

Yoto Ltd.

# TEST REPORT

**SCOPE OF WORK**

FCC TESTING— YM3

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## SAR TEST REPORT

*For*

Yoto Ltd.

Product Description: Yoto Mini V2

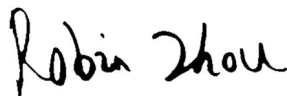
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Model No.: YM3

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Issue Date: 27 July 2026

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27 July 2026

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## Table of Contents

|                                                                    |                                                               |           |
|--------------------------------------------------------------------|---------------------------------------------------------------|-----------|
| <b>1.</b>                                                          | <b>GENERAL INFORMATION.....</b>                               | <b>3</b>  |
| <b>2.</b>                                                          | <b>STATEMENT OF COMPLIANCE .....</b>                          | <b>4</b>  |
| <b>3.</b>                                                          | <b>EQUIPMENT UNDER TEST (EUT) TECHNICAL DESCRIPTION .....</b> | <b>5</b>  |
| <b>4.</b>                                                          | <b>AUXILIARY EQUIPMENT DETAILS.....</b>                       | <b>6</b>  |
| <b>5.</b>                                                          | <b>TEST FACILITY .....</b>                                    | <b>6</b>  |
| <b>6.</b>                                                          | <b>GUIDANCE STANDARD .....</b>                                | <b>7</b>  |
| <b>7.</b>                                                          | <b>EUT ANTENNA LOCATIONS.....</b>                             | <b>8</b>  |
| <b>8.</b>                                                          | <b>RF EXPOSURE .....</b>                                      | <b>11</b> |
| 8.1                                                                | LIMITS.....                                                   | 11        |
| <b>9.</b>                                                          | <b>SPECIFIC ABSORPTION RATE (SAR) .....</b>                   | <b>12</b> |
| 9.1                                                                | INTRODUCTION .....                                            | 12        |
| 9.2                                                                | SAR DEFINITION.....                                           | 12        |
| <b>10.</b>                                                         | <b>SAR MEASUREMENTS SYSTEM CONFIGURATION.....</b>             | <b>13</b> |
| 10.1                                                               | SAR MEASUREMENT SET-UP .....                                  | 13        |
| 10.2                                                               | DASY5 E-FIELD PROBE SYSTEM.....                               | 14        |
| 10.3                                                               | E-FIELD PROBE CALIBRATION .....                               | 15        |
| 10.4                                                               | OTHER TEST EQUIPMENT .....                                    | 16        |
| 10.5                                                               | SCANNING PROCEDURE .....                                      | 18        |
| 10.6                                                               | DATA STORAGE AND EVALUATION .....                             | 21        |
| 10.7                                                               | TISSUE-EQUIVALENT LIQUID .....                                | 23        |
| 10.8                                                               | SYSTEM CHECK .....                                            | 25        |
| <b>11.</b>                                                         | <b>MEASUREMENT PROCEDURES.....</b>                            | <b>27</b> |
| 11.1                                                               | GENERAL DESCRIPTION OF TEST PROCEDURES .....                  | 27        |
| 11.2                                                               | MEASUREMENT VARIABILITY .....                                 | 29        |
| <b>12.</b>                                                         | <b>TEST RESULTS .....</b>                                     | <b>30</b> |
| 12.1                                                               | Conducted Power Results .....                                 | 30        |
| 12.2                                                               | SAR TEST RESULTS .....                                        | 35        |
| 12.3                                                               | Measurement variability consideration .....                   | 36        |
| 12.4                                                               | Simultaneous Transmission SAR Analysis.....                   | 36        |
| 12.5                                                               | MAXIMUM GRAPH RESULTS .....                                   | 36        |
| <b>13.</b>                                                         | <b>MEASUREMENT UNCERTAINTY .....</b>                          | <b>36</b> |
| <b>14.</b>                                                         | <b>MAIN TEST INSTRUMENT.....</b>                              | <b>37</b> |
| <b>ANNEX A: TEST LAYOUT AND SETUP.....</b>                         |                                                               | <b>38</b> |
| <b>ANNEX B: SYSTEM CHECK RESULTS .....</b>                         |                                                               | <b>39</b> |
| <b>ANNEX C: MAXIMUM GRAPH RESULTS .....</b>                        |                                                               | <b>44</b> |
| <b>ANNEX D: SYSTEM VALIDATION .....</b>                            |                                                               | <b>51</b> |
| <b>ANNEX E: PROBE, DAE AND DIPOLE CALIBRATION CERTIFICATE.....</b> |                                                               | <b>53</b> |

## 1. GENERAL INFORMATION

|                             |                                                              |
|-----------------------------|--------------------------------------------------------------|
| <b>Applicant:</b>           | Yoto Ltd.<br>124 City Road, London, EC1V 2NX, United Kingdom |
| <b>Manufacturer:</b>        | Yoto Ltd.<br>124 City Road, London, EC1V 2NX, United Kingdom |
| <b>Product Description:</b> | Yoto Mini V2                                                 |
| <b>Model Number:</b>        | YM3                                                          |
| <b>Sample Number:</b>       | Z251208012-002, Z251208012-003                               |
| <b>File Number:</b>         | 251208012SZN-001                                             |
| <b>Date of Test:</b>        | 17 March 2026 to 14 April 2026                               |

The above equipment was tested by Intertek Testing Services Shenzhen Ltd. Longhua Branch. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in IEC/IEEE 62209-1528:2020 and KDB 865664. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in ANSI/IEEE C95.1-1992.

The test results of this report relate only to the tested sample identified in this report.

## 2. STATEMENT OF COMPLIANCE

The Maximum reported SAR<sub>1g</sub>

| Band        | Mode    | Test Position | Channel /Frequency (MHz) | Limit SAR <sub>1g</sub> 1.6 W/kg  |                                   |
|-------------|---------|---------------|--------------------------|-----------------------------------|-----------------------------------|
|             |         |               |                          | Measured SAR <sub>1g</sub> (W/kg) | Reported SAR <sub>1g</sub> (W/kg) |
| BT          | EDR     | Top side      | 0/2402                   | 0.029                             | 0.031                             |
| BT          | BLE     | Top side      | 19/2440                  | 0.039                             | 0.042                             |
| WIFI 2.4GHz | 802.11b | Top side      | 6/2437                   | 0.726                             | <b>0.796</b>                      |
| U-NII-1     | 802.11a | Top side      | 48/5240                  | 0.670                             | 0.676                             |
| U-NII-2A    | 802.11a | Top side      | 52/5260                  | 0.410                             | 0.440                             |
| U-NII-2C    | 802.11a | Top side      | 100/5500                 | 0.370                             | 0.382                             |
| U-NII-3     | 802.11a | Top side      | 149/5745                 | 0.227                             | 0.249                             |

The SAR values found for the Yoto Mini V2 are below the maximum recommended levels of 1.6 W/kg as averaged over any 1g tissue according to the ANSI C95.1-1992. The SAR values in the table above are Body SAR.

The maximum reported SAR value is:  $0.796 + 0.042 = 0.838$  W/kg (1g).

### 3. Equipment Under Test (EUT) TECHNICAL DESCRIPTION

| Characteristics              | Description                                                                                                                                                                                 |                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Device type:                 | Portable device                                                                                                                                                                             |                                                                 |
| Exposure Category:           | Uncontrolled Environment/General Population                                                                                                                                                 |                                                                 |
| Test Mode(s):                | WiFi 2.4G (DSSS/OFDM)<br>WiFi 5G (OFDM/OFDMA)                                                                                                                                               |                                                                 |
|                              | Bluetooth (GFSK, $\pi/4$ DQPSK, 8DPSK)<br>NFC (ASK)                                                                                                                                         |                                                                 |
| Device Class:                | B                                                                                                                                                                                           |                                                                 |
| Antenna Type:                | PCB Antenna                                                                                                                                                                                 |                                                                 |
| Antenna Gain:                | Bluetooth: 2.02dBi<br>WiFi 2.4G: 2.02dBi<br>WiFi 5.0G: 4.14dBi                                                                                                                              |                                                                 |
| Operating Frequency Range(s) | Band                                                                                                                                                                                        | Frequency Rang (MHz)                                            |
|                              | BT                                                                                                                                                                                          | 2400-2483.5                                                     |
|                              | WiFi 2.4G                                                                                                                                                                                   | 2400-2483.5                                                     |
|                              | WiFi 5G                                                                                                                                                                                     | 5150MHz~5250,<br>5250MHz~5350,<br>5470MHz-5725,<br>5725MHz~5850 |
|                              | NFC                                                                                                                                                                                         | 13.56MHz                                                        |
|                              | BT (EDR): 0-39-78<br>BT (BLE) 1M: 0-19-39<br>BT (BLE) 2M: 1-19-38<br>WiFi 2.4G:<br>802.11b/g/n 20M: 1-6-11<br>WiFi 5G:<br>802.11a/n/ac/ax 20M: 36-40-48, 52-56-64, 100-116-140, 149-157-165 |                                                                 |
|                              |                                                                                                                                                                                             |                                                                 |
| Power supply:                | D.C. 3.7V with battery                                                                                                                                                                      |                                                                 |
|                              | D.C. 5V/1.5A by adaptor                                                                                                                                                                     |                                                                 |
| Product Software Version:    | v0.0.5681                                                                                                                                                                                   |                                                                 |
| Product Hardware Version:    | 07                                                                                                                                                                                          |                                                                 |

Note:

1. NA is Not Applicable
2. For more details, please refer to the User's manual of the EUT.
3. The sample under test was selected by the Client.
4. The available maximum time-averaged power of NFC is no more than 1 mW, meeting the requirements for SAR test exemption.

