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VERITAS



# FCC SAR Test Report

Report No. : PSZ-NQN2511190110SA02

Applicant : Marshall Group AB

Address : Centralplan 15 111 20 Stockholm Sweden

Manufacturer : Marshall Group AB

Address : Centralplan 15 111 20 Stockholm Sweden

Product : PORTABLE LOUDSPEAKER

FCC ID : 2BBQK-STOCKIII

Brand : Marshall

Model No. : STOCKWELL III

Standards : FCC 47 CFR Part 2 (2.1093) / IEEE C95.1:1992 / IEEE 1528:2013  
KDB 865664 D01 v01r04 / KDB 865664 D02 v01r02 / KDB 447498 D04 v01

Date of Testing : Nov. 17, 2025

FCC Designation No. : CN1325      FCC Site Registration No. : 434559

**CERTIFICATION:** The above equipment has been tested by Huarui 7layers High Technology (Suzhou) Co., Ltd., and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by A2LA or any government agencies.

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Appendix B. SAR Plots of SAR Measurement

Appendix C. Calibration Certificate for Probe and Dipole

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## Release Control Record

| Report No.            | Reason for Change | Date Issued   |
|-----------------------|-------------------|---------------|
| PSZ-NQN2511190110SA02 | Initial release   | Nov. 19, 2025 |
|                       |                   |               |
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## 1. Summary of Maximum SAR Value

| Equipment Class | Mode      | Highest Reported Body SAR <sub>1g</sub><br>(0 cm Gap)<br>(W/kg) |
|-----------------|-----------|-----------------------------------------------------------------|
| DSS             | Bluetooth | 0.05                                                            |
| DTS             | BLE       | 0.03                                                            |

**Note:**

1. The SAR limit (**Head & Body: SAR<sub>1g</sub> 1.6 W/kg**) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.



## 2. Description of Equipment Under Test

|                                                        |                                               |
|--------------------------------------------------------|-----------------------------------------------|
| <b>EUT Type</b>                                        | PORTABLE LOUDSPEAKER                          |
| <b>FCC ID</b>                                          | 2BBQK-STOCKIII                                |
| <b>Brand Name</b>                                      | Marshall                                      |
| <b>Model Name</b>                                      | STOCKWELL III                                 |
| <b>HW Version</b>                                      | Product PP1, AB1585 Module board V02          |
| <b>SW Version</b>                                      | 0.1.0                                         |
| <b>Tx Frequency Bands<br/>(Unit: MHz)</b>              | Bluetooth : 2402 ~ 2480                       |
| <b>Uplink Modulations</b>                              | Bluetooth : GFSK, $\pi/4$ -DQPSK, 8DPSK       |
| <b>Maximum Tune-up Conducted Power<br/>(Unit: dBm)</b> | Please refer to section 4.5.1 of this report. |
| <b>Antenna Type</b>                                    | PCB Antenna                                   |
| <b>EUT Stage</b>                                       | Identical Prototype                           |

**Note:**

1. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

### 3. SAR Measurement System

#### 3.1 Definition of Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

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

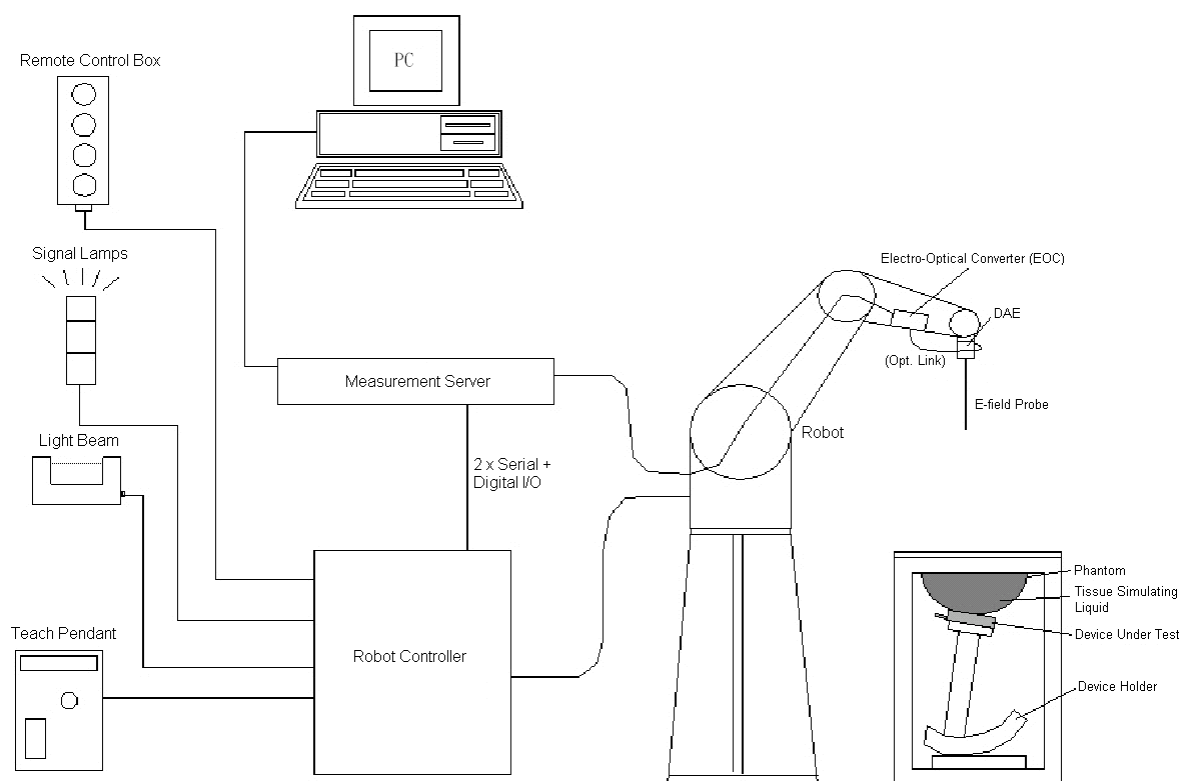
SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

#### 3.2 SPEAG DASY System

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.



