 8.46     | ±9.6                   |
| 10733 | AAC | IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)  | WLAN  | 8.40     | ±9.6                   |
| 10734 | AAC | IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)  | WLAN  | 8.25     | ±9.6                   |
| 10735 | AAC | IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)  | WLAN  | 8.33     | ±9.6                   |
| 10736 | AAC | IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle)  | WLAN  | 8.27     | ±9.6                   |
| 10737 | AAC | IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)  | WLAN  | 8.36     | ±9.6                   |
| 10738 | AAC | IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)  | WLAN  | 8.42     | ±9.6                   |
| 10739 | AAC | IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10740 | AAC | IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)  | WLAN  | 8.48     | ±9.6                   |
| 10741 | AAC | IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle) | WLAN  | 8.40     | ±9.6                   |
| 10742 | AAC | IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle) | WLAN  | 8.43     | ±9.6                   |
| 10743 | AAC | IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle) | WLAN  | 8.94     | ±9.6                   |
| 10744 | AAC | IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle) | WLAN  | 9.16     | ±9.6                   |
| 10745 | AAC | IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle) | WLAN  | 8.93     | ±9.6                   |
| 10746 | AAC | IEEE 802.11ax (160 MHz, MCS3, 90pc duty cycle) | WLAN  | 9.11     | ±9.6                   |
| 10747 | AAC | IEEE 802.11ax (160 MHz, MCS4, 90pc duty cycle) | WLAN  | 9.04     | ±9.6                   |
| 10748 | AAC | IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle) | WLAN  | 8.93     | ±9.6                   |
| 10749 | AAC | IEEE 802.11ax (160 MHz, MCS6, 90pc duty cycle) | WLAN  | 8.90     | ±9.6                   |
| 10750 | AAC | IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle) | WLAN  | 8.79     | ±9.6                   |
| 10751 | AAC | IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycle) | WLAN  | 8.82     | ±9.6                   |
| 10752 | AAC | IEEE 802.11ax (160 MHz, MCS9, 90pc duty cycle) | WLAN  | 8.81     | ±9.6                   |

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| UID   | Rev | Communication System Name                       | Group         | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|-------------------------------------------------|---------------|----------|------------------------|
| 10753 | AAC | IEEE 802.11ax (160 MHz, MCS10, 90pc duty cycle) | WLAN          | 9.00     | ±9.6                   |
| 10754 | AAC | IEEE 802.11ax (160 MHz, MCS11, 90pc duty cycle) | WLAN          | 8.94     | ±9.6                   |
| 10755 | AAC | IEEE 802.11ax (160 MHz, MCS0, 99pc duty cycle)  | WLAN          | 8.64     | ±9.6                   |
| 10756 | AAC | IEEE 802.11ax (160 MHz, MCS1, 99pc duty cycle)  | WLAN          | 8.77     | ±9.6                   |
| 10757 | AAC | IEEE 802.11ax (160 MHz, MCS2, 99pc duty cycle)  | WLAN          | 8.77     | ±9.6                   |
| 10758 | AAC | IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle)  | WLAN          | 8.69     | ±9.6                   |
| 10759 | AAC | IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle)  | WLAN          | 8.58     | ±9.6                   |
| 10760 | AAC | IEEE 802.11ax (160 MHz, MCS5, 99pc duty cycle)  | WLAN          | 8.49     | ±9.6                   |
| 10761 | AAC | IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle)  | WLAN          | 8.58     | ±9.6                   |
| 10762 | AAC | IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycle)  | WLAN          | 8.49     | ±9.6                   |
| 10763 | AAC | IEEE 802.11ax (160 MHz, MCS8, 99pc duty cycle)  | WLAN          | 8.53     | ±9.6                   |
| 10764 | AAC | IEEE 802.11ax (160 MHz, MCS9, 99pc duty cycle)  | WLAN          | 8.54     | ±9.6                   |
| 10765 | AAC | IEEE 802.11ax (160 MHz, MCS10, 99pc duty cycle) | WLAN          | 8.54     | ±9.6                   |
| 10766 | AAC | IEEE 802.11ax (160 MHz, MCS11, 99pc duty cycle) | WLAN          | 8.51     | ±9.6                   |
| 10767 | AAG | 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)      | 5G NR FR1 TDD | 7.99     | ±9.6                   |
| 10768 | AAE | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.01     | ±9.6                   |
| 10769 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.01     | ±9.6                   |
| 10770 | AAE | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.02     | ±9.6                   |
| 10771 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.02     | ±9.6                   |
| 10772 | AAE | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.23     | ±9.6                   |
| 10773 | AAF | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.03     | ±9.6                   |
| 10774 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.02     | ±9.6                   |
| 10775 | AAF | 5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)    | 5G NR FR1 TDD | 8.31     | ±9.6                   |
| 10776 | AAE | 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.30     | ±9.6                   |
| 10777 | AAC | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.30     | ±9.6                   |
| 10778 | AAE | 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10779 | AAC | 5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.42     | ±9.6                   |
| 10780 | AAE | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.38     | ±9.6                   |
| 10781 | AAF | 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.38     | ±9.6                   |
| 10782 | AAE | 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.43     | ±9.6                   |
| 10783 | AAG | 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.31     | ±9.6                   |
| 10784 | AAE | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.29     | ±9.6                   |
| 10785 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.40     | ±9.6                   |
| 10786 | AAE | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10787 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.44     | ±9.6                   |
| 10788 | AAE | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.39     | ±9.6                   |
| 10789 | AAF | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10790 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.39     | ±9.6                   |
| 10791 | AAG | 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 7.83     | ±9.6                   |
| 10792 | AAE | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.92     | ±9.6                   |
| 10793 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.95     | ±9.6                   |
| 10794 | AAE | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.82     | ±9.6                   |
| 10795 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.84     | ±9.6                   |
| 10796 | AAE | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.82     | ±9.6                   |
| 10797 | AAF | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 8.01     | ±9.6                   |
| 10798 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.89     | ±9.6                   |
| 10799 | AAF | 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.93     | ±9.6                   |
| 10801 | AAF | 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.89     | ±9.6                   |
| 10802 | AAE | 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.87     | ±9.6                   |
| 10803 | AAF | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 7.93     | ±9.6                   |
| 10805 | AAE | 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10806 | AAD | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10809 | AAE | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10810 | AAF | 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10812 | AAF | 5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10817 | AAG | 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10818 | AAE | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10819 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.33     | ±9.6                   |
| 10820 | AAE | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.30     | ±9.6                   |
| 10821 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10822 | AAE | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10823 | AAF | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.36     | ±9.6                   |
| 10824 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.39     | ±9.6                   |
| 10825 | AAF | 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10827 | AAF | 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.42     | ±9.6                   |
| 10828 | AAE | 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.43     | ±9.6                   |