## 4. Auxiliary Equipment Details

| Description                  | Manufacturer                           | Description                                                                                                 |
|------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| AC Adapter                   | Ten Pao Electronics Co., Ltd.          | Model: S030AXC2000150(Input: 100-240V~,50/60Hz,1.2A Max; Output: 5V=3A, 9V=3A, 12V=2.25A, 15V=2A, 20V=1.5A) |
| C to C cable                 | Shenzhen Daytone Electronics Co., Ltd. | Model: 1.0202.021.0036 (1m length, unshielded, without ferrite core)                                        |
| NFC card                     | Shenzhen Union Smart Card Co., Ltd.    | Model: USC-YT-011                                                                                           |
| Headphones with Aux in cable | Yoto Ltd.                              | Model: PRACXX0423 (Aux in cable 1.35m length, unshielded, without ferrite core)                             |

## 5. Test Facility

| Site Description |                                                                                                                                                                       |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMC Lab.         | The Laboratory has been assessed and proved to be in compliance with CNAS/CL01: 2006(identical to ISO/IEC17025: 2005)<br>The Certificate Registration Number is L0327 |
|                  | FCC Registration Number:435976<br>FCC Designation Number:CN1188<br>ISED Registration Number: 2055C<br>ISED Cab Identifier: CN0038                                     |
| Name of Firm     | Intertek Testing Services Shenzhen Ltd. Longhua Branch                                                                                                                |
| Site Location    | 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, ShenZhen, P.R. China                                        |

## 6. Guidance Standard

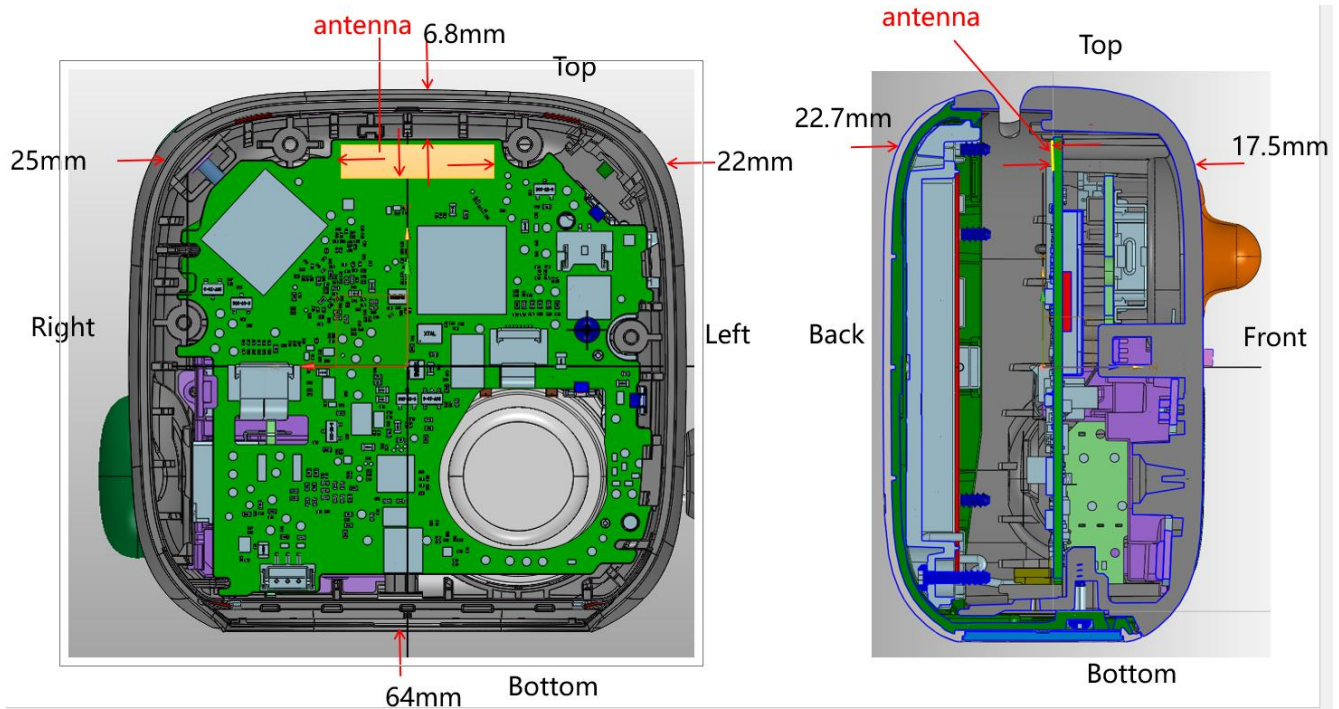
The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- ☒ FCC 47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices
- ☒ ANSI C95.1, 1992: Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. (IEEE Std C95.1-1991)
- ☒ IEC/IEEE 62209-1528:2020: 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)
- ☒ KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz
- ☒ KDB 865664 D02 SAR Reporting v01r02
- ☒ KDB 775926 D01 SAR Testing for Irregular Shaped Devices v01
- ☒ KDB 690783 D01 SAR Listings on Grants v01r03
- ☒ 447498 D04 Interim General RF Exposure Guidance v01
- ☒ KDB 248227 D01 802.11 Wi-Fi SAR v02r02: SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters

**Remark:**

This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 12 of this test report are below limits specified in the relevant standards for the tested bands only.

## 7. EUT Antenna Locations



### Test position consideration:

| Distance of EUT antenna-to-edge/surface(mm), Test distance: 0mm |           |            |     |        |           |            |
|-----------------------------------------------------------------|-----------|------------|-----|--------|-----------|------------|
| Antennas                                                        | Rear Face | Front Face | Top | Bottom | Left Side | Right Side |
| WIFI                                                            | 22.7      | 17.5       | 6.8 | 64.0   | 22.0      | 25.0       |
| Bluetooth                                                       | 22.7      | 17.5       | 6.8 | 64.0   | 22.0      | 25.0       |

**All Sides for SAR Testing Evaluation (Test distance: 0mm):**

| Mode      | Location    | Distance from ANT (mm) | Max. tune-up Power (mW) | Exemption with Max. Allowed Power (mW) | SAR Test |
|-----------|-------------|------------------------|-------------------------|----------------------------------------|----------|
| BT/BLE    | Front Side  | 17.5                   | 5.62                    | 29.56                                  | N/A      |
|           | Rear Side   | 22.7                   |                         | 48.51                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 4.88                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 349.32                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 45.70                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 58.30                                  | N/A      |
| BT/EDR    | Front Side  | 17.5                   | 8.91                    | 29.54                                  | N/A      |
|           | Rear Side   | 22.7                   |                         | 48.49                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 4.88                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 349.25                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 45.68                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 58.28                                  | N/A      |
| 2.4G WIFI | Front Side  | 17.5                   | 35.50                   | 29.66                                  | YES      |
|           | Rear Side   | 22.7                   |                         | 48.66                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 4.91                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 349.88                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 45.84                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 58.47                                  | N/A      |
| U-NII-1   | Front Side  | 17.5                   | 31.60                   | 19.89                                  | YES      |
|           | Rear Side   | 22.7                   |                         | 34.05                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 2.82                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 290.23                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 31.92                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 41.57                                  | N/A      |
| U-NII-2A  | Front Side  | 17.5                   | 15.80                   | 19.73                                  | N/A      |
|           | Rear Side   | 22.7                   |                         | 33.81                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 2.79                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 289.15                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 31.69                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 41.29                                  | N/A      |
| U-NII-2C  | Front Side  | 17.5                   | 14.10                   | 19.02                                  | N/A      |
|           | Rear Side   | 22.7                   |                         | 32.73                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 2.65                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 284.25                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 30.66                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 40.02                                  | N/A      |
| U-NII-3   | Front Side  | 17.5                   | 7.94                    | 18.81                                  | N/A      |
|           | Rear Side   | 22.7                   |                         | 32.39                                  | N/A      |
|           | Top Side    | 6.8                    |                         | 2.61                                   | YES      |
|           | Bottom Side | 64.0                   |                         | 282.73                                 | N/A      |
|           | Left Side   | 22.0                   |                         | 30.34                                  | N/A      |
|           | Right Side  | 25.0                   |                         | 39.63                                  | N/A      |

Note: SAR testing exemption according to KDB 447498 D04 Clause B.4 with the following formula.

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and  $ERP_{20 \text{ cm}}$  is

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

## 8. RF Exposure

### 8.1 LIMITS

#### Uncontrolled Environment

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

Limits for General Population/Uncontrolled Exposure (W/kg)

| Whole-Body | Partial-Body | Hands, Wrists, Feet and ankles |
|------------|--------------|--------------------------------|
| 0.08       | 1.6          | 4.0                            |

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

## 9. Specific Absorption Rate (SAR)

### 9.1 INTRODUCTION

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.

### 9.2 SAR DEFINITION

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 ( $\rho$ ). 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 either related to the temperature elevation in tissue by

$$SAR = c \left( \frac{\delta T}{\delta t} \right)$$

Where:  $C$  is the specific heat capacity,  $\delta T$  is the temperature rise and  $\delta t$  is the exposure duration, or related to the electrical field in the tissue by

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

Where:  $\sigma$  is the conductivity of the tissue  $\rho$  is the mass density of tissue and  $E$  is the RMS electrical field strength.

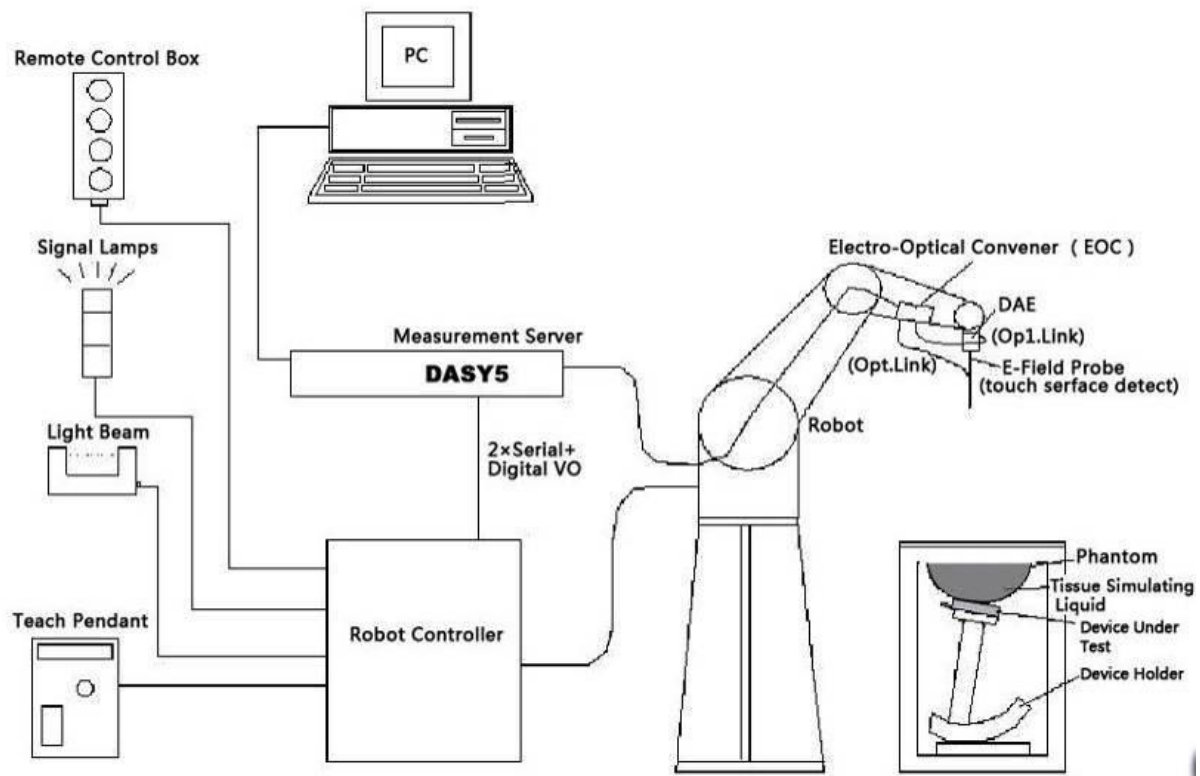
However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

## 10. SAR Measurements System Configuration

### 10.1 SAR MEASUREMENT SET-UP

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win 7 profesional operating system and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.