**Fig-3.1 DASY System Setup**

### 3.2.1 Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

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



**Fig-3.2 DASY**

### 3.2.2 Probes

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

|                      |                                                                                                                                                          |                                                                                     |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Model</b>         | EX3DV4                                                                                                                                                   |  |
| <b>Construction</b>  | Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). |                                                                                     |
| <b>Frequency</b>     | 10 MHz to 6 GHz<br>Linearity: $\pm 0.2$ dB                                                                                                               |                                                                                     |
| <b>Directivity</b>   | $\pm 0.3$ dB in HSL (rotation around probe axis)<br>$\pm 0.5$ dB in tissue material (rotation normal to probe axis)                                      |                                                                                     |
| <b>Dynamic Range</b> | 10 $\mu$ W/g to 100 mW/g<br>Linearity: $\pm 0.2$ dB (noise: typically $< 1$ $\mu$ W/g)                                                                   |                                                                                     |
| <b>Dimensions</b>    | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm                     |                                                                                     |

|                      |                                                                                                                                                                               |                                                                                      |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Model</b>         | ES3DV3                                                                                                                                                                        |  |
| <b>Construction</b>  | Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). |                                                                                      |
| <b>Frequency</b>     | 10 MHz to 4 GHz<br>Linearity: $\pm 0.2$ dB                                                                                                                                    |                                                                                      |
| <b>Directivity</b>   | $\pm 0.2$ dB in HSL (rotation around probe axis)<br>$\pm 0.3$ dB in tissue material (rotation normal to probe axis)                                                           |                                                                                      |
| <b>Dynamic Range</b> | 5 $\mu$ W/g to 100 mW/g<br>Linearity: $\pm 0.2$ dB                                                                                                                            |                                                                                      |
| <b>Dimensions</b>    | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 3.9 mm (Body: 12 mm)<br>Distance from probe tip to dipole centers: 2.0 mm                                                |                                                                                      |

### 3.2.3 Data Acquisition Electronics (DAE)

|                             |                                                                                                                                                                                                                                                     |                                                                                       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Model</b>                | DAE3, DAE4                                                                                                                                                                                                                                          |  |
| <b>Construction</b>         | Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop. |                                                                                       |
| <b>Measurement Range</b>    | -100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)                                                                                                                                                                              |                                                                                       |
| <b>Input Offset Voltage</b> | $< 5\mu$ V (with auto zero)                                                                                                                                                                                                                         |                                                                                       |
| <b>Input Bias Current</b>   | $< 50$ fA                                                                                                                                                                                                                                           |                                                                                       |
| <b>Dimensions</b>           | 60 x 60 x 68 mm                                                                                                                                                                                                                                     |                                                                                       |

### 3.2.4 Phantoms

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

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

## 3.2.5 Device Holder

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Model</b>        | Mounting Device                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| <b>Construction</b> | In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). |                                                                                     |
| <b>Material</b>     | POM                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |

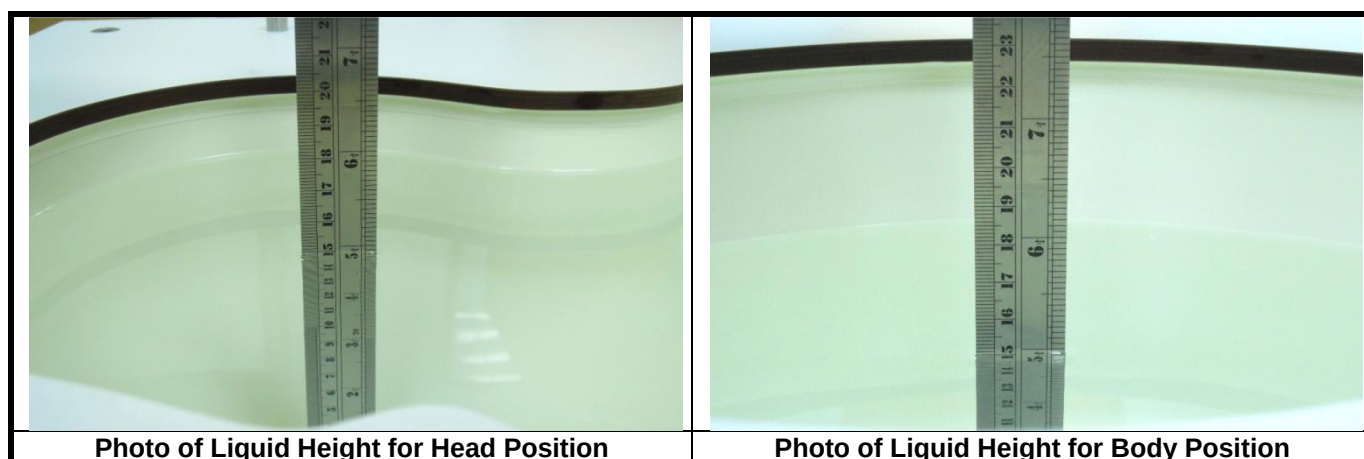
|                     |                                                                                                                                                                                                                                                                                         |                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Model</b>        | Laptop Extensions Kit                                                                                                                                                                                                                                                                   |  |
| <b>Construction</b> | Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner. |                                                                                     |
| <b>Material</b>     | POM, Acrylic glass, Foam                                                                                                                                                                                                                                                                |                                                                                     |