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| UID   | Rev | Communication System Name                            | Group         | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|------------------------------------------------------|---------------|----------|------------------------|
| 10829 | AAF | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 8.40     | ±9.6                   |
| 10830 | AAE | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.63     | ±9.6                   |
| 10831 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.73     | ±9.6                   |
| 10832 | AAE | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.74     | ±9.6                   |
| 10833 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.70     | ±9.6                   |
| 10834 | AAE | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.75     | ±9.6                   |
| 10835 | AAF | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.70     | ±9.6                   |
| 10836 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.66     | ±9.6                   |
| 10837 | AAF | 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.68     | ±9.6                   |
| 10839 | AAF | 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.70     | ±9.6                   |
| 10840 | AAE | 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.67     | ±9.6                   |
| 10841 | AAF | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         | 5G NR FR1 TDD | 7.71     | ±9.6                   |
| 10843 | AAD | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)        | 5G NR FR1 TDD | 8.49     | ±9.6                   |
| 10844 | AAE | 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)        | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10846 | AAE | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)        | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10854 | AAE | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10855 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.36     | ±9.6                   |
| 10856 | AAE | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10857 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10858 | AAE | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.36     | ±9.6                   |
| 10859 | AAF | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10860 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10861 | AAF | 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.40     | ±9.6                   |
| 10863 | AAF | 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10864 | AAE | 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10865 | AAF | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)      | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10866 | AAF | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10868 | AAF | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.89     | ±9.6                   |
| 10869 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)     | 5G NR FR2 TDD | 5.75     | ±9.6                   |
| 10870 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)  | 5G NR FR2 TDD | 5.86     | ±9.6                   |
| 10871 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)    | 5G NR FR2 TDD | 5.75     | ±9.6                   |
| 10872 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 6.52     | ±9.6                   |
| 10873 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)    | 5G NR FR2 TDD | 6.61     | ±9.6                   |
| 10874 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 6.65     | ±9.6                   |
| 10875 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)        | 5G NR FR2 TDD | 7.78     | ±9.6                   |
| 10876 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)     | 5G NR FR2 TDD | 8.39     | ±9.6                   |
| 10877 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)       | 5G NR FR2 TDD | 7.95     | ±9.6                   |
| 10878 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)    | 5G NR FR2 TDD | 8.41     | ±9.6                   |
| 10879 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)       | 5G NR FR2 TDD | 8.12     | ±9.6                   |
| 10880 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)    | 5G NR FR2 TDD | 8.38     | ±9.6                   |
| 10881 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)      | 5G NR FR2 TDD | 5.75     | ±9.6                   |
| 10882 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)   | 5G NR FR2 TDD | 5.96     | ±9.6                   |
| 10883 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)     | 5G NR FR2 TDD | 6.57     | ±9.6                   |
| 10884 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)  | 5G NR FR2 TDD | 6.53     | ±9.6                   |
| 10885 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)     | 5G NR FR2 TDD | 6.61     | ±9.6                   |
| 10886 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)  | 5G NR FR2 TDD | 6.85     | ±9.6                   |
| 10887 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)         | 5G NR FR2 TDD | 7.78     | ±9.6                   |
| 10888 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)      | 5G NR FR2 TDD | 8.35     | ±9.6                   |
| 10889 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)        | 5G NR FR2 TDD | 8.02     | ±9.6                   |
| 10890 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)     | 5G NR FR2 TDD | 8.40     | ±9.6                   |
| 10891 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)        | 5G NR FR2 TDD | 8.13     | ±9.6                   |
| 10892 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)     | 5G NR FR2 TDD | 8.41     | ±9.6                   |
| 10897 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)        | 5G NR FR1 TDD | 5.66     | ±9.6                   |
| 10898 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.67     | ±9.6                   |
| 10899 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.67     | ±9.6                   |
| 10900 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10901 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10902 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10903 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10904 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10905 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10906 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10907 | AAE | 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 5.78     | ±9.6                   |
| 10908 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 5.93     | ±9.6                   |
| 10909 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 5.96     | ±9.6                   |
| 10910 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 5.83     | ±9.6                   |