Picture 1 SAR Lab Test Measurement Set-up

## 10.2 DASYS E-FIELD PROBE SYSTEM

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASYS software reads the reflection turning a software approach and looks for the maximum using 2<sup>nd</sup> ord curve fitting. The approach is stopped at reaching the maximum.

### Probe Specifications:

|                   |                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|
| Model:            | EX3DV4                                                                                                                       |
| Calibration:      | ISO/IEC 17025 calibration service available                                                                                  |
| Probe Length:     | 337 mm                                                                                                                       |
| Probe Tip Length: | 9 mm                                                                                                                         |
| Body Diameter:    | 10 mm                                                                                                                        |
| Tip Diameter:     | 2.5 mm                                                                                                                       |
| Application:      | High Precision dosimetric measurements in any exposure scenario (e.g., very strong Picture 2 E-field Probe gradient fields). |



Picture 2 E-field Probe

## 10.3 E-FIELD PROBE CALIBRATION

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm<sup>2</sup>) using an RF Signal generator, TEM cell, and RF Power Meter.

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. The power density readings equate to 1 mW/cm<sup>2</sup>.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C \frac{\Delta T}{\Delta t}$$

Where:

$\Delta t$  = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

$\Delta T$  = Temperature increase due to RF exposure.

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

Where:

$\sigma$  = Simulated tissue conductivity,

$\rho$  = Tissue density (kg/m<sup>3</sup>).

## 10.4 OTHER TEST EQUIPMENT

### 10.4.1 Data Acquisition Electronics (DAE)

The data acquisition electronics consist 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 measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



Picture 3 DAE

### 10.4.2 Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchron motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)



Picture 4 DASY 5

### 10.4.3 Measurement Server

The Measurement server is based on a PC/104 CPU board with CPU (DASY5: 400 MHz, Intel Celeron), chip disk (DASY5: 128MB), RAM (DASY5: 128MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.



**Picture 5 Server for DASY 5**

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized pinout, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.

### 10.4.4 Device Holder for Phantom

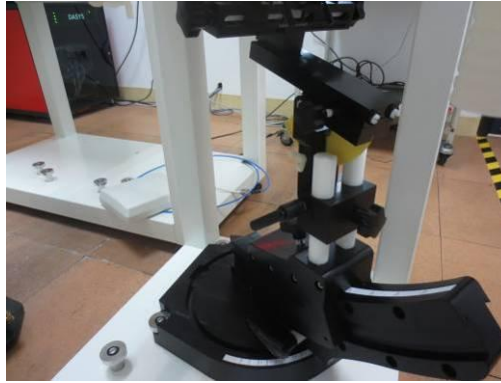
The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5mm distance, a positioning uncertainty of  $\pm 0.5\text{mm}$  would produce a SAR uncertainty of  $\pm 20\%$ . Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY 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 centers for both scales are 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.

#### <Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin-SAM and ELI phantoms.

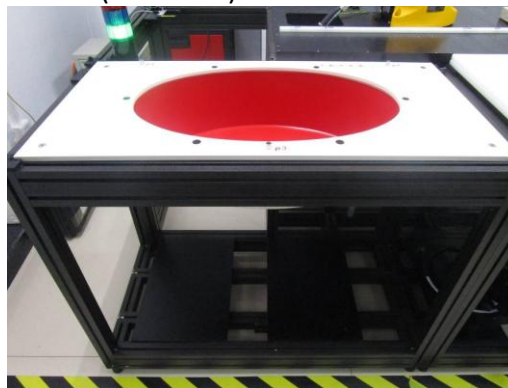


**Picture 6 Device Holder**

### **10.4.5 Phantom**

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.

Shell Thickness:  $2 \pm 0.2$  mm  
Filling Volume: Approx. 30 liters  
Dimensions: 190×600×0 mm (H x L x W)



**Picture 7 ELI Phantom**

## **10.5 SCANNING PROCEDURE**

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max.  $\pm 5\%$ .

The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above  $\pm 0.1\text{mm}$ ). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within  $\pm 30^\circ$ .)

## Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing is set according to FCC KDB Publication 865664. During scan the distance of the probe to the phantom remains unchanged. After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

## Zoom Scan

After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm.

## Spatial Peak Detection

The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses. The DASY5 system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard’s method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

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. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space.

They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard’s method for extrapolation.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

## 10.6 DATA STORAGE AND EVALUATION

### 10.6.1 Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension “.DAE4”. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device set up, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a loss less media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

### 10.6.2 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:

- Sensitivity Norm<sub>i</sub>, a<sub>i0</sub>, a<sub>i1</sub>, a<sub>i2</sub>
- Conversion factor ConvF<sub>i</sub>
- Diode compression point Dcp<sub>i</sub>

Device parameters:

- Frequency f
- Crest factor cf

Media parameters:

- Conductivity
- Density

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot c f / dcp_i$$

With  $V_i$  = compensated signal of channel i ( i = x, y, z )

$U_i$  = input signal of channel i ( i = x, y, z )

$cf$  = crest factor of exciting field (DASY parameter)

$dcp_i$  = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:  $E_i = ( V_i / Norm_i \cdot ConvF )^{1/2}$

H-field probes:  $H_i = ( V_i )^{1/2} \cdot ( a_{i0} + a_{i1} f + a_{i2} f^2 ) / f$

With  $V_i$  = compensated signal of channel i ( i = x, y, z )

$Norm_i$  = sensor sensitivity of channel i ( i = x, y, z )

[mV/(V/m)<sup>2</sup>] for E-field Probes

$ConvF$  = sensitivity enhancement in solution

$a_{ij}$  = sensor sensitivity factors for H-field probes

$f$  = carrier frequency [GHz]

$E_i$  = electric field strength of channel i in V/m

$H_i$  = magnetic field strength of channel i in A/m

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

$$E_{tot} = (E_x^2 + E_y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (E_{tot})^2 \cdot \sigma / (\rho \cdot 1000)$$

with  $SAR$  = local specific absorption rate in mW/g

$E_{tot}$  = total field strength in V/m

$\sigma$  = conductivity in [mho/m] or [Siemens/m]

$\rho$  = equivalent tissue density in g/cm<sup>3</sup>

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}^2 / 3770 \text{ or } P_{pwe} = H_{tot}^2 \cdot 37.7$$

with  $P_{pwe}$  = equivalent power density of a plane wave in mW/cm<sup>2</sup>

$E_{tot}$  = total electric field strength in V/m ;  $H_{tot}$  = total magnetic field strength in A/m

## 10.7 TISSUE-EQUIVALENT LIQUID

### 10.7.1 Tissue-equivalent Liquid Ingredients

The liquid is consisted of water, salt and Glycol. The liquid has previously been proven to be suited for worst-case. The Table 2 & 3 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB 865664 D01.

Table 1: Recommended Dielectric Performance of Tissue

| Tissue Type | Bactericide | DGBE | HEC | NaCl | Sucrose | Triton X-100 | Water | Diethylene Glycol Mono- hexylether |
|-------------|-------------|------|-----|------|---------|--------------|-------|------------------------------------|
| H750        | 0.2         | -    | 0.2 | 1.4  | 57.0    | -            | 41.1  | -                                  |
| H835        | 0.1         | -    | 1.0 | 1.4  | 57.0    | -            | 40.5  | -                                  |
| H900        | 0.1         | -    | 1.0 | 1.5  | 56.5    | -            | 40.9  | -                                  |
| H1450       | -           | 45.5 | -   | 0.7  | -       | -            | 53.8  | -                                  |
| H1640       | -           | 45.8 | -   | 0.5  | -       | -            | 53.7  | -                                  |
| H1750       | -           | 44.5 | -   | 0.3  | -       | -            | 55.2  | -                                  |
| H1800       | -           | 44.9 | -   | 0.2  | -       | -            | 54.9  | -                                  |
| H1900       | -           | 44.9 | -   | 0.2  | -       | -            | 54.9  | -                                  |
| H2000       | -           | 50   | -   | -    | -       | -            | 50    | -                                  |
| 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         | 65.50 | 17.3                               |
| B750        | 0.2         | -    | 0.2 | 0.8  | 48.8    | -            | 50.0  | -                                  |
| B835        | 0.2         | -    | 0.2 | 0.9  | 48.5    | -            | 50.2  | -                                  |
| B900        | 0.2         | -    | 0.2 | 0.9  | 48.2    | -            | 50.5  | -                                  |
| B1450       | -           | 34.0 | -   | 0.3  | -       | -            | 65.7  | -                                  |
| B1640       | -           | 32.5 | -   | 0.3  | -       | -            | 67.2  | -                                  |
| B1750       | -           | 29.4 | -   | 0.4  | -       | -            | 70.2  | -                                  |
| B1800       | -           | 29.5 | -   | 0.4  | -       | -            | 70.1  | -                                  |
| B1900       | -           | 29.5 | -   | 0.3  | -       | -            | 70.2  | -                                  |
| B2000       | -           | 30.0 | -   | 0.2  | -       | -            | 69.8  | -                                  |
| B2300       | -           | 31.0 | -   | 0.1  | -       | -            | 68.9  | -                                  |
| B2450       | -           | 31.4 | -   | 0.1  | -       | -            | 68.5  | -                                  |
| B2600       | -           | 31.8 | -   | 0.1  | -       | -            | 68.1  | -                                  |
| B3500       | -           | 28.8 | -   | 0.1  | -       | -            | 71.1  | -                                  |
| B5G         | -           | -    | -   | -    | -       | 10.7         | 78.6  | 10.7                               |

Table 2: Recommended Dielectric Performance of Tissue

| MIXTURE (%)                        | FREQUENCY (Head) 2450MHz                |
|------------------------------------|-----------------------------------------|
| Water                              | 55                                      |
| TWEEN                              | 45                                      |
| Dielectric Parameters Target Value | f=2450MHz $\epsilon=39.2$ $\sigma=1.80$ |

| MIXTURE (%)                        | FREQUENCY (Head) 5GHz                                                                                                                                                    |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water                              | 56                                                                                                                                                                       |
| Oxidised mineral oil               | 44                                                                                                                                                                       |
| Dielectric Parameters Target Value | f=5200MHz $\epsilon=36.0$ $\sigma=4.66$<br>f=5300MHz $\epsilon=35.9$ $\sigma=4.76$<br>f=5600MHz $\epsilon=35.5$ $\sigma=5.07$<br>f=5800MHz $\epsilon=35.3$ $\sigma=5.27$ |