## 3.2.6 System Validation Dipoles

|                         |                                                                                                                                                                      |                                                                                       |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Model</b>            | D-Serial                                                                                                                                                             |  |
| <b>Construction</b>     | Symmetrical dipole with 1/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions. |                                                                                       |
| <b>Frequency</b>        | 750 MHz to 5800 MHz                                                                                                                                                  |                                                                                       |
| <b>Return Loss</b>      | > 20 dB                                                                                                                                                              |                                                                                       |
| <b>Power Capability</b> | > 100 W ( $f < 1\text{GHz}$ ), > 40 W ( $f > 1\text{GHz}$ )                                                                                                          |                                                                                       |

### 3.2.7 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.



The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

**Table-3.1 Targets of Tissue Simulating Liquid**

| Frequency (MHz) | Target Permittivity | Range of $\pm 5\%$ | Target Conductivity | Range of $\pm 5\%$ |
|-----------------|---------------------|--------------------|---------------------|--------------------|
| <b>For Head</b> |                     |                    |                     |                    |
| 750             | 41.9                | 39.8 ~ 44.0        | 0.89                | 0.85 ~ 0.93        |
| 835             | 41.5                | 39.4 ~ 43.6        | 0.90                | 0.86 ~ 0.95        |
| 900             | 41.5                | 39.4 ~ 43.6        | 0.97                | 0.92 ~ 1.02        |
| 1450            | 40.5                | 38.5 ~ 42.5        | 1.20                | 1.14 ~ 1.26        |
| 1640            | 40.3                | 38.3 ~ 42.3        | 1.29                | 1.23 ~ 1.35        |
| 1750            | 40.1                | 38.1 ~ 42.1        | 1.37                | 1.30 ~ 1.44        |
| 1800            | 40.0                | 38.0 ~ 42.0        | 1.40                | 1.33 ~ 1.47        |
| 1900            | 40.0                | 38.0 ~ 42.0        | 1.40                | 1.33 ~ 1.47        |
| 2000            | 40.0                | 38.0 ~ 42.0        | 1.40                | 1.33 ~ 1.47        |
| 2300            | 39.5                | 37.5 ~ 41.5        | 1.67                | 1.59 ~ 1.75        |
| 2450            | 39.2                | 37.2 ~ 41.2        | 1.80                | 1.71 ~ 1.89        |
| 2600            | 39.0                | 37.1 ~ 41.0        | 1.96                | 1.86 ~ 2.06        |
| 3500            | 37.9                | 36.0 ~ 39.8        | 2.91                | 2.76 ~ 3.06        |
| 5200            | 36.0                | 34.2 ~ 37.8        | 4.66                | 4.43 ~ 4.89        |
| 5300            | 35.9                | 34.1 ~ 37.7        | 4.76                | 4.52 ~ 5.00        |
| 5500            | 35.6                | 33.8 ~ 37.4        | 4.96                | 4.71 ~ 5.21        |
| 5600            | 35.5                | 33.7 ~ 37.3        | 5.07                | 4.82 ~ 5.32        |
| 5800            | 35.3                | 33.5 ~ 37.1        | 5.27                | 5.01 ~ 5.53        |



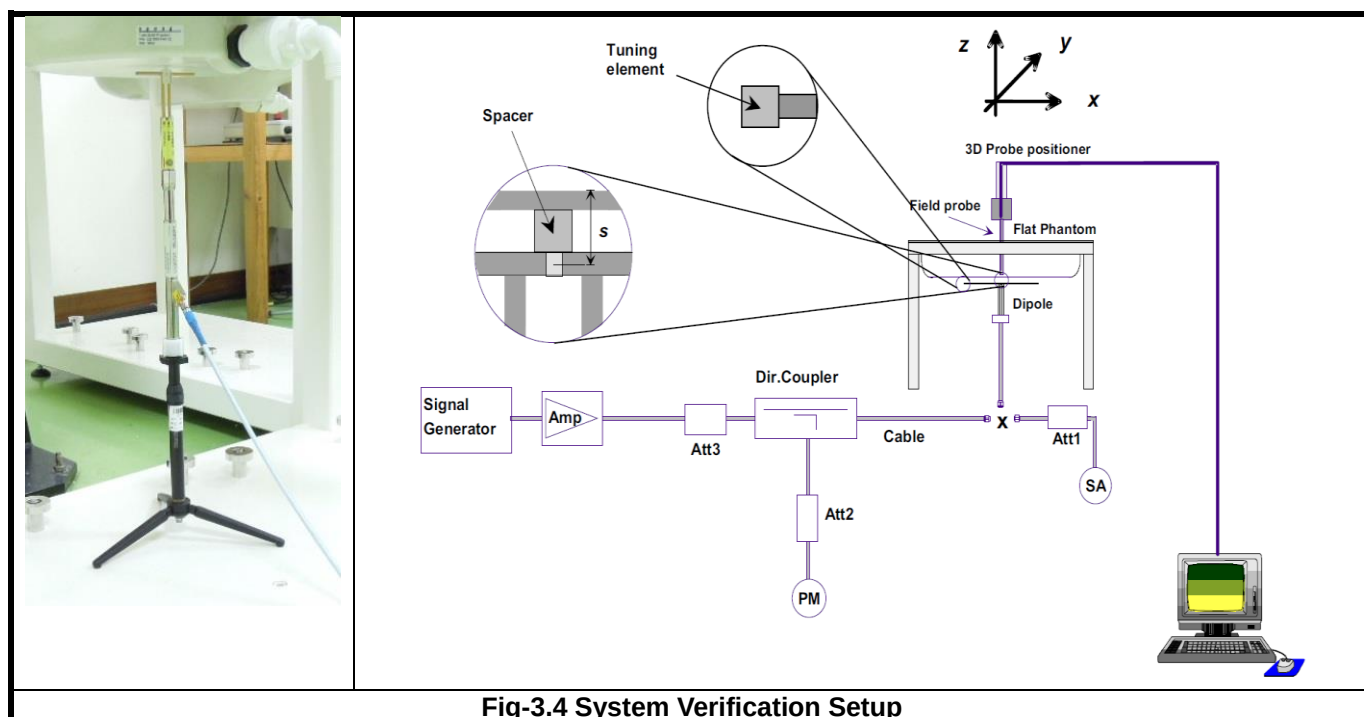
The following table gives the recipes for tissue simulating liquids.