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April 15, 2025

| UID   | Rev | Communication System Name                           | Group         | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|-----------------------------------------------------|---------------|----------|------------------------|
| 10911 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.93     | ±9.6                   |
| 10912 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10913 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10914 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.85     | ±9.6                   |
| 10915 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.83     | ±9.6                   |
| 10916 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.87     | ±9.6                   |
| 10917 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.94     | ±9.6                   |
| 10918 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.86     | ±9.6                   |
| 10919 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.86     | ±9.6                   |
| 10920 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.87     | ±9.6                   |
| 10921 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10922 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.82     | ±9.6                   |
| 10923 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10924 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10925 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.95     | ±9.6                   |
| 10926 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10927 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.94     | ±9.6                   |
| 10928 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)       | 5G NR FR1 FDD | 5.52     | ±9.6                   |
| 10929 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.52     | ±9.6                   |
| 10930 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.52     | ±9.6                   |
| 10931 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10932 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10933 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10934 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10935 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10936 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)     | 5G NR FR1 FDD | 5.90     | ±9.6                   |
| 10937 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.77     | ±9.6                   |
| 10938 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.90     | ±9.6                   |
| 10939 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.82     | ±9.6                   |
| 10940 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.89     | ±9.6                   |
| 10941 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.83     | ±9.6                   |
| 10942 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.85     | ±9.6                   |
| 10943 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.95     | ±9.6                   |
| 10944 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.81     | ±9.6                   |
| 10945 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.85     | ±9.6                   |
| 10946 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.83     | ±9.6                   |
| 10947 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.87     | ±9.6                   |
| 10948 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.94     | ±9.6                   |
| 10949 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.87     | ±9.6                   |
| 10950 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.94     | ±9.6                   |
| 10951 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.92     | ±9.6                   |
| 10952 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)   | 5G NR FR1 FDD | 8.25     | ±9.6                   |
| 10953 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 FDD | 8.15     | ±9.6                   |
| 10954 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 FDD | 8.23     | ±9.6                   |
| 10955 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 FDD | 8.42     | ±9.6                   |
| 10956 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)   | 5G NR FR1 FDD | 8.14     | ±9.6                   |
| 10957 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 FDD | 8.31     | ±9.6                   |
| 10958 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 FDD | 8.61     | ±9.6                   |
| 10959 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 FDD | 8.33     | ±9.6                   |
| 10960 | AAE | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)   | 5G NR FR1 TDD | 9.32     | ±9.6                   |
| 10961 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 TDD | 9.36     | ±9.6                   |
| 10962 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 TDD | 9.40     | ±9.6                   |
| 10963 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 TDD | 9.55     | ±9.6                   |
| 10964 | AAE | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)   | 5G NR FR1 TDD | 9.29     | ±9.6                   |
| 10965 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 TDD | 9.37     | ±9.6                   |
| 10966 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 TDD | 9.55     | ±9.6                   |
| 10967 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 TDD | 9.42     | ±9.6                   |
| 10968 | AAD | 5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.49     | ±9.6                   |
| 10972 | AAC | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         | 5G NR FR1 TDD | 11.59    | ±9.6                   |
| 10973 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 9.06     | ±9.6                   |
| 10974 | AAD | 5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)  | 5G NR FR1 TDD | 10.28    | ±9.6                   |
| 10978 | AAA | ULLA BDR                                            | ULLA          | 1.16     | ±9.6                   |
| 10979 | AAA | ULLA HDR4                                           | ULLA          | 8.58     | ±9.6                   |
| 10980 | AAA | ULLA HDR8                                           | ULLA          | 10.32    | ±9.6                   |
| 10981 | AAA | ULLA HDRp4                                          | ULLA          | 3.19     | ±9.6                   |
| 10982 | AAA | ULLA HDRp8                                          | ULLA          | 3.43     | ±9.6                   |

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April 15, 2025

| UID   | Rev | Communication System Name                          | Group         | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|----------------------------------------------------|---------------|----------|------------------------|
| 10983 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.31     | ±9.6                   |
| 10984 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.42     | ±9.6                   |
| 10985 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.54     | ±9.6                   |
| 10986 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.50     | ±9.6                   |
| 10987 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.53     | ±9.6                   |
| 10988 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.38     | ±9.6                   |
| 10989 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.33     | ±9.6                   |
| 10990 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.52     | ±9.6                   |
| 11003 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 10.24    | ±9.6                   |
| 11004 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 10.73    | ±9.6                   |
| 11005 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.70     | ±9.6                   |
| 11006 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.55     | ±9.6                   |
| 11007 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.46     | ±9.6                   |
| 11008 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.51     | ±9.6                   |
| 11009 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.76     | ±9.6                   |
| 11010 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.95     | ±9.6                   |
| 11011 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.96     | ±9.6                   |
| 11012 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.68     | ±9.6                   |
| 11013 | AAB | IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle)     | WLAN          | 8.47     | ±9.6                   |
| 11014 | AAB | IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle)     | WLAN          | 8.45     | ±9.6                   |
| 11015 | AAB | IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle)     | WLAN          | 8.44     | ±9.6                   |
| 11016 | AAB | IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle)     | WLAN          | 8.44     | ±9.6                   |
| 11017 | AAB | IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle)     | WLAN          | 8.41     | ±9.6                   |
| 11018 | AAB | IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle)     | WLAN          | 8.40     | ±9.6                   |
| 11019 | AAB | IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle)     | WLAN          | 8.29     | ±9.6                   |
| 11020 | AAB | IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)     | WLAN          | 8.27     | ±9.6                   |
| 11021 | AAB | IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle)     | WLAN          | 8.46     | ±9.6                   |
| 11022 | AAB | IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle)    | WLAN          | 8.36     | ±9.6                   |
| 11023 | AAB | IEEE 802.11be (320 MHz, MCS11, 99pc duty cycle)    | WLAN          | 8.09     | ±9.6                   |
| 11024 | AAB | IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle)    | WLAN          | 8.42     | ±9.6                   |
| 11025 | AAB | IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle)    | WLAN          | 8.37     | ±9.6                   |
| 11026 | AAB | IEEE 802.11be (320 MHz, MCS0, 99pc duty cycle)     | WLAN          | 8.39     | ±9.6                   |

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

| LIMS ID | Description               | Type/Model | Serial Number | Manufacture |
|---------|---------------------------|------------|---------------|-------------|
| 145090  | Dipole Antenna (2.45 GHz) | D2450V2    | 822           | SPEAG       |

**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

Client **UL Shonan**  
Hiratsuka, Japan

Certificate No. **D2450V2-822\_Jan25**

**CALIBRATION CERTIFICATE**

Object **D2450V2 - SN: 822**

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

Calibration date **January 7, 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   | 03-Jun-24 (No. EX3-7349_Jun24)         | Jun-25        |
| 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                                                                                                   | Krešimir Franjić | Laboratory Technician |           |
| Approved by                                                                                                     | Sven Kühn        | Technical Manager     |           |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                  |                       |           |
| Issued: January 10, 2025                                                                                        |                  |                       |           |