### 10.7.2 Tissue-equivalent Liquid Properties

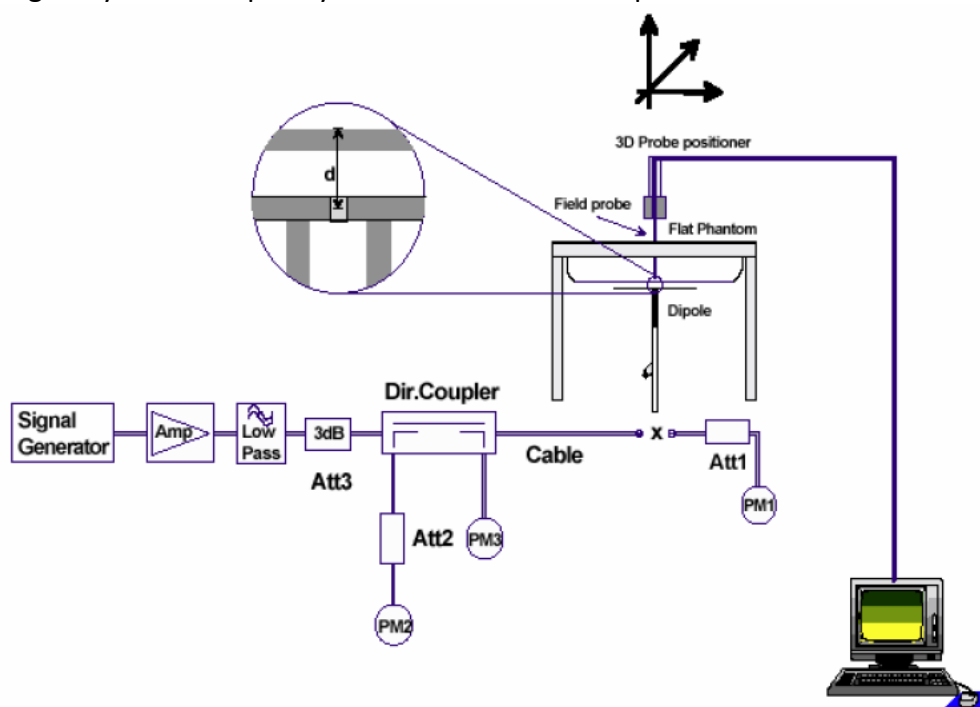
Table 3: Dielectric Performance of Head Tissue Simulating Liquid

| Temperature: 22.0°C Relative humidity: 57.0% |               |                                  |                       |                     |
|----------------------------------------------|---------------|----------------------------------|-----------------------|---------------------|
| Frequency (MHz)                              | Measured Date | Description                      | Dielectric Parameters |                     |
|                                              |               |                                  | $\epsilon_r$          | $\sigma(s/m)$       |
| 2450                                         | 2026/04/10    | Target Value<br>$\pm 5\%$ window | 39.2<br>37.24—41.16   | 1.80<br>1.71 — 1.89 |
|                                              |               | Measurement Value                | 38.252                | 1.883               |
| 5200                                         | 2026/04/10    | Target Value<br>$\pm 5\%$ window | 36.0<br>34.20—37.80   | 4.66<br>4.43 — 4.89 |
|                                              |               | Measurement Value                | 34.809                | 4.563               |
| 5300                                         | 2026/04/10    | Target Value<br>$\pm 5\%$ window | 35.9<br>34.11—37.70   | 4.76<br>4.52 — 5.00 |
|                                              |               | Measurement Value                | 34.736                | 4.645               |
| 5600                                         | 2026/04/10    | Target Value<br>$\pm 5\%$ window | 35.5<br>33.73—37.28   | 5.07<br>4.82 — 5.32 |
|                                              |               | Measurement Value                | 34.272                | 4.925               |
| 5800                                         | 2026/04/10    | Target Value<br>$\pm 5\%$ window | 35.3<br>33.54 — 37.07 | 5.27<br>5.01 — 5.53 |
|                                              |               | Measurement Value                | 33.935                | 5.125               |

## 10.8 SYSTEM CHECK

### 10.8.1 Description of System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the table 5. System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system ( $\pm 10\%$ ). System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.



Picture 8 system Check Set-up

#### Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss ( $< -20$  dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

## 10.8.2 System Check Results

Table 5: System Check for Simulating Liquid

| Measurement Date | Frequency (MHz) | Liquid Type (head/body) | 1W Target SAR1g (W/kg) | Measured SAR1g (W/kg) | 1W Normalized SAR1g (W/kg) | Limit ( $\pm 10\%$ Deviation) |
|------------------|-----------------|-------------------------|------------------------|-----------------------|----------------------------|-------------------------------|
| 2026/04/10       | 2450            | Head                    | 52.40                  | 12.96                 | 51.84                      | 1.07                          |
| 2026/04/10       | 5200            | Head                    | 77.60                  | 7.71                  | 77.10                      | 0.64                          |
| 2026/04/10       | 5300            | Head                    | 78.10                  | 7.83                  | 78.30                      | -0.26                         |
| 2026/04/10       | 5600            | Head                    | 81.30                  | 8.16                  | 81.60                      | -0.37                         |
| 2026/04/10       | 5800            | Head                    | 78.80                  | 7.83                  | 78.30                      | 0.63                          |

Note:

For 2450MHz system check input power: 250mW

For 5GHz system check input power: 100mW

## 11. Measurement Procedures

### 11.1 GENERAL DESCRIPTION OF TEST PROCEDURES

For WLAN SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal. This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1.

For the 802.11a/b/g/n/ac SAR tests, a communication link is set up with the test mode software for WIFI mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Provided higher maximum output power is not specified for the other channels, channels 1, 6, 11, 36, 40, 48 are used to configure 20 MHz DSSS and 20 MHz OFDM channels for SAR measurements; otherwise, the closest adjacent channel with the highest maximum output power specified for production units should be tested instead of channels 1, 6, 11, 36, 40, 48. In addition, SAR test reduction with respect to reported SAR and transmission band width according to 4.3.3 KDB Publication 447498 D04 may also be applied.

802.11a/b/g/n/ac operating modes are tested independently according to the service requirements in each frequency band. 802.11a/b/g/n/ac modes are tested on the maximum average output channel.

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- a) When the reported SAR of the highest measured maximum output power channel (see 3.1) for the exposure configuration is  $\leq 0.8$  W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- b) When the reported SAR is  $> 0.8$  W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is  $> 1.2$  W/kg, SAR is required for the third channel; i.e., all channels require testing.

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (see 11.1.2, including subclauses). SAR is not required for the following 2.4 GHz OFDM conditions.

- a) When KDB Publication 447498 D04 SAR test exclusion applies to the OFDM configuration.
- b) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following, with respect to the highest reported SAR and maximum output power specified for production units. The procedures are applied independently to each exposure configuration; for example, head, body, hotspot mode etc.

- a) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

- b) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is  $\leq 1.2$  W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, each band is tested independently for SAR.
- c) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is  $> 1.2$  W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

## 11.2 MEASUREMENT VARIABILITY

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1. Repeated measurement is not required when the original highest measured SAR is  $< 0.80$  W/kg; steps 2) through 4) do not apply.
2. When the original highest measured SAR is  $\geq 0.80$  W/kg, repeat that measurement once.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is  $> 1.20$  or when the original or repeated measurement is  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).
4. Perform a third repeated measurement only if the original, first or second repeated measurement is  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

## 12. TEST RESULTS

### 12.1 Conducted Power Results

Test Condition:

1. Conducted Measurement

EUT was set for low, mid, high channel with modulated mode and highest RF output power.  
The base station simulator was connected to the antenna terminal.

2 Conducted Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is  $\pm 1.5\text{dB}$ .

|   |                          |                      |          |
|---|--------------------------|----------------------|----------|
| 3 | Environmental Conditions | Temperature          | 22.0°C   |
|   |                          | Relative Humidity    | 55.0%    |
|   |                          | Atmospheric Pressure | 1009mbar |

4 Test Date: 2026-04-10

#### Test Procedures:

The output power was measured using power meter at low, mid, and high channels.

#### Bluetooth Measurement Result

| Mode | Frequency (MHz) | Output Power(dBm) | Tune up limited(dBm) |
|------|-----------------|-------------------|----------------------|
| DH5  | 2402            | 8.84              | 7.5 $\pm$ 2.0        |
|      | 2441            | 8.29              | 7.5 $\pm$ 2.0        |
|      | 2480            | 7.41              | 7.5 $\pm$ 2.0        |
| 2DH5 | 2402            | 8.89              | 7.5 $\pm$ 2.0        |
|      | 2441            | 5.82              | 7.5 $\pm$ 2.0        |
|      | 2480            | 7.59              | 7.5 $\pm$ 2.0        |
| 3DH5 | 2402            | 9.09              | 7.5 $\pm$ 2.0        |
|      | 2441            | 6.16              | 7.5 $\pm$ 2.0        |
|      | 2480            | 7.80              | 7.5 $\pm$ 2.0        |

## BLE Measurement Result

### 1M

| Channel number | Frequency (MHz) | Output Power(dBm) | Tune up limited(dBm) |
|----------------|-----------------|-------------------|----------------------|
| 0              | 2402            | 6.76              | 6.5±1.0              |
| 19             | 2440            | 7.03              | 6.5±1.0              |
| 39             | 2480            | 6.84              | 6.5±1.0              |

### 2M

| Channel number | Frequency (MHz) | Output Power(dBm) | Tune up limited(dBm) |
|----------------|-----------------|-------------------|----------------------|
| 1              | 2404            | 6.77              | 6.5±1.0              |
| 19             | 2440            | 7.13              | 6.5±1.0              |
| 38             | 2478            | 6.84              | 6.5±1.0              |