**Table-3.2 Recipes of Tissue Simulating Liquid**

| Tissue Type | Bactericide | DGBE | HEC | NaCl | Sucrose | Triton X-100 | Water | Diethylene Glycol Mono-hexylether |
|-------------|-------------|------|-----|------|---------|--------------|-------|-----------------------------------|
| H750        | 0.2         | -    | 0.2 | 1.5  | 56.0    | -            | 42.1  | -                                 |
| H835        | 0.2         | -    | 0.2 | 1.5  | 57.0    | -            | 41.1  | -                                 |
| H900        | 0.2         | -    | 0.2 | 1.4  | 58.0    | -            | 40.2  | -                                 |
| H1450       | -           | 43.3 | -   | 0.6  | -       | -            | 56.1  | -                                 |
| H1640       | -           | 45.8 | -   | 0.5  | -       | -            | 53.7  | -                                 |
| H1750       | -           | 47.0 | -   | 0.4  | -       | -            | 52.6  | -                                 |
| H1800       | -           | 44.5 | -   | 0.3  | -       | -            | 55.2  | -                                 |
| H1900       | -           | 44.5 | -   | 0.2  | -       | -            | 55.3  | -                                 |
| H2000       | -           | 44.5 | -   | 0.1  | -       | -            | 55.4  | -                                 |
| H2300       | -           | 44.9 | -   | 0.1  | -       | -            | 55.0  | -                                 |
| H2450       | -           | 45.0 | -   | 0.1  | -       | -            | 54.9  | -                                 |
| H2600       | -           | 45.1 | -   | 0.1  | -       | -            | 54.8  | -                                 |
| H3500       | -           | 8.0  | -   | 0.2  | -       | 20.0         | 71.8  | -                                 |
| H5G         | -           | -    | -   | -    | -       | 17.2         | 65.5  | 17.3                              |

### 3.3 SAR System Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.



**Fig-3.4 System Verification Setup**

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

### 3.4 SAR Measurement Procedure

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

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

- (a) Make EUT to transmit maximum output power
- (b) Measure conducted output power through RF cable
- (c) Place the EUT in the specific position of phantom
- (d) Perform SAR testing steps on the DASY system
- (e) Record the SAR value

#### 3.4.1 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to IEC/IEEE 62209-1528, the resolution for Area and Zoom scan is specified in the table below.

| Items                              | $\leq 2$ GHz | 2-3 GHz      | 3-4 GHz      | 4-5 GHz      | 5-6 GHz      |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|
| Area Scan ( $\Delta x, \Delta y$ ) | $\leq 15$ mm | $\leq 12$ mm | $\leq 12$ mm | $\leq 10$ mm | $\leq 10$ mm |
| Zoom Scan ( $\Delta x, \Delta y$ ) | $\leq 8$ mm  | $\leq 5$ mm  | $\leq 5$ mm  | $\leq 4$ mm  | $\leq 4$ mm  |
| Zoom Scan ( $\Delta z$ )           | $\leq 5$ mm  | $\leq 5$ mm  | $\leq 4$ mm  | $\leq 3$ mm  | $\leq 2$ mm  |
| Zoom Scan Volume                   | $\geq 30$ mm | $\geq 30$ mm | $\geq 28$ mm | $\geq 25$ mm | $\geq 22$ mm |

**Note:**

When zoom scan is required and report SAR is  $\leq 1.4$  W/kg, the zoom scan resolution of  $\Delta x / \Delta y$  (2-3GHz:  $\leq 8$  mm, 3-4GHz:  $\leq 7$  mm, 4-6GHz:  $\leq 5$  mm) may be applied.

#### 3.4.2 Volume Scan Procedure

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

### 3.4.3 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

### 3.4.4 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

### 3.4.5 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.



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## 4. SAR Measurement Evaluation

### 4.1 EUT Configuration and Setting

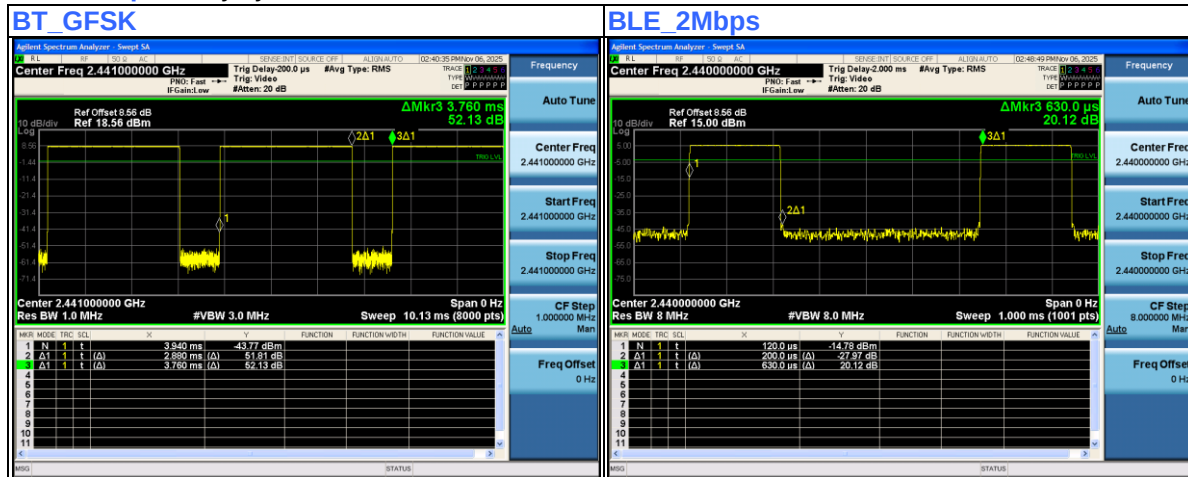
#### <Considerations Related to Bluetooth for Setup and Testing>

This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

#### <Duty Cycle of Test Signal>

**BT\_GFSK:** Duty cycle =  $2.880 / 3.760 * 100 = 76.60\%$

**BLE\_2Mbps:** Duty cycle =  $0.200 / 0.630 * 100 = 31.75\%$



**Note:** Bluetooth SAR scaling need further consideration, and the theoretical maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation.