**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  
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%.

D2450V2 - SN: 822

January 7, 2025

### Measurement Conditions

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

|                                     |                          |                                     |
|-------------------------------------|--------------------------|-------------------------------------|
| <b>DASY Version</b>                 | DASY8 Module SAR         | 16.4.0                              |
| <b>Extrapolation</b>                | Advanced Extrapolation   |                                     |
| <b>Phantom</b>                      | Modular Flat Phantom     |                                     |
| <b>Distance Dipole Center - TSL</b> | 10 mm                    | with spacer                         |
| <b>Zoom Scan Resolution</b>         | dx, dy = 5mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| <b>Frequency</b>                    | 2450MHz $\pm$ 1MHz       |                                     |

### Head TSL parameters at 2450 MHz

The following parameters and calculations were applied.

|                                                | Temperature         | Permittivity  | Conductivity        |
|------------------------------------------------|---------------------|---------------|---------------------|
| <b>Nominal Head TSL parameters</b>             | 22.0 °C             | 39.2          | 1.80 mho/m          |
| <b>Measured Head TSL parameters</b>            | (22.0 $\pm$ 0.2) °C | 37.9 $\pm$ 6% | 1.85 mho/m $\pm$ 6% |
| <b>Head TSL temperature change during test</b> | < 0.5 °C            |               |                     |

### SAR result with Head TSL at 2450 MHz

| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b> | Condition          |                               |
|-------------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                         | 24 dBm input power | 12.9 W/kg                     |
| SAR for nominal Head TSL parameters                         | normalized to 1W   | 51.4 W/kg $\pm$ 17.0% (k = 2) |

| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b> | Condition          |                               |
|---------------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                           | 24 dBm input power | 6.05 W/kg                     |
| SAR for nominal Head TSL parameters                           | normalized to 1W   | 24.1 W/kg $\pm$ 16.5% (k = 2) |

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

**Antenna Parameters with Head TSL at 2450 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 54.1 $\Omega$ + 4.4 j $\Omega$ |
| Return Loss | -24.7 dB                       |

**General Antenna Parameters and Design**

|                                  |         |
|----------------------------------|---------|
| Electrical Delay (one direction) | 1.16 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 |
|-----------------|-------|

D2450V2 - SN: 822

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System Performance Check Report

Summary

| Dipole          | Frequency [MHz] | TSL | Power [dBm] |
|-----------------|-----------------|-----|-------------|
| D2450V2 - SN822 | 2450            | 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                 | 10                 | CW, 0-- |            | 2450, 0                         | 7.24              | 1.85                   | 37.9             |

Hardware Setup

| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-01-07    | EX3DV4 - SN7349, 2024-06-03 | DAE4lp Sn1836, 2024-10-28 |

Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS + 6p        |
| Scan Method         | Measured        |

Measurement Results

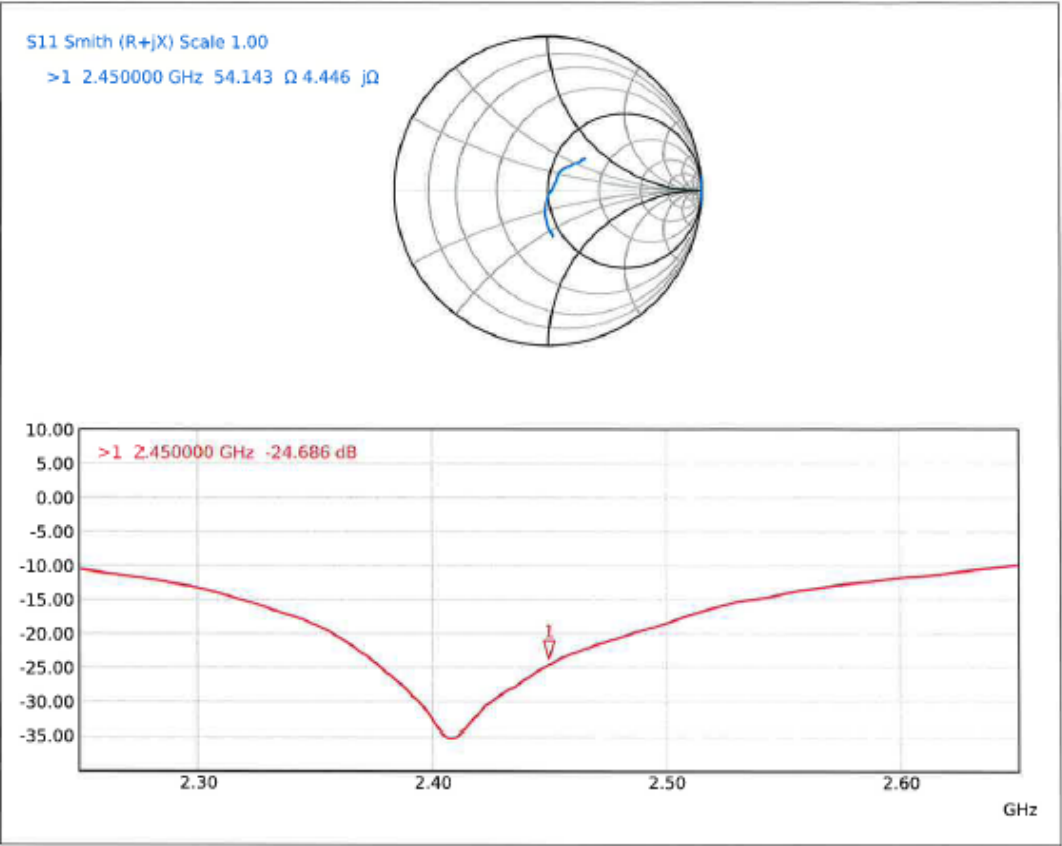
|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-01-07          |
| psSAR1g [W/Kg]      | 12.9                |
| psSAR10g [W/Kg]     | 6.05                |
| Power Drift [dB]    | 0.01                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