## WIFI Mode 2.4G

| Mode           | Channel number | Frequency (MHz) | Data rate (Mbps) | Average Output Power (dBm) | Tune up limited (dBm) |
|----------------|----------------|-----------------|------------------|----------------------------|-----------------------|
| 802.11b        | 1              | 2412            | 1                | 12.80                      | 13.0±1.0              |
|                | 6              | 2437            | 1                | 12.60                      | 13.0±1.0              |
|                | 11             | 2462            | 1                | 12.60                      | 13.0±1.0              |
| 802.11g        | 1              | 2412            | 6                | 14.30                      | 14.0±1.5              |
|                | 6              | 2437            | 6                | 14.40                      | 14.0±1.5              |
|                | 11             | 2462            | 6                | 14.50                      | 14.0±1.5              |
| 802.11n(HT20)  | 1              | 2412            | MCS0             | 14.75                      | 14.0±1.5              |
|                | 6              | 2437            | MCS0             | 14.37                      | 14.0±1.5              |
|                | 11             | 2462            | MCS0             | 14.76                      | 14.0±1.5              |
| 802.11ax(HT20) | 1              | 2412            | MCS0             | 14.83                      | 14.0±1.5              |
|                | 6              | 2437            | MCS0             | 14.52                      | 14.0±1.5              |
|                | 11             | 2462            | MCS0             | 15.16                      | 14.0±1.5              |

## WIFI Mode 2.4G Partial RU

| Test Mode      | Channel number | Frequency [MHz] | Ru Size | Data Rate (Mbps) | Average Power (dBm) | Tune up limited (dBm) |
|----------------|----------------|-----------------|---------|------------------|---------------------|-----------------------|
| 802.11ax(HT20) | 1              | 2412            | 26Tone  | MCS0             | 6.70                | 6.5±1.5               |
|                | 1              | 2412            | 52Tone  | MCS0             | 9.20                | 8.5±1.5               |
|                | 1              | 2412            | 106Tone | MCS0             | 12.98               | 11.5±1.5              |
|                | 6              | 2437            | 26Tone  | MCS0             | 7.20                | 6.5±1.5               |
|                | 6              | 2437            | 52Tone  | MCS0             | 9.80                | 8.5±1.5               |
|                | 6              | 2437            | 106Tone | MCS0             | 12.55               | 11.5±1.5              |
|                | 11             | 2462            | 26Tone  | MCS0             | 6.00                | 6.5±1.5               |
|                | 11             | 2462            | 52Tone  | MCS0             | 9.10                | 8.5±1.5               |
|                | 11             | 2462            | 106Tone | MCS0             | 12.81               | 11.5±1.5              |

**WIFI Mode (5G)**

| Mode       | Channel | Frequency (MHz) | Data rate (Mbps) | Conducted power [dBm] | Tune up limited (dBm) |
|------------|---------|-----------------|------------------|-----------------------|-----------------------|
| 11A        | 36      | 5180            | 6                | 13.82                 | 12.0±3.0              |
|            | 40      | 5200            | 6                | 14.12                 | 12.0±3.0              |
|            | 48      | 5240            | 6                | 14.96                 | 12.0±3.0              |
|            | 52      | 5260            | 6                | 11.64                 | 10.0±2.0              |
|            | 56      | 5280            | 6                | 11.47                 | 10.0±2.0              |
|            | 64      | 5320            | 6                | 11.26                 | 10.0±2.0              |
|            | 100     | 5500            | 6                | 11.36                 | 10.0±1.5              |
|            | 116     | 5580            | 6                | 11.12                 | 10.0±1.5              |
|            | 140     | 5700            | 6                | 10.90                 | 10.0±1.5              |
|            | 149     | 5745            | 6                | 8.55                  | 7.0±2.0               |
|            | 157     | 5785            | 6                | 8.05                  | 7.0±2.0               |
|            | 165     | 5825            | 6                | 8.42                  | 7.0±2.0               |
| 11N20SISO  | 36      | 5180            | MCS0             | 9.85                  | 12.0±3.0              |
|            | 40      | 5200            | MCS0             | 13.34                 | 12.0±3.0              |
|            | 48      | 5240            | MCS0             | 13.37                 | 12.0±3.0              |
|            | 52      | 5260            | MCS0             | 11.31                 | 10.0±2.0              |
|            | 56      | 5280            | MCS0             | 11.25                 | 10.0±2.0              |
|            | 64      | 5320            | MCS0             | 10.81                 | 10.0±2.0              |
|            | 100     | 5500            | MCS0             | 10.85                 | 10.0±1.5              |
|            | 116     | 5580            | MCS0             | 10.61                 | 10.0±1.5              |
|            | 140     | 5700            | MCS0             | 10.27                 | 10.0±1.5              |
|            | 149     | 5745            | MCS0             | 8.29                  | 7.0±2.0               |
|            | 157     | 5785            | MCS0             | 7.75                  | 7.0±2.0               |
|            | 165     | 5825            | MCS0             | 7.87                  | 7.0±2.0               |
| 11AC20SISO | 36      | 5180            | MCS0             | 13.19                 | 12.0±3.0              |
|            | 40      | 5200            | MCS0             | 13.26                 | 12.0±3.0              |
|            | 48      | 5240            | MCS0             | 13.36                 | 12.0±3.0              |
|            | 52      | 5260            | MCS0             | 11.17                 | 10.0±2.0              |
|            | 56      | 5280            | MCS0             | 10.91                 | 10.0±2.0              |
|            | 64      | 5320            | MCS0             | 10.72                 | 10.0±2.0              |
|            | 100     | 5500            | MCS0             | 10.79                 | 10.0±1.5              |
|            | 116     | 5580            | MCS0             | 10.70                 | 10.0±1.5              |
|            | 140     | 5700            | MCS0             | 9.95                  | 10.0±1.5              |
|            | 149     | 5745            | MCS0             | 8.20                  | 7.0±2.0               |
|            | 157     | 5785            | MCS0             | 7.69                  | 7.0±2.0               |
|            | 165     | 5825            | MCS0             | 7.92                  | 7.0±2.0               |
| 11AX20SISO | 36      | 5180            | MCS0             | 13.74                 | 12.0±3.0              |
|            | 40      | 5200            | MCS0             | 13.82                 | 12.0±3.0              |
|            | 48      | 5240            | MCS0             | 13.93                 | 12.0±3.0              |
|            | 52      | 5260            | MCS0             | 11.69                 | 10.0±2.0              |
|            | 56      | 5280            | MCS0             | 11.65                 | 10.0±2.0              |
|            | 64      | 5320            | MCS0             | 11.40                 | 10.0±2.0              |

| Mode | Channel | Frequency (MHz) | Data rate (Mbps) | Conducted power [dBm] | Tune up limited (dBm) |
|------|---------|-----------------|------------------|-----------------------|-----------------------|
|      | 100     | 5500            | MCS0             | 11.35                 | 10.0±1.5              |
|      | 116     | 5580            | MCS0             | 11.28                 | 10.0±1.5              |
|      | 140     | 5700            | MCS0             | 10.69                 | 10.0±1.5              |
|      | 149     | 5745            | MCS0             | 8.59                  | 7.0±2.0               |
|      | 157     | 5785            | MCS0             | 8.27                  | 7.0±2.0               |
|      | 165     | 5825            | MCS0             | 8.27                  | 7.0±2.0               |

**WIFI Mode (5G) Partial RU**

| Test Mode      | Channel number | Frequency [MHz] | Ru Size | Data Rate (Mbps) | Average Power (dBm) | Tune up limited (dBm) |
|----------------|----------------|-----------------|---------|------------------|---------------------|-----------------------|
| 802.11ax(HT20) | 36             | 5180            | 26Tone  | MCS0             | 7.23                | 7.0±2.0               |
|                | 36             | 5180            | 52Tone  | MCS0             | 9.71                | 9.0±2.0               |
|                | 36             | 5180            | 106Tone | MCS0             | 12.47               | 11.0±2.0              |
|                | 40             | 5200            | 26Tone  | MCS0             | 7.99                | 7.0±2.0               |
|                | 40             | 5200            | 52Tone  | MCS0             | 10.15               | 9.0±2.0               |
|                | 40             | 5200            | 106Tone | MCS0             | 12.43               | 11.0±2.0              |
|                | 48             | 5240            | 26Tone  | MCS0             | 8.32                | 7.0±2.0               |
|                | 48             | 5240            | 52Tone  | MCS0             | 9.59                | 9.0±2.0               |
|                | 48             | 5240            | 106Tone | MCS0             | 12.52               | 11.0±2.0              |
|                | 52             | 5260            | 26Tone  | MCS0             | 7.10                | 7.0±2.0               |
|                | 52             | 5260            | 52Tone  | MCS0             | 10.11               | 10.0±2.0              |
|                | 52             | 5260            | 106Tone | MCS0             | 10.82               | 9.0±2.0               |
|                | 56             | 5280            | 26Tone  | MCS0             | 8.67                | 7.0±2.0               |
|                | 56             | 5280            | 52Tone  | MCS0             | 11.33               | 10.0±2.0              |
|                | 56             | 5280            | 106Tone | MCS0             | 10.80               | 9.0±2.0               |
|                | 64             | 5320            | 26Tone  | MCS0             | 7.71                | 7.0±2.0               |
|                | 64             | 5320            | 52Tone  | MCS0             | 10.28               | 10.0±2.0              |
|                | 64             | 5320            | 106Tone | MCS0             | 9.80                | 9.0±2.0               |
|                | 100            | 5500            | 26Tone  | MCS0             | 7.60                | 6.0±2.0               |
|                | 100            | 5500            | 52Tone  | MCS0             | 10.53               | 9.0±2.0               |
|                | 100            | 5500            | 106Tone | MCS0             | 9.12                | 8.0±2.0               |
|                | 116            | 5580            | 26Tone  | MCS0             | 7.71                | 6.0±2.0               |
|                | 116            | 5580            | 52Tone  | MCS0             | 10.10               | 9.0±2.0               |
|                | 116            | 5580            | 106Tone | MCS0             | 9.07                | 8.0±2.0               |
|                | 140            | 5700            | 26Tone  | MCS0             | 6.12                | 6.0±2.0               |
|                | 140            | 5700            | 52Tone  | MCS0             | 9.17                | 9.0±2.0               |
|                | 140            | 5700            | 106Tone | MCS0             | 8.27                | 8.0±2.0               |
|                | 149            | 5745            | 26Tone  | MCS0             | 6.63                | 5.0±2.0               |
|                | 149            | 5745            | 52Tone  | MCS0             | 6.70                | 6.0±2.0               |
|                | 149            | 5745            | 106Tone | MCS0             | 7.14                | 6.0±2.0               |
|                | 157            | 5785            | 26Tone  | MCS0             | 6.68                | 5.0±2.0               |
|                | 157            | 5785            | 52Tone  | MCS0             | 7.45                | 6.0±2.0               |

|  |     |      |         |      |      |         |
|--|-----|------|---------|------|------|---------|
|  | 157 | 5785 | 106Tone | MCS0 | 7.20 | 6.0±2.0 |
|  | 165 | 5825 | 26Tone  | MCS0 | 6.09 | 5.0±2.0 |
|  | 165 | 5825 | 52Tone  | MCS0 | 6.97 | 6.0±2.0 |
|  | 165 | 5825 | 106Tone | MCS0 | 7.37 | 6.0±2.0 |