### 4.2 EUT Testing Position

#### 4.2.1 Body Exposure Conditions

This EUT was tested for all the close to the human body of intended use surfaces of the EUT. The separation distance between this EUT and phantom is 0 cm.



### 4.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

| Test Date     | Tissue Type | Frequency (MHz) | Liquid Temp. (°C) | Measured Conductivity ( $\sigma$ ) | Measured Permittivity ( $\epsilon_r$ ) | Target Conductivity ( $\sigma$ ) | Target Permittivity ( $\epsilon_r$ ) | Conductivity Deviation (%) | Permittivity Deviation (%) |
|---------------|-------------|-----------------|-------------------|------------------------------------|----------------------------------------|----------------------------------|--------------------------------------|----------------------------|----------------------------|
| Nov. 17, 2025 | HSL         | 2450            | 23.6              | 1.841                              | 40.127                                 | 1.80                             | 39.20                                | 2.28                       | 2.36                       |

**Note:**

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within  $\pm 5\%$  of the target values. Liquid temperature during the SAR testing must be within  $\pm 2^\circ\text{C}$ .

### 4.4 System Verification

The measuring result for system verification is tabulated as below.

<1g>

| Test Date     | Mode | Input Power (mW) | Frequency (MHz) | 1W Target SAR-1g (W/kg) | Measured SAR-1g (W/kg) | Normalized to 1W SAR-1g (W/kg) | Deviation (%) | Dipole S/N | Probe S/N | DAE S/N |
|---------------|------|------------------|-----------------|-------------------------|------------------------|--------------------------------|---------------|------------|-----------|---------|
| Nov. 17, 2025 | HSL  | 100              | 2450            | 53.10                   | 5.390                  | 53.90                          | 1.51          | 893        | 7612      | 1389    |

<10g>

| Test Date     | Mode | Input Power (mW) | Frequency (MHz) | 1W Target SAR-10g (W/kg) | Measured SAR-10g (W/kg) | Normalized to 1W SAR-10g (W/kg) | Deviation (%) | Dipole S/N | Probe S/N | DAE S/N |
|---------------|------|------------------|-----------------|--------------------------|-------------------------|---------------------------------|---------------|------------|-----------|---------|
| Nov. 17, 2025 | HSL  | 100              | 2450            | 24.90                    | 2.470                   | 24.70                           | -0.80         | 893        | 7612      | 1389    |

**Note:**

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.



## 4.5 Maximum Output Power

### 4.5.1 Maximum Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

| Bluetooth |         |                 |                     |
|-----------|---------|-----------------|---------------------|
| Mode      | Channel | Frequency (MHz) | Tune up limit (dBm) |
| GFSK      | 0       | 2402            | 9.50                |
|           | 39      | 2441            | 9.50                |
|           | 78      | 2480            | 9.50                |
| DQPSK     | 0       | 2402            | 9.50                |
|           | 39      | 2441            | 9.50                |
|           | 78      | 2480            | 9.50                |
| 8DPSK     | 0       | 2402            | 9.50                |
|           | 39      | 2441            | 9.50                |
|           | 78      | 2480            | 9.50                |
| BLE 1Mbps | 0       | 2402            | 6.50                |
|           | 19      | 2440            | 6.50                |
|           | 39      | 2480            | 6.50                |
| BLE 2Mbps | 1       | 2404            | 6.50                |
|           | 19      | 2440            | 6.50                |
|           | 38      | 2478            | 6.50                |

### 4.5.2 Measured Conducted Power Result

The measuring conducted average power (Unit: dBm) is shown as below.

| Bluetooth |         |                 |                     |
|-----------|---------|-----------------|---------------------|
| Mode      | Channel | Frequency (MHz) | Average power (dBm) |
| GFSK      | 0       | 2402            | 8.81                |
|           | 39      | 2441            | 8.40                |
|           | 78      | 2480            | 8.30                |
| DQPSK     | 0       | 2402            | 8.55                |
|           | 39      | 2441            | 8.10                |
|           | 78      | 2480            | 8.01                |
| 8DPSK     | 0       | 2402            | 8.59                |
|           | 39      | 2441            | 8.31                |
|           | 78      | 2480            | 8.23                |
| BLE 1Mbps | 0       | 2402            | 5.71                |
|           | 19      | 2440            | 5.30                |
|           | 39      | 2480            | 5.20                |
| BLE 2Mbps | 1       | 2404            | 5.76                |
|           | 19      | 2440            | 5.23                |
|           | 38      | 2478            | 5.10                |



## 4.6 SAR Testing Results

### 4.6.1 SAR Test Reduction Considerations

#### <KDB 447498 D04, General RF Exposure Guidance>

- Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:
  - $\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
  - $\leq 0.6$  W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
  - $\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz
- Per KDB 447498 D04v01, the scaled SAR is the measured SAR value adjusted for maximum tune-up tolerance.
  - For BT: Scaled SAR(W/kg) = Measured SAR(W/kg) \* Duty Cycle Scaling Factor \* Tune-up Scaling Factor