D2450V2 - SN: 822

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Impedance Measurement Plot for Head TSL



| LIMS ID | Description     | Type/Model  | Serial Number | Manufacture |
|---------|-----------------|-------------|---------------|-------------|
| 230872  | RF Power Source | POWERSORCE1 | 4300          | SPEAG       |

**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**

Client **UL Shonan**  
**Hiratsuka, Japan**

Certificate No. **PS1-4300\_Jan25**

## CALIBRATION CERTIFICATE

Object **POWERSOURCE1 - SE UMS 160 CB - SN: 4300**

Calibration procedure(s) **QA CAL-44.v4**  
**Calibration procedure for stabilized RF sources**

Calibration date **January 03, 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 Calibration |
|-----------------------------|------------|---------------------------------|-----------------------|
| Power meter NRP2            | SN: 104778 | 26-Mar-24 (No. 217-04036/04037) | Mar-25                |
| Power sensor NRP-Z91        | SN: 103244 | 26-Mar-24 (No. 217-04036)       | Mar-25                |
| Power sensor NRP-Z91        | SN: 103245 | 26-Mar-24 (No. 217-04037)       | Mar-25                |
| R&S FSV40 Spectrum Analyzer | SN: 101832 | 25-Jan-24 (No. 4030-315007551)  | Jan-25                |

| Secondary Standards   | ID         | Check Date (in house)             | Scheduled Check        |
|-----------------------|------------|-----------------------------------|------------------------|
| Power sensor NRP-Z91  | SN: 103650 | 13-Jul-18 (in house check Aug-24) | In house check: Aug-26 |
| Power sensor NRP-Z91  | SN: 103651 | 13-Jul-18 (in house check Aug-24) | In house check: Aug-26 |
| RF generator SMCV100B | SN: 103053 | 21-Oct-20 (in house check Aug-24) | In house check: Aug-26 |

|                                                                                                                 | Name            | Function              | Signature                |
|-----------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|--------------------------|
| Calibrated by                                                                                                   | Jeffrey Katzman | Laboratory Technician |                          |
| Approved by                                                                                                     | Sven Kühn       | Technical Manager     |                          |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                 |                       | Issued: January 03, 2025 |

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Accreditation No.: **SCS 0108**

### Glossary

CW Continuous wave  
ADC Analog to Digital Conversion value in mV

### Calibration is Performed According to the Following Standards

- Internal procedure QA CAL-44-Calibration of stabilized RF power sources

### Methods Applied and Interpretation of Parameters

- *Forward Power Calibration:* The forward power of is calibrated against the reference power meter for each frequency from -5 dBm to +17 dBm in 1 dB steps. At each calibration point the output power is compared to the reading of the reference power meter and the difference is calculated.
- The following parameters as documented in the Appendix contain technical information as a result from the acceptance test and require no uncertainty.
  - *ADC Adjustment Sets:* Adjustment Factors have been assessed for forward and reflected power during pre-calibration. At each frequency, adjustment points are recorded for different power levels; 23 points from -5 dBm to +17 dBm for forward power and 4 points from -25 dBm to +5 dBm for reflected power detector ADC values. For forward power, the level dependent conversion function is measured for each adjustment point at each frequency. For reflected power, the level dependent conversion function is calculated based on linear interpolation between the adjustment points at each frequency.
  - *Harmonic distortion:* Verification of the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> order harmonic distortion.
  - *Frequency measurement:* Verification of the POWERSOURCE nominal frequency.
  - *Power Verification:* Reflected power verification against the reference power meter.

POWERSOURCE1 - SN: 4300

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### Measurement Conditions

|                       |                              |           |
|-----------------------|------------------------------|-----------|
| Unit Type             | POWERSOURCE1 (SE UMS 160 CB) | SN: 4300  |
| Evaluation SW Version | POWERSOURCE1 Calibrator      | 1.0.0.514 |
| Firmware SW Version   | POWERSOURCE1 Firmware        | 2.016     |

### Forward Power Calibration

Forward power acceptance criteria: 95% of the calibration points shall be within < 0.25 dB (manufacturer specifications), all calibration points shall be within < 0.375 dB, corresponding to a coverage probability of 99.73%.

Uncertainty of the forward power calibration is  $\pm 0.43$  dB ( $k=2$ ).

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%.