## 12.2 SAR TEST RESULTS

**Table 6: SAR Values**

| Test Position                                                    | Channel / Frequency (MHz) | Modulation Mode | Maximum Allowed Power (dBm) | Conducted Power (dBm) | Drift ±0.21 dB | Limit SAR <sub>1g</sub> 1.6 W/kg  |                |                                   | SAR plot numbers in Annex C |
|------------------------------------------------------------------|---------------------------|-----------------|-----------------------------|-----------------------|----------------|-----------------------------------|----------------|-----------------------------------|-----------------------------|
|                                                                  |                           |                 |                             |                       | Drift (dB)     | Measured SAR <sub>1g</sub> (W/kg) | Scaling Factor | Reported SAR <sub>1g</sub> (W/kg) |                             |
| Test Position of body (Distance Between EUT and Flat Phatom:0mm) |                           |                 |                             |                       |                |                                   |                |                                   |                             |
| Top Side                                                         | 19/2440                   | GFSK            | 7.5                         | 7.13                  | -0.07          | 0.0390                            | 1.09           | 0.042                             | 2.4G BT_BLE_top Side_CH19   |
| Top Side                                                         | 0/2402                    | FHSS            | 9.5                         | 9.09                  | 0.09           | 0.0285                            | 1.10           | 0.031                             | 2.4G BT_EDR_top Side_CH0    |
| Front Side                                                       | 11/2462                   | OFDMA           | 15.5                        | 15.16                 | 0.03           | 0.2660                            | 1.08           | 0.288                             | N/A                         |
| Top Side                                                         | 11/2462                   | OFDMA           | 15.5                        | 15.16                 | 0.07           | 0.5340                            | 1.08           | 0.577                             | N/A                         |
| Top Side                                                         | 6/2437                    | OFDMA           | 15.5                        | 14.52                 | 0.05           | 0.5030                            | 1.25           | 0.630                             | N/A                         |
| Top Side                                                         | 1/2412                    | OFDMA           | 15.5                        | 14.83                 | -0.05          | 0.5640                            | 1.17           | 0.658                             | N/A                         |
| Front Side                                                       | 1/2412                    | DSSS            | 13.0                        | 12.80                 | 0.03           | 0.2780                            | 1.05           | 0.291                             | N/A                         |
| Top Side                                                         | 1/2412                    | DSSS            | 13.0                        | 12.80                 | -0.06          | 0.6630                            | 1.05           | 0.694                             | N/A                         |
| Top Side                                                         | 6/2437                    | DSSS            | 13.0                        | 12.60                 | -0.05          | 0.7260                            | 1.10           | 0.796                             | 2.4G WIFI_11B_top Side_CH6  |
| Top Side                                                         | 11/2462                   | DSSS            | 13.0                        | 12.60                 | 0.05           | 0.6560                            | 1.10           | 0.719                             | N/A                         |
| Front Side                                                       | 48/5240                   | OFDM            | 15.0                        | 14.96                 | 0.05           | 0.2330                            | 1.01           | 0.235                             | N/A                         |
| Top Side                                                         | 48/5240                   | OFDM            | 15.0                        | 14.96                 | 0.05           | 0.6700                            | 1.01           | 0.676                             | 5G WIFI_11A_top Side_CH48   |
| Top Side                                                         | 52/5260                   | OFDMA           | 12.0                        | 11.69                 | -0.04          | 0.4100                            | 1.07           | 0.440                             | 5G WIFI_11AX_top Side_CH52  |
| Top Side                                                         | 100/5500                  | OFDM            | 11.5                        | 11.36                 | -0.01          | 0.3700                            | 1.03           | 0.382                             | 5G WIFI_11A_top Side_CH100  |
| Top Side                                                         | 149/5745                  | OFDMA           | 9.0                         | 8.59                  | 0.00           | 0.2270                            | 1.10           | 0.249                             | 5G WIFI_11AX_top Side_CH149 |

**Note:**

- The value with blue color is the maximum SAR Value of each test band.
- When the reported SAR of the highest measured maximum output power channel for the exposure configuration is  $\leq 0.8$  W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- When the reported SAR is  $> 0.8$  W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is  $> 1.2$  W/kg, SAR is required for the third channel; i.e., all channels require testing.

The EUT exercise program (provided by client) used during SAR testing was designed to exercise the various system components in a manner similar to a typical use. During the test, Channel and test mode software provided by the applicant was used to control the operating channel as well as the test mode. The worst case configuration is used in all specified testing.

## 12.3 Measurement variability consideration

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1. Repeated measurement is not required when the original highest measured SAR is  $< 0.8$  or  $2 \text{ W/kg}$  (1-g or 10-g respectively); steps 2) through 4) do not apply.
2. When the original highest measured SAR is  $\geq 0.8$  or  $2 \text{ W/kg}$  (1-g or 10-g respectively), repeat that measurement once.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is  $> 1.20$  or when the original or repeated measurement is  $\geq 1.45$  or  $3.6 \text{ W/kg}$  ( $\sim 10\%$  from the 1-g or 10-g respective SAR limit).
4. Perform a third repeated measurement only if the original, first, or second repeated measurement is  $\geq 1.5$  or  $3.75 \text{ W/kg}$  (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

## 12.4 Simultaneous Transmission SAR Analysis.

EUT supports BT+2.4G WIFI and BT +5G WIFI simultaneous transmission. The 2.4G WIFI and 5G WIFI cannot transmit simultaneous.

The Max Simultaneous Transmission =  $0.042\text{W/kg} + 0.796\text{W/kg} = 0.838\text{W/kg} < 1.6\text{W/kg}$

EUT satisfies SAR simultaneous transmission exclusion requirement.

## 12.5 MAXIMUM GRAPH RESULTS

The graph results see ANNEX C.

## 13. Measurement Uncertainty

When the highest measured 1-g SAR within a frequency band is  $< 1.5 \text{ W/kg}$ , the extensive SAR measurement uncertainty analysis described in IEC/IEEE 62209-1528:2020 is not required in SAR reports submitted for equipment approval.

## 14. Main Test Instrument

| Equipment No. | Equipment                   | Manufacturer                 | Model No.         | Serial No.      | Last Cal.  | Cal. Interval |
|---------------|-----------------------------|------------------------------|-------------------|-----------------|------------|---------------|
| SZ060-01      | SAR Test System             | SPEAG                        | DASY52 SAR TX90XL | F14/5YJ0B1/A/01 | 2025-04-21 | 1 year        |
| SZ060-01-01   | E-Field Probe               | SPEAG                        | EX3DV4            | 7322            | 2025-04-21 | 1 year        |
| SZ060-01-10   | System Validation Dipole    | SPEAG                        | D2450V2           | 966             | 2024-11-06 | 3 year        |
| SZ060-01-12   | System Validation Dipole    | SPEAG                        | D5GHzV2           | 1218            | 2024-11-05 | 3 year        |
| SZ060-01-13   | Data Acquisition Unit       | SPEAG                        | DAE4              | 1473            | 2025-04-21 | 1 year        |
| SZ060-01-14   | Dielectric Assessment Kit   | SPEAG                        | DAKS 3.5          | 1056            | 2025-08-26 | 1 year        |
| SZ060-01-15   | Vector Reflectometer        | Copper Mountain Technologies | Planar R140       | 0090614         | 2025-07-08 | 1 year        |
| SZ060-01-16   | Thermometer                 | LKM electronics GmbH         | DTM3000           | 3477            | 2025-12-25 | 1 year        |
| SZ060-01-17   | Power Amplifier             | Mini Circuits                | ZHL-42W+          | QA1449003       | 2025-05-01 | 1 year        |
| SZ060-01-18   | Power Amplifier             | Mini Circuits                | ZVE-8G+           | 111701437       | 2025-05-01 | 1 year        |
| SZ060-01-21   | ELI Phantom                 | SPEAG                        | ELI Phantom V6.0  | 2033            | N/A        | N/A           |
| SZ180-13      | MXG Vector Signal Generator | Keysight                     | N5182B            | MY53051328      | 2025-09-15 | 1 year        |
| SZ070-04      | Directional Bridge          | Agilent                      | 86205A            | MY31402141      | 2025-12-02 | 1 year        |
| SZ182-02      | RF Power Meter              | Anritsu                      | ML2496A           | 1302005         | 2025-04-21 | 1 year        |
| SZ182-03      | Average power sensor        | R&S                          | NRP-Z22           | 101689          | 2025-04-21 | 1 year        |
| N/A           | Device Holder               | SPEAG                        | N/A               | N/A             | N/A        | N/A           |

## ANNEX A: Test Layout and Setup



Top Side(0mm)



Front Side(0mm)

## ANNEX B: System Check Results

Date: 2026/04/10

### System Check\_H2450

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.252$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(7.5, 7.5, 7.5) @ 2450 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Configuration/Pin=250 mW/Area Scan (7x11x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 16.2 W/kg

**Configuration/Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 62.72 V/m; Power Drift = 0.12 dB

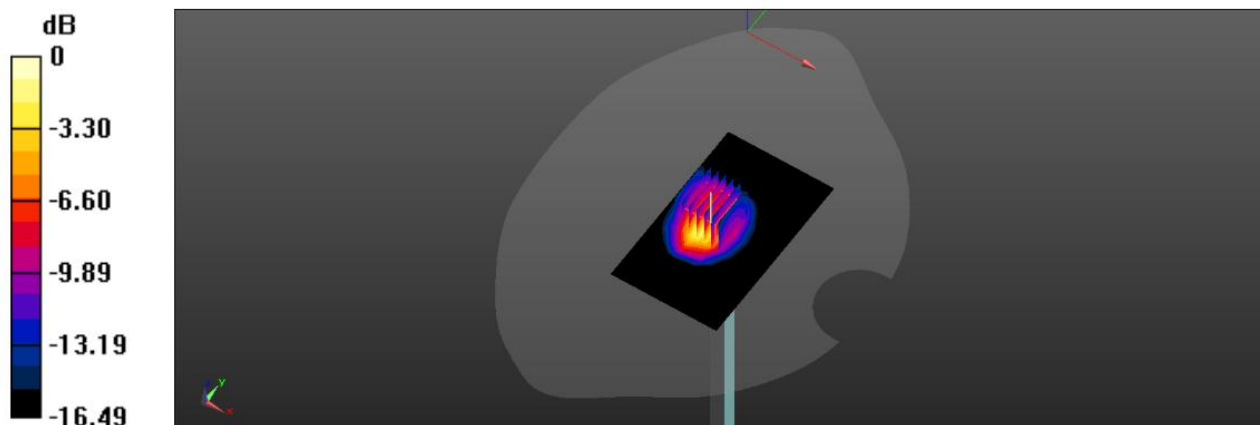
Peak SAR (extrapolated) = 21.52 W/kg

**SAR(1 g) = 12.96 W/kg; SAR(10 g) = 6.05 W/kg**

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 63%

Maximum value of SAR (measured) = 18.6 W/kg



0 dB = 18.6 W/kg = 12.70 dBW/kg

Date: 2026/04/10

## System Check\_H5200

Communication System: UID 0, \_CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1  
Medium: 5G Head Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.563$  S/m;  $\epsilon_r = 34.809$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(5.35, 5.35, 5.35) @ 5200 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 1 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1888
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Configuration/Pin=100 mW/Area Scan (7x9x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 18.45 W/kg