### 4.6.2 SAR Results for Body Exposure Condition (Separation Distance is 0 cm Gap)

| Plot No. | Band      | Mode   | Test Position | Separation Distance (cm) | Ch. | Duty Cycle % | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Tune-up Scaling Factor | Duty Cycle Scaling Factor | Scaled SAR-1g (W/kg) |
|----------|-----------|--------|---------------|--------------------------|-----|--------------|--------------------------|--------------------------------|------------------|------------------------|------------------------|---------------------------|----------------------|
|          | Bluetooth | GFSK   | Front Face    | 0cm                      | 0   | 76.60        | 9.50                     | 8.81                           | -                | 0.000                  | 1.172                  | 1.305                     | 0.00                 |
|          | Bluetooth | GFSK   | Rear Face     | 0cm                      | 0   | 76.60        | 9.50                     | 8.81                           | 0.09             | 0.002                  | 1.172                  | 1.305                     | 0.00                 |
|          | Bluetooth | GFSK   | Left Side     | 0cm                      | 0   | 76.60        | 9.50                     | 8.81                           | 0.01             | 0.006                  | 1.172                  | 1.305                     | 0.01                 |
|          | Bluetooth | GFSK   | Right Side    | 0cm                      | 0   | 76.60        | 9.50                     | 8.81                           | 0.18             | 0.028                  | 1.172                  | 1.305                     | 0.04                 |
|          | Bluetooth | GFSK   | Top Side      | 0cm                      | 0   | 76.60        | 9.50                     | 8.81                           | 0.14             | 0.008                  | 1.172                  | 1.305                     | 0.01                 |
|          | Bluetooth | GFSK   | Bottom Side   | 0cm                      | 0   | 76.60        | 9.50                     | 8.81                           | -                | 0.000                  | 1.172                  | 1.305                     | 0.00                 |
|          | Bluetooth | GFSK   | Right Side    | 0cm                      | 39  | 76.60        | 9.50                     | 8.40                           | 0.13             | 0.029                  | 1.288                  | 1.305                     | 0.05                 |
| P01      | Bluetooth | GFSK   | Right Side    | 0cm                      | 78  | 76.60        | 9.50                     | 8.30                           | 0.16             | 0.028                  | 1.318                  | 1.305                     | 0.05                 |
|          | Bluetooth | BLE 2M | Right Side    | 0cm                      | 1   | 31.75        | 6.50                     | 5.76                           | 0.16             | 0.007                  | 1.186                  | 3.150                     | 0.03                 |
| P02      | Bluetooth | BLE 2M | Right Side    | 0cm                      | 19  | 31.75        | 6.50                     | 5.23                           | 0.18             | 0.008                  | 1.340                  | 3.150                     | 0.03                 |
|          | Bluetooth | BLE 2M | Right Side    | 0cm                      | 38  | 31.75        | 6.50                     | 5.10                           | -0.14            | 0.007                  | 1.380                  | 3.150                     | 0.03                 |

#### Note:

- Bluetooth and BLE have the same technology and modulation. Therefore, BLE SAR testing was performed in the worst position from Bluetooth.

**Test Engineer** : Renjie Liu, and Zixiao Xia.



## 5. Calibration of Test Equipment

| Equipment                    | Manufacturer  | Model           | SN            | Cal. Date     | Due Data      |
|------------------------------|---------------|-----------------|---------------|---------------|---------------|
| System Validation Dipole     | SPEAG         | D2450V2         | 893           | Jun. 15, 2024 | Jun. 13, 2026 |
| Dosimetric E-Field Probe     | SPEAG         | EX3DV4          | 7612          | May. 07, 2025 | May. 06, 2026 |
| Data Acquisition Electronics | SPEAG         | DAE4            | 1288          | Jul. 17, 2025 | Jul. 16, 2026 |
| Magnetic Field Probe         | SPEAG         | DAK-3.5         | 1119          | Feb. 24, 2025 | Feb. 23, 2026 |
| Radio Communication Analyzer | Rohde&Schwarz | CMW500          | 166205        | Jun. 30, 2025 | Jun. 29, 2026 |
| ENA Series Network Analyzer  | Agilent       | E5071C          | MY46214638    | Jun. 30, 2025 | Jun. 29, 2026 |
| Power Meter                  | Agilent       | N1914A          | MY52180044    | Jul. 01, 2025 | Jun. 30, 2026 |
| Power Sensor                 | Agilent       | E9304A H18      | MY52050010    | Jul. 01, 2025 | Jun. 30, 2026 |
| Power Sensor                 | Agilent       | E9304A H18      | MY52050011    | Jul. 01, 2025 | Jun. 30, 2026 |
| Temp. & Humi. Recorder       | HUATO         | A2000TH         | HE20107712    | Jul. 01, 2025 | Jun. 30, 2026 |
| Digital Thermometer          | LINE SEIKI    | DTM3000-spezial | 3798          | Jul. 16, 2025 | Jul. 15, 2026 |
| Attenuator 1                 | Weinschel     | 3M-10           | 25691         | Jun. 30, 2025 | Jun. 29, 2026 |
| DC Block                     | Joinfront     | JFDCB-18G-SMA   | 2100033922-03 |               | NA            |
| Coupler                      | Woken         | 0110A056020-10  | COM27RW1A3    |               | NA            |
| Power Amplifier              | Mimi-Circuits | ZVE-8G+         | 523101139     |               | NA            |

### Note:

- Referring to KDB 865664 D01 v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipole are also not physically damaged, or repaired during the interval. The dipole justification can be found in appendix C.  
The return loss is  $< -20\text{dB}$ , within 20% of prior calibration, the impedance is with 5ohm of prior calibration.