POWERSOURCE1 - SN: 4300

January 03, 2025

| f/MHz | P <sub> fwd </sub> / dBm |       |       |       |       |       |       |       |       |       |       |
|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       | -5                       | -4    | -3    | -2    | -1    | 0     | 1     | 2     | 3     | 4     | 5     |
| 600   | -0.05                    | -0.03 | -0.05 | -0.06 | -0.05 | -0.04 | -0.05 | -0.06 | -0.04 | -0.05 | -0.05 |
| 650   | 0.00                     | -0.02 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.03 |
| 750   | 0.08                     | 0.07  | 0.07  | 0.07  | 0.07  | 0.07  | 0.08  | 0.08  | 0.07  | 0.07  | 0.07  |
| 835   | 0.06                     | 0.06  | 0.05  | 0.06  | 0.06  | 0.06  | 0.05  | 0.06  | 0.05  | 0.05  | 0.04  |
| 850   | 0.08                     | 0.06  | 0.06  | 0.07  | 0.08  | 0.06  | 0.07  | 0.05  | 0.06  | 0.05  | 0.05  |
| 900   | -0.06                    | -0.06 | -0.06 | -0.06 | -0.06 | -0.08 | -0.07 | -0.06 | -0.08 | -0.07 | -0.05 |
| 1300  | -0.07                    | -0.08 | -0.06 | -0.05 | -0.08 | -0.07 | -0.06 | -0.07 | -0.08 | -0.08 | -0.08 |
| 1450  | 0.05                     | 0.06  | 0.05  | 0.05  | 0.05  | 0.05  | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  |
| 1500  | -0.03                    | -0.02 | -0.05 | -0.04 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.03 |
| 1640  | -0.06                    | -0.04 | -0.05 | -0.05 | -0.04 | -0.05 | -0.05 | -0.05 | -0.07 | -0.06 | -0.03 |
| 1750  | 0.06                     | 0.06  | 0.07  | 0.04  | 0.04  | 0.05  | 0.05  | 0.04  | 0.05  | 0.04  | 0.04  |
| 1800  | -0.08                    | -0.08 | -0.06 | -0.08 | -0.07 | -0.06 | -0.06 | -0.07 | -0.07 | -0.08 | -0.08 |
| 1900  | -0.07                    | -0.07 | -0.08 | -0.06 | -0.06 | -0.07 | -0.07 | -0.07 | -0.07 | -0.09 | -0.06 |
| 1950  | 0.03                     | 0.05  | 0.03  | 0.03  | 0.04  | 0.05  | 0.03  | 0.03  | 0.02  | 0.05  | 0.06  |
| 2000  | -0.01                    | -0.02 | -0.01 | -0.02 | -0.01 | -0.01 | -0.01 | -0.02 | -0.01 | -0.03 | -0.02 |
| 2100  | 0.04                     | 0.03  | 0.05  | 0.01  | 0.04  | 0.06  | 0.04  | 0.02  | 0.02  | 0.03  | 0.02  |
| 2300  | -0.06                    | -0.08 | -0.06 | -0.07 | -0.07 | -0.06 | -0.05 | -0.07 | -0.06 | -0.07 | -0.07 |
| 2450  | 0.05                     | 0.04  | 0.02  | 0.04  | 0.02  | 0.01  | 0.00  | 0.03  | 0.02  | 0.02  | 0.02  |
| 2550  | -0.05                    | -0.06 | -0.05 | -0.06 | -0.05 | -0.06 | -0.05 | -0.04 | -0.06 | -0.06 | -0.04 |
| 2600  | 0.02                     | 0.03  | 0.01  | 0.02  | 0.01  | 0.02  | 0.01  | 0.02  | 0.01  | 0.03  | 0.02  |
| 3000  | 0.01                     | 0.02  | 0.02  | 0.02  | 0.03  | 0.03  | 0.01  | 0.03  | 0.03  | 0.02  | 0.03  |
| 3300  | -0.08                    | -0.05 | -0.06 | -0.06 | -0.08 | -0.07 | -0.06 | -0.07 | -0.06 | -0.07 | -0.06 |
| 3400  | -0.05                    | -0.04 | -0.04 | -0.04 | -0.03 | -0.06 | -0.05 | -0.04 | -0.03 | -0.04 | -0.04 |
| 3500  | 0.03                     | 0.05  | 0.02  | 0.03  | 0.02  | 0.04  | 0.02  | 0.05  | 0.02  | 0.02  | 0.02  |
| 3600  | 0.02                     | 0.03  | 0.02  | 0.03  | 0.03  | 0.02  | 0.02  | 0.04  | 0.02  | 0.02  | 0.03  |
| 3700  | -0.02                    | -0.01 | -0.02 | -0.02 | -0.01 | -0.02 | 0.00  | -0.02 | -0.04 | -0.03 | -0.03 |
| 3800  | -0.07                    | -0.06 | -0.05 | -0.06 | -0.04 | -0.04 | -0.05 | -0.06 | -0.07 | -0.06 | -0.05 |
| 3900  | -0.06                    | -0.04 | -0.04 | -0.05 | -0.04 | -0.07 | -0.05 | -0.04 | -0.05 | -0.05 | -0.05 |
| 4000  | 0.02                     | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.02  | 0.02  | 0.03  | 0.02  | 0.04  |
| 4100  | 0.05                     | 0.04  | 0.02  | 0.03  | 0.05  | 0.03  | 0.05  | 0.02  | 0.03  | 0.04  | 0.03  |
| 4200  | -0.02                    | -0.01 | -0.01 | -0.01 | -0.03 | -0.01 | -0.04 | -0.03 | -0.02 | -0.01 | -0.02 |
| 4300  | -0.04                    | -0.07 | -0.05 | -0.05 | -0.04 | -0.06 | -0.06 | -0.06 | -0.06 | -0.07 | -0.06 |
| 4400  | -0.04                    | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.05 | -0.06 | -0.05 | -0.02 | -0.04 |
| 4500  | 0.03                     | 0.01  | 0.04  | 0.03  | 0.02  | 0.02  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  |
| 4600  | 0.04                     | 0.03  | 0.03  | 0.03  | 0.04  | 0.03  | 0.04  | 0.03  | 0.05  | 0.02  | 0.03  |
| 4700  | -0.03                    | -0.01 | -0.03 | -0.01 | -0.03 | -0.03 | -0.03 | -0.02 | -0.03 | -0.01 | -0.02 |
| 4800  | -0.06                    | -0.06 | -0.05 | -0.06 | -0.06 | -0.03 | -0.07 | -0.06 | -0.05 | -0.06 | -0.04 |
| 4900  | -0.06                    | -0.05 | -0.06 | -0.05 | -0.04 | -0.05 | -0.06 | -0.06 | -0.06 | -0.04 | -0.06 |
| 5000  | 0.02                     | 0.03  | 0.03  | 0.02  | 0.03  | 0.03  | 0.03  | 0.02  | 0.01  | 0.04  | 0.02  |
| 5200  | 0.00                     | 0.00  | 0.00  | -0.01 | -0.02 | -0.00 | -0.01 | 0.01  | 0.00  | 0.00  | 0.01  |
| 5250  | 0.01                     | 0.02  | 0.03  | 0.03  | 0.01  | 0.01  | 0.01  | 0.02  | 0.02  | 0.02  | 0.01  |
| 5300  | -0.04                    | -0.04 | -0.05 | -0.05 | -0.05 | -0.04 | -0.06 | -0.05 | -0.06 | -0.04 | -0.05 |
| 5400  | -0.05                    | -0.06 | -0.06 | -0.06 | -0.05 | -0.06 | -0.06 | -0.05 | -0.06 | -0.07 | -0.05 |
| 5500  | 0.02                     | 0.02  | 0.02  | 0.01  | 0.02  | 0.01  | 0.03  | 0.03  | 0.02  | 0.02  | 0.01  |
| 5600  | 0.03                     | 0.04  | 0.04  | 0.03  | 0.03  | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  | 0.03  |
| 5750  | 0.00                     | 0.00  | 0.01  | -0.01 | 0.01  | -0.00 | 0.00  | 0.00  | 0.00  | 0.00  | -0.01 |
| 5800  | -0.04                    | -0.05 | -0.05 | -0.05 | -0.04 | -0.05 | -0.04 | -0.05 | -0.04 | -0.05 | -0.06 |
| 5850  | 0.04                     | 0.04  | 0.04  | 0.02  | 0.03  | 0.05  | 0.04  | 0.04  | 0.04  | 0.06  | 0.03  |