**Configuration/Pin=100 mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 34.26 V/m; Power Drift = -0.04 dB

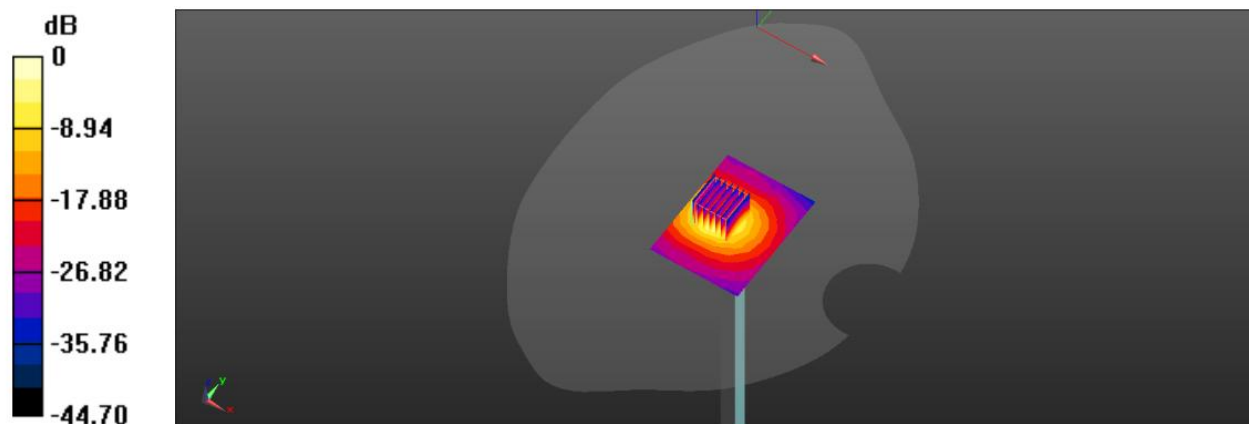
Peak SAR (extrapolated) = 31.05 W/kg

**SAR(1 g) = 7.71 W/kg; SAR(10 g) = 2.16 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.8 mm

Ratio of SAR at M2 to SAR at M1 = 51.8%

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



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

## System Check\_H5300

Communication System: UID 0, \_CW (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: 5G Head Medium parameters used:  $f = 5300$  MHz;  $\sigma = 4.645$  S/m;  $\epsilon_r = 34.736$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(5.35, 5.35, 5.35) @ 5300 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 1 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1888
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Configuration/Pin=100 mW/Area Scan (7x9x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 17.65 W/kg

**Configuration/Pin=100 mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 33.34 V/m; Power Drift = 0.07 dB

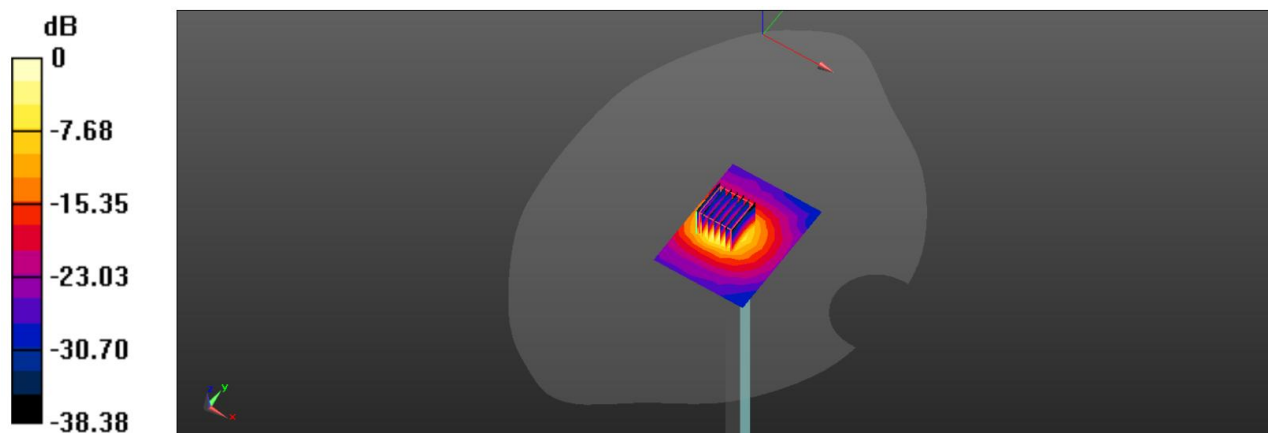
Peak SAR (extrapolated) = 30.27 W/kg

**SAR(1 g) = 7.83 W/kg; SAR(10 g) = 2.17 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 51.5%

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



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

Date: 2026/04/10

## System Check\_H5600

Communication System: UID 0, \_CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1  
Medium: 5G Head Medium parameters used:  $f = 5600$  MHz;  $\sigma = 4.925$  S/m;  $\epsilon_r = 34.272$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(4.8, 4.8, 4.8) @ 5600 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 1 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1888
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Configuration/Pin=100 mW/Area Scan (7x9x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (measured) = 12.38 W/kg

**Configuration/Pin=100 mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 35.45 V/m; Power Drift = -0.18 dB

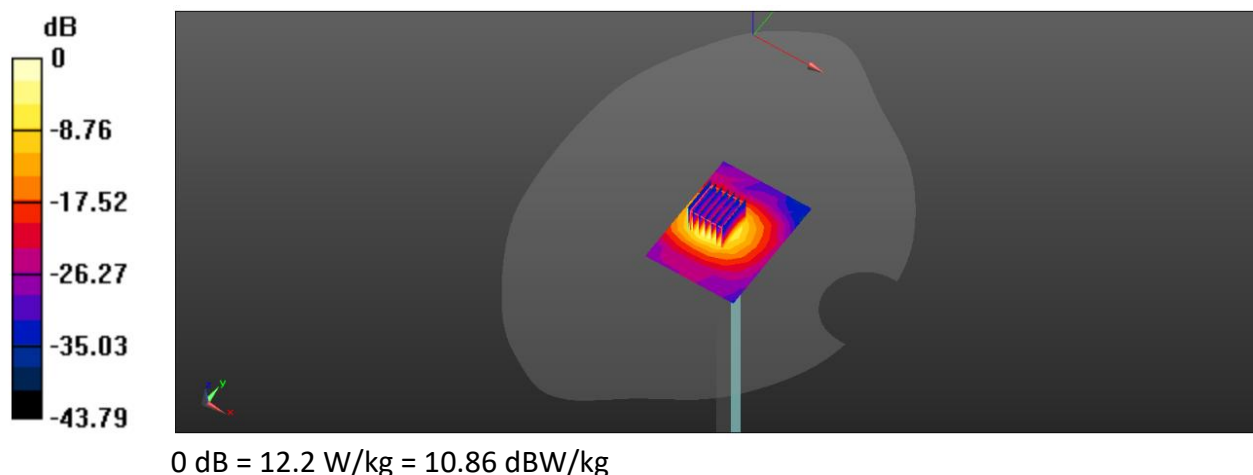
Peak SAR (extrapolated) = 37.39 W/kg

**SAR(1 g) = 8.16 W/kg; SAR(10 g) = 2.27 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.5 mm

Ratio of SAR at M2 to SAR at M1 = 48.5%

Maximum value of SAR (measured) = 12.2 W/kg



## System Check\_H5800

Communication System: UID 0, \_CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5G Head Medium parameters used:  $f = 5800$  MHz;  $\sigma = 5.125$  S/m;  $\epsilon_r = 33.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(4.9, 4.9, 4.9) @ 5800 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 1 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1888
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Configuration/Pin=100 mW/Area Scan (7x9x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 11.19 W/kg

**Configuration/Pin=100 mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 34.06 V/m; Power Drift = -0.01 dB

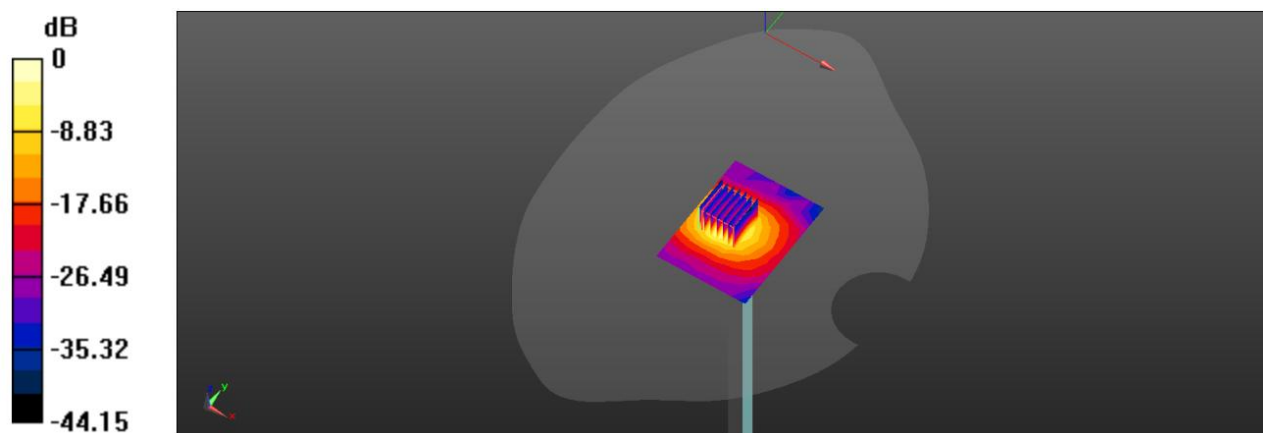
Peak SAR (extrapolated) = 38.25 W/kg

**SAR(1 g) = 7.83 W/kg; SAR(10 g) = 2.17 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 46.1%

Maximum value of SAR (measured) = 11.9 W/kg



0 dB = 11.9 W/kg = 10.67 dBW/kg

## ANNEX C: MAXIMUM GRAPH RESULTS

Date: 2026/04/10

### 2.4G BT\_BLE\_top Side\_CH19

Communication System: UID 0, Bluetooth (0); Frequency: 2440 MHz; Duty Cycle: 1:1  
Medium: 2450 Head Medium parameters used:  $f = 2440$  MHz;  $\sigma = 1.87$  S/m;  $\epsilon_r = 38.292$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(7.5, 7.5, 7.5) @ 2440 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (10x11x1):** Measurement grid: dx=12mm, dy=12mm  
Maximum value of SAR (measured) = 0.0837 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.6730 V/m; Power Drift = -0.07 dB