## 6. Measurement Uncertainty

| <b>DASY Uncertainty Budget</b><br>According to IEEE 1528-2013 and IEC 62209-1/2016<br>(0.3 - 3 GHz range) |                        |             |         |         |          |                                |                                 |           |
|-----------------------------------------------------------------------------------------------------------|------------------------|-------------|---------|---------|----------|--------------------------------|---------------------------------|-----------|
| Error Description                                                                                         | Uncertainty Value (±%) | Probability | Divisor | (Ci) 1g | (Ci) 10g | Standard Uncertainty (1g) (±%) | Standard Uncertainty (10g) (±%) | (Vi) Veff |
| <b>Measurement System</b>                                                                                 |                        |             |         |         |          |                                |                                 |           |
| Probe Calibration                                                                                         | 6.05                   | N           | 1       | 1       | 1        | 6.1                            | 6.1                             | ∞         |
| Axial Isotropy                                                                                            | 4.7                    | R           | 1.732   | 0.7     | 0.7      | 1.9                            | 1.9                             | ∞         |
| Hemispherical Isotropy                                                                                    | 9.6                    | R           | 1.732   | 0.7     | 0.7      | 3.9                            | 3.9                             | ∞         |
| Boundary Effects                                                                                          | 2.0                    | R           | 1.732   | 1       | 1        | 1.2                            | 1.2                             | ∞         |
| Linearity                                                                                                 | 4.7                    | R           | 1.732   | 1       | 1        | 2.7                            | 2.7                             | ∞         |
| System Detection Limits                                                                                   | 1.0                    | R           | 1.732   | 1       | 1        | 0.6                            | 0.6                             | ∞         |
| Modulation Response                                                                                       | 3.2                    | R           | 1.732   | 1       | 1        | 1.8                            | 1.8                             | ∞         |
| Readout Electronics                                                                                       | 0.3                    | N           | 1       | 1       | 1        | 0.3                            | 0.3                             | ∞         |
| Response Time                                                                                             | 0.0                    | R           | 1.732   | 1       | 1        | 0.0                            | 0.0                             | ∞         |
| Integration Time                                                                                          | 2.6                    | R           | 1.732   | 1       | 1        | 1.5                            | 1.5                             | ∞         |
| RF Ambient Noise                                                                                          | 3.0                    | R           | 1.732   | 1       | 1        | 1.7                            | 1.7                             | ∞         |
| RF Ambient Reflections                                                                                    | 3.0                    | R           | 1.732   | 1       | 1        | 1.7                            | 1.7                             | ∞         |
| Probe Positioner                                                                                          | 0.4                    | R           | 1.732   | 1       | 1        | 0.2                            | 0.2                             | ∞         |
| Probe Positioning                                                                                         | 6.7                    | R           | 1.732   | 1       | 1        | 3.9                            | 3.9                             | ∞         |
| Max. SAR Eval.                                                                                            | 4.0                    | R           | 1.732   | 1       | 1        | 2.3                            | 2.3                             | ∞         |
| <b>Test Sample Related</b>                                                                                |                        |             |         |         |          |                                |                                 |           |
| Device Positioning                                                                                        | 4.0                    | N           | 1       | 1       | 1        | 4.0                            | 4.0                             | 35        |
| Device Holder                                                                                             | 4.9                    | N           | 1       | 1       | 1        | 4.9                            | 4.9                             | 12        |
| Power Drift                                                                                               | 5.0                    | R           | 1.732   | 1       | 1        | 2.9                            | 2.9                             | ∞         |
| Power Scaling                                                                                             | 0.0                    | R           | 1.732   | 1       | 1        | 0.0                            | 0.0                             | ∞         |
| <b>Phantom and Setup</b>                                                                                  |                        |             |         |         |          |                                |                                 |           |
| Phantom Uncertainty                                                                                       | 6.6                    | R           | 1.732   | 1       | 1        | 3.8                            | 3.8                             | ∞         |
| SAR correction                                                                                            | 0.0                    | R           | 1.732   | 1       | 0.84     | 0.0                            | 0.0                             | ∞         |
| Liquid Conductivity Repeatability                                                                         | 0.14                   | N           | 1       | 0.78    | 0.71     | 0.1                            | 0.1                             | 5         |
| Liquid Conductivity (target)                                                                              | 10.0                   | R           | 1.732   | 0.78    | 0.71     | 4.5                            | 4.1                             | ∞         |
| Liquid Conductivity (mea.)                                                                                | 2.5                    | R           | 1.732   | 0.78    | 0.71     | 1.1                            | 1.0                             | ∞         |
| Temp. unc. - Conductivity                                                                                 | 2.61                   | R           | 1.732   | 0.78    | 0.71     | 1.2                            | 1.1                             | ∞         |
| Liquid Permittivity Repeatability                                                                         | 0.03                   | N           | 1       | 0.23    | 0.26     | 0.0                            | 0.0                             | 5         |
| Liquid Permittivity (target)                                                                              | 10.0                   | R           | 1.732   | 0.23    | 0.26     | 1.3                            | 1.5                             | ∞         |
| Liquid Permittivity (mea.)                                                                                | 2.5                    | R           | 1.732   | 0.23    | 0.26     | 0.3                            | 0.4                             | ∞         |
| Temp. unc. - Permittivity                                                                                 | 1.78                   | R           | 1.732   | 0.23    | 0.26     | 0.2                            | 0.3                             | ∞         |
| <b>Combined Std. Uncertainty</b>                                                                          |                        |             |         |         |          | 13.6%                          | 13.5%                           | 578       |
| <b>Coverage Factor for 95 %</b>                                                                           |                        |             |         |         |          | K=2                            | K=2                             |           |
| <b>Expanded STD Uncertainty</b>                                                                           |                        |             |         |         |          | 27.2%                          | 26.9%                           |           |