Table 1: Forward power calibration results from -5 dBm to +5 dBm. Shown is the deviation (in dB) from the reference power meter.

POWERSOURCE1 - SN: 4300

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| f/MHz | P <sub>avg</sub> / dBm |       |       |       |       |       |       |       |       |       |       |       |
|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       | 6                      | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    |
| 600   | -0.05                  | -0.04 | -0.06 | -0.04 | -0.04 | -0.05 | -0.06 | -0.04 | -0.05 | -0.09 | -0.07 | -0.10 |
| 650   | -0.02                  | -0.03 | -0.02 | -0.02 | -0.05 | -0.04 | -0.05 | -0.03 | -0.02 | -0.01 | -0.04 | -0.03 |
| 750   | 0.07                   | 0.07  | 0.07  | 0.05  | 0.08  | 0.06  | 0.06  | 0.07  | 0.05  | 0.08  | 0.05  | -0.01 |
| 835   | 0.05                   | 0.06  | 0.05  | 0.06  | 0.05  | 0.03  | 0.05  | 0.06  | 0.04  | 0.05  | 0.04  | -0.01 |
| 850   | 0.08                   | 0.08  | 0.06  | 0.06  | 0.06  | 0.06  | 0.06  | 0.05  | 0.06  | 0.03  | 0.04  | -0.02 |
| 900   | -0.07                  | -0.08 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.08 | -0.07 | -0.08 | -0.07 | -0.01 |
| 1300  | -0.09                  | -0.08 | -0.07 | -0.08 | -0.08 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.09 | 0.01  |
| 1450  | 0.04                   | 0.03  | 0.05  | 0.04  | 0.05  | 0.05  | 0.06  | 0.04  | 0.03  | 0.00  | 0.07  | -0.02 |
| 1500  | -0.03                  | -0.04 | -0.02 | -0.04 | -0.04 | -0.04 | -0.03 | -0.03 | -0.01 | -0.03 | -0.02 | -0.04 |
| 1640  | -0.05                  | -0.05 | -0.04 | -0.06 | -0.04 | -0.06 | -0.05 | -0.05 | -0.05 | -0.06 | -0.01 | -0.01 |
| 1750  | 0.06                   | 0.05  | 0.06  | 0.05  | 0.05  | 0.06  | 0.07  | 0.06  | 0.05  | 0.04  | 0.03  | 0.00  |
| 1800  | -0.09                  | -0.08 | -0.07 | -0.09 | -0.05 | -0.07 | -0.08 | -0.08 | -0.12 | -0.08 | -0.06 | -0.01 |
| 1900  | -0.08                  | -0.06 | -0.06 | -0.07 | -0.08 | -0.07 | -0.06 | -0.10 | -0.10 | -0.06 | -0.02 | -0.01 |
| 1950  | 0.04                   | 0.04  | 0.03  | 0.04  | 0.02  | 0.03  | 0.03  | 0.03  | 0.05  | 0.06  | 0.03  | -0.03 |
| 2000  | -0.02                  | -0.02 | -0.01 | 0.00  | -0.02 | -0.03 | 0.00  | -0.02 | 0.00  | -0.03 | 0.01  | -0.03 |
| 2100  | 0.04                   | 0.03  | 0.02  | 0.05  | 0.04  | 0.03  | 0.04  | 0.04  | 0.02  | 0.01  | 0.02  | 0.02  |
| 2300  | -0.08                  | -0.06 | -0.06 | -0.06 | -0.07 | -0.06 | -0.07 | -0.07 | -0.06 | -0.06 | -0.06 | -0.03 |
| 2450  | 0.03                   | 0.03  | 0.02  | 0.02  | 0.02  | 0.03  | 0.02  | 0.04  | 0.03  | -0.01 | 0.03  | -0.02 |
| 2550  | -0.07                  | -0.06 | -0.04 | -0.07 | -0.07 | -0.07 | -0.05 | -0.08 | -0.09 | -0.05 | -0.11 | 0.01  |
| 2600  | 0.01                   | 0.00  | 0.01  | 0.03  | 0.02  | 0.03  | 0.01  | 0.02  | 0.01  | 0.02  | 0.04  | -0.02 |
| 3000  | 0.03                   | 0.00  | 0.03  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.00  | 0.05  | 0.01  | -0.03 |
| 3300  | -0.06                  | -0.06 | -0.07 | -0.07 | -0.06 | -0.08 | -0.07 | -0.06 | -0.05 | -0.13 | -0.06 | -0.01 |
| 3400  | -0.07                  | -0.03 | -0.05 | -0.05 | -0.04 | -0.05 | -0.04 | -0.06 | -0.07 | -0.04 | -0.04 | -0.03 |
| 3500  | 0.02                   | 0.01  | 0.02  | 0.02  | 0.04  | 0.05  | 0.04  | 0.02  | 0.03  | -0.02 | 0.04  | -0.01 |
| 3600  | 0.01                   | 0.03  | 0.03  | 0.03  | 0.04  | 0.03  | 0.02  | 0.03  | 0.01  | 0.00  | 0.04  | -0.02 |
| 3700  | 0.01                   | -0.01 | -0.02 | -0.02 | -0.03 | -0.01 | -0.03 | -0.02 | -0.03 | -0.06 | -0.03 | 0.00  |
| 3800  | -0.04                  | -0.06 | -0.04 | -0.07 | -0.06 | -0.06 | -0.06 | -0.07 | -0.06 | -0.08 | -0.05 | -0.01 |
| 3900  | -0.04                  | -0.05 | -0.06 | -0.04 | -0.04 | -0.05 | -0.05 | -0.06 | -0.08 | -0.06 | -0.03 | -0.02 |
| 4000  | 0.02                   | 0.02  | 0.03  | 0.03  | 0.02  | 0.03  | 0.01  | 0.02  | 0.00  | 0.03  | 0.03  | -0.02 |
| 4100  | 0.04                   | 0.02  | 0.03  | 0.02  | 0.03  | 0.03  | 0.04  | 0.04  | 0.04  | 0.01  | 0.04  | -0.02 |
| 4200  | -0.01                  | -0.03 | -0.01 | -0.02 | -0.01 | -0.03 | -0.01 | -0.01 | -0.03 | -0.02 | -0.04 | 0.01  |
| 4300  | -0.06                  | -0.05 | -0.05 | -0.05 | -0.05 | -0.06 | -0.05 | -0.05 | -0.05 | -0.03 | -0.09 | 0.00  |
| 4400  | -0.04                  | -0.06 | -0.04 | -0.04 | -0.05 | -0.05 | -0.03 | -0.04 | -0.05 | -0.06 | -0.07 | -0.02 |
| 4500  | 0.03                   | 0.03  | 0.04  | 0.02  | 0.02  | 0.04  | 0.03  | 0.03  | 0.01  | -0.03 | 0.02  | -0.01 |
| 4600  | 0.04                   | 0.05  | 0.02  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.04  | 0.05  | 0.02  | 0.00  |
| 4700  | -0.03                  | -0.03 | -0.03 | -0.01 | -0.02 | -0.01 | -0.01 | -0.01 | 0.00  | -0.01 | -0.02 | 0.00  |
| 4800  | -0.05                  | -0.06 | -0.06 | -0.04 | -0.06 | -0.06 | -0.06 | -0.07 | -0.05 | -0.10 | -0.08 | -0.02 |
| 4900  | -0.04                  | -0.04 | -0.06 | -0.06 | -0.05 | -0.06 | -0.07 | -0.05 | -0.04 | -0.03 | -0.10 | 0.01  |
| 5000  | 0.03                   | 0.03  | 0.01  | 0.02  | 0.01  | 0.03  | 0.02  | 0.01  | 0.02  | 0.03  | 0.03  | -0.02 |
| 5200  | 0.00                   | -0.01 | 0.01  | 0.00  | 0.01  | 0.00  | -0.01 | 0.00  | -0.04 | -0.03 | -0.01 | -0.03 |
| 5250  | 0.01                   | 0.02  | 0.02  | 0.01  | 0.02  | 0.03  | 0.02  | 0.01  | 0.03  | 0.08  | 0.00  | -0.02 |
| 5300  | -0.05                  | -0.06 | -0.05 | -0.03 | -0.06 | -0.05 | -0.05 | -0.06 | -0.04 | -0.11 | -0.05 | -0.02 |
| 5400  | -0.05                  | -0.05 | -0.06 | -0.06 | -0.06 | -0.06 | -0.06 | -0.04 | -0.05 | -0.06 | -0.08 | -0.01 |
| 5500  | 0.02                   | 0.03  | 0.02  | 0.01  | 0.02  | 0.01  | 0.02  | -0.02 | 0.02  | -0.01 | 0.03  | 0.01  |
| 5600  | 0.05                   | 0.02  | 0.04  | 0.05  | 0.04  | 0.03  | 0.05  | 0.05  | 0.05  | 0.00  | 0.00  | -0.02 |
| 5750  | 0.00                   | 0.01  | 0.00  | 0.02  | 0.00  | 0.00  | 0.01  | 0.00  | 0.01  | -0.05 | -0.03 | -0.01 |
| 5800  | -0.04                  | -0.05 | -0.06 | -0.04 | -0.03 | -0.07 | -0.06 | -0.09 | -0.01 | -0.08 | -0.03 | -0.01 |
| 5850  | 0.04                   | 0.05  | 0.04  | 0.04  | 0.03  | 0.04  | 0.04  | 0.05  | 0.04  | 0.04  | 0.03  | -0.01 |

Table 2: Forward power calibration results from +6 dBm to +17 dBm. Shown is the deviation (in dB) from the reference power meter.

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January 03, 2025

## Appendix: Additional assessments outside the scope of SCS108

### Additional EUT Data

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

### ADC Adjustment Points

|                                  |                                  |
|----------------------------------|----------------------------------|
| Forward ADC Calibration Points   | -5 dB to 17 dB in 1 dB steps     |
| Reflected ADC Calibration Points | -25 dBm, -15 dBm, -5 dBm, +5 dBm |

### Harmonic Distortion

|                                           |                |
|-------------------------------------------|----------------|
| Frequency Range                           | 600 - 6000 MHz |
| Output Power                              | 16 dBm         |
| 2 <sup>nd</sup> Harmonic distortion (max) | < - 20 dBc     |
| 3 <sup>rd</sup> Harmonic distortion (max) | < - 20 dBc     |
| 4 <sup>th</sup> Harmonic distortion (max) | < - 20 dBc     |

### Frequency Measurement

|                                |                |
|--------------------------------|----------------|
| Frequency Range                | 600 - 6000 MHz |
| Deviation to nominal frequency | < 1 MHz        |

### Reflected Power Verification

|                            |                    |
|----------------------------|--------------------|
| Frequency Range            | 600 - 6000 MHz     |
| Power levels               | -20 dBm ... +5 dBm |
| Deviation to nominal power | < 0.5 dBm (k=2)    |

-End of report-