**Uncertainty budget for frequency range 300 MHz to 3 GHz**

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| DASY Uncertainty Budget<br>According to IEC 62209-2/2010<br>(30 MHz - 6 GHz range) |                        |             |         |         |          |                                |                                 |           |
|------------------------------------------------------------------------------------|------------------------|-------------|---------|---------|----------|--------------------------------|---------------------------------|-----------|
| Error Description                                                                  | Uncertainty Value (±%) | Probability | Divisor | (Ci) 1g | (Ci) 10g | Standard Uncertainty (1g) (±%) | Standard Uncertainty (10g) (±%) | (Vi) Veff |
| <b>Measurement System</b>                                                          |                        |             |         |         |          |                                |                                 |           |
| Probe Calibration                                                                  | 6.65                   | N           | 1       | 1       | 1        | 6.7                            | 6.7                             | ∞         |
| Axial Isotropy                                                                     | 4.7                    | R           | 1.732   | 0.7     | 0.7      | 1.9                            | 1.9                             | ∞         |
| Hemispherical Isotropy                                                             | 9.6                    | R           | 1.732   | 0.7     | 0.7      | 3.9                            | 3.9                             | ∞         |
| Boundary Effects                                                                   | 2.0                    | R           | 1.732   | 1       | 1        | 1.2                            | 1.2                             | ∞         |
| Linearity                                                                          | 4.7                    | R           | 1.732   | 1       | 1        | 2.7                            | 2.7                             | ∞         |
| System Detection Limits                                                            | 1.0                    | R           | 1.732   | 1       | 1        | 0.6                            | 0.6                             | ∞         |
| Modulation Response                                                                | 3.2                    | R           | 1.732   | 1       | 1        | 1.8                            | 1.8                             | ∞         |
| Readout Electronics                                                                | 0.3                    | N           | 1       | 1       | 1        | 0.3                            | 0.3                             | ∞         |
| Response Time                                                                      | 0.0                    | R           | 1.732   | 1       | 1        | 0.0                            | 0.0                             | ∞         |
| Integration Time                                                                   | 2.6                    | R           | 1.732   | 1       | 1        | 1.5                            | 1.5                             | ∞         |
| RF Ambient Noise                                                                   | 3.0                    | R           | 1.732   | 1       | 1        | 1.7                            | 1.7                             | ∞         |
| RF Ambient Reflections                                                             | 3.0                    | R           | 1.732   | 1       | 1        | 1.7                            | 1.7                             | ∞         |
| Probe Positioner                                                                   | 0.4                    | R           | 1.732   | 1       | 1        | 0.2                            | 0.2                             | ∞         |
| Probe Positioning                                                                  | 6.7                    | R           | 1.732   | 1       | 1        | 3.9                            | 3.9                             | ∞         |
| Max. SAR Eval.                                                                     | 4.0                    | R           | 1.732   | 1       | 1        | 2.3                            | 2.3                             | ∞         |
| <b>Test Sample Related</b>                                                         |                        |             |         |         |          |                                |                                 |           |
| Device Positioning                                                                 | 4.3                    | N           | 1       | 1       | 1        | 4.3                            | 4.3                             | 35        |
| Device Holder                                                                      | 4.9                    | N           | 1       | 1       | 1        | 4.9                            | 4.9                             | 12        |
| Power Drift                                                                        | 5.0                    | R           | 1.732   | 1       | 1        | 2.9                            | 2.9                             | ∞         |
| Power Scaling                                                                      | 0.0                    | R           | 1.732   | 1       | 1        | 0.0                            | 0.0                             | ∞         |
| <b>Phantom and Setup</b>                                                           |                        |             |         |         |          |                                |                                 |           |
| Phantom Uncertainty                                                                | 6.6                    | R           | 1.732   | 1       | 1        | 3.8                            | 3.8                             | ∞         |
| SAR correction                                                                     | 0.0                    | R           | 1.732   | 1       | 0.84     | 0.0                            | 0.0                             | ∞         |
| Liquid Conductivity Repeatability                                                  | 0.16                   | N           | 1       | 0.78    | 0.71     | 0.1                            | 0.1                             | 5         |
| Liquid Conductivity (target)                                                       | 10.0                   | R           | 1.732   | 0.78    | 0.71     | 4.5                            | 4.1                             | ∞         |
| Liquid Conductivity (mea.)                                                         | 2.5                    | R           | 1.732   | 0.78    | 0.71     | 1.1                            | 1.0                             | ∞         |
| Temp. unc. - Conductivity                                                          | 3.64                   | R           | 1.732   | 0.78    | 0.71     | 1.6                            | 1.5                             | ∞         |
| Liquid Permittivity Repeatability                                                  | 0.08                   | N           | 1       | 0.23    | 0.26     | 0.0                            | 0.0                             | 5         |
| Liquid Permittivity (target)                                                       | 10.0                   | R           | 1.732   | 0.23    | 0.26     | 1.3                            | 1.5                             | ∞         |
| Liquid Permittivity (mea.)                                                         | 2.5                    | R           | 1.732   | 0.23    | 0.26     | 0.3                            | 0.4                             | ∞         |
| Temp. unc. - Permittivity                                                          | 1.78                   | R           | 1.732   | 0.23    | 0.26     | 0.2                            | 0.3                             | ∞         |
| <b>Combined Std. Uncertainty</b>                                                   |                        |             |         |         |          | 14.0%                          | 13.9%                           | 624       |
| <b>Coverage Factor for 95 %</b>                                                    |                        |             |         |         |          | K=2                            | K=2                             |           |
| <b>Expanded STD Uncertainty</b>                                                    |                        |             |         |         |          | 28.0%                          | 27.7%                           |           |

Uncertainty budget for frequency range 30 MHz to 6 GHz



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### **7. Information on the Testing Laboratories**

We, Huarui 7layers High Technology (Suzhou) Co., Ltd., were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation.

If you have any comments, please feel free to contact us at the following:

Add: Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province

Tel: [+86 \(0557\) 368 1008](tel:+86(0557)3681008)

The road map of all our labs can be found in our web site also

Web: <http://www.7Layers.com>

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## Appendix A. SAR Plots of System Verification

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



## Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR  $> 1.5$  W/kg are shown as follows.

## Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.



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## Appendix D. Photographs of EUT and Setup