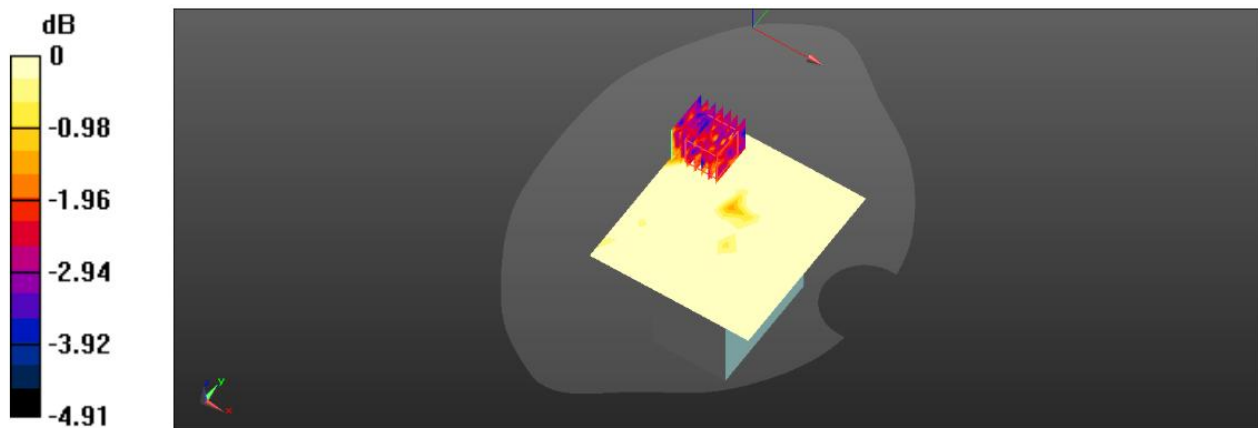
Peak SAR (extrapolated) = 0.140 W/kg

**SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.014 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 15 mm)

Ratio of SAR at M2 to SAR at M1 = 76.2%

Maximum value of SAR (measured) = 0.0548 W/kg



0 dB = 0.0548 W/kg = -12.61 dBW/kg

## 2.4G BT\_EDR\_top Side\_CH0

Communication System: UID 0, Bluetooth (0); Frequency: 2402 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:  $f = 2402$  MHz;  $\sigma = 1.826$  S/m;  $\epsilon_r = 38.449$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(7.5, 7.5, 7.5) @ 2402 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (10x11x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0666 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.09 dB

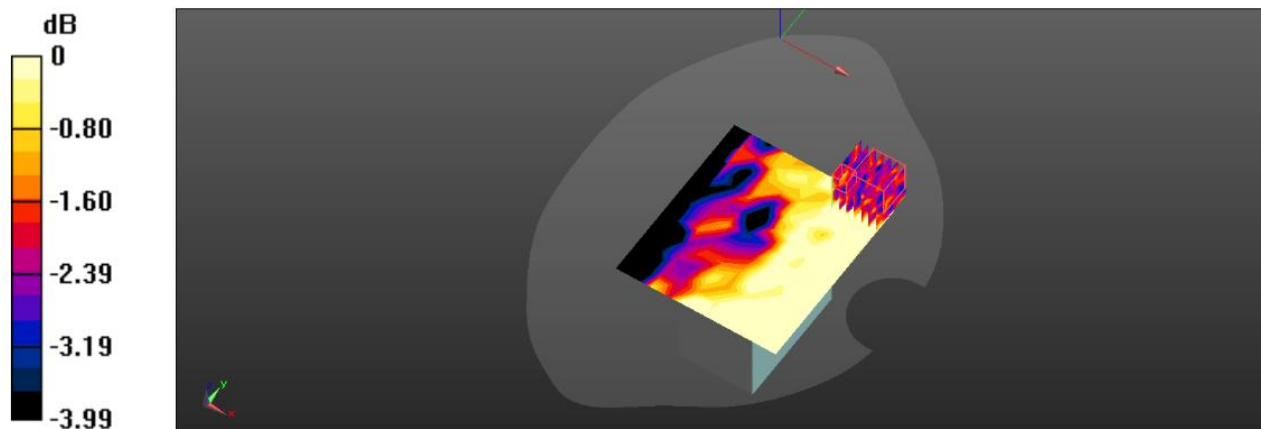
Peak SAR (extrapolated) = 0.0493 W/kg

**SAR(1 g) = 0.0285 W/kg; SAR(10 g) = 0.0126 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 15 mm)

Ratio of SAR at M2 to SAR at M1 = 55.6%

Maximum value of SAR (measured) = 0.0429 W/kg



0 dB = 0.0429 W/kg = -13.68 dBW/kg

## 2.4G WIFI\_11B\_top Side\_CH6

Communication System: UID 0, WIFI 11B (0); Frequency: 2437 MHz; Duty Cycle: 1:1.42561 Medium: 2450 Head Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.862$  S/m;  $\epsilon_r = 38.307$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(7.5, 7.5, 7.5) @ 2437 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (10x11x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 1.17 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.88 V/m; Power Drift = -0.05 dB

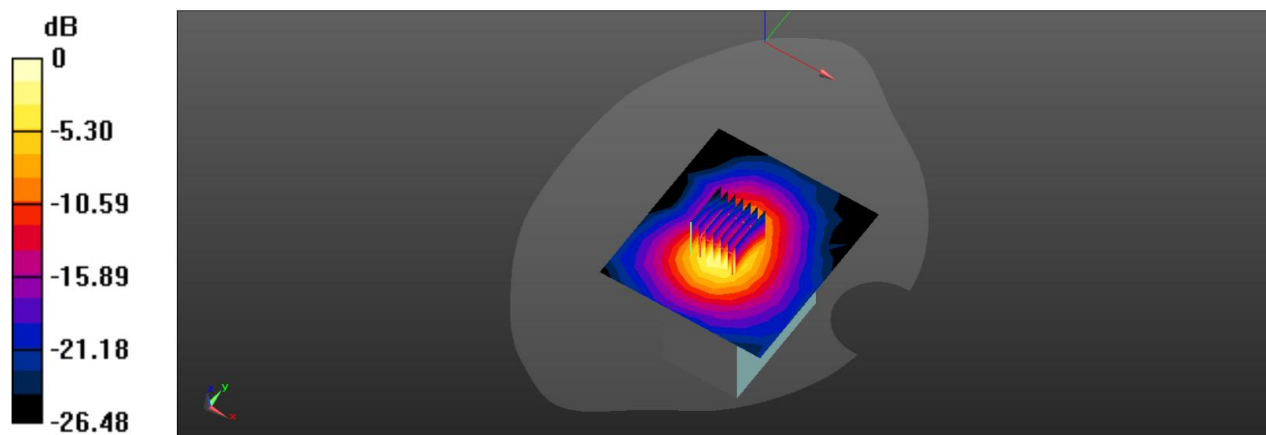
Peak SAR (extrapolated) = 1.78 W/kg

**SAR(1 g) = 0.726 W/kg; SAR(10 g) = 0.322 W/kg**

Smallest distance from peaks to all points 3 dB below = 8.9 mm

Ratio of SAR at M2 to SAR at M1 = 38.6%

Maximum value of SAR (measured) = 1.34 W/kg



0 dB = 1.34 W/kg = 1.27 dBW/kg

## 5G WIFI\_11A\_top Side\_CH48

Communication System: UID 0, WIFI 11A (0); Frequency: 5240 MHz; Duty Cycle: 1:1.09396  
Medium: 5G Head Medium parameters used:  $f = 5240 \text{ MHz}$ ;  $\sigma = 4.595 \text{ S/m}$ ;  $\epsilon_r = 34.786$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

Ambient Temperature:  $22.0 \text{ }^{\circ}\text{C}$ ; Liquid Temperature:  $21.5 \text{ }^{\circ}\text{C}$

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(5.35, 5.35, 5.35) @ 5240 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (11x13x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (measured) =  $2.54 \text{ W/kg}$

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2\text{mm}$

Reference Value =  $25.63 \text{ V/m}$ ; Power Drift =  $0.05 \text{ dB}$

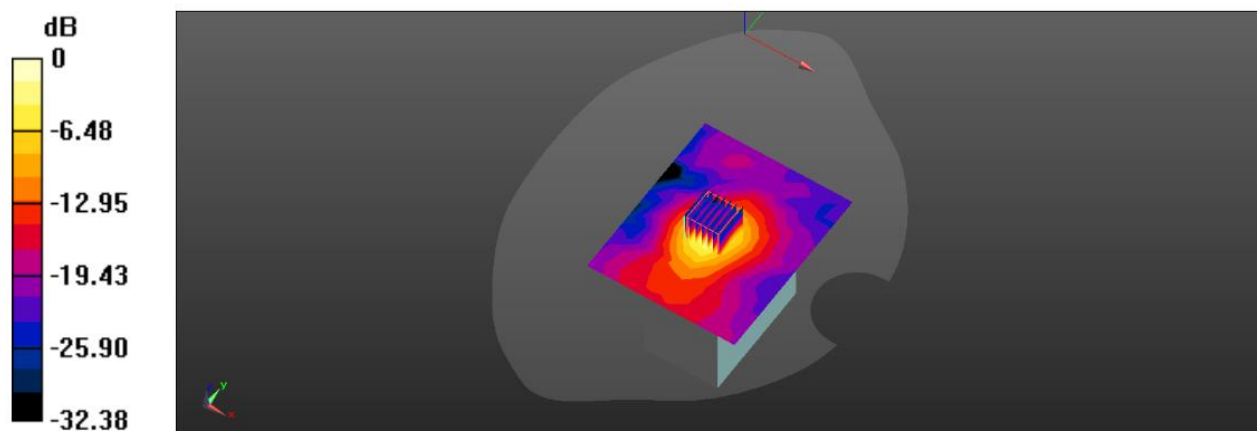
Peak SAR (extrapolated) =  $4.06 \text{ W/kg}$

**SAR(1 g) =  $0.67 \text{ W/kg}$ ; SAR(10 g) =  $0.199 \text{ W/kg}$**

Smallest distance from peaks to all points 3 dB below =  $7.9 \text{ mm}$

Ratio of SAR at M2 to SAR at M1 =  $57.8\%$

Maximum value of SAR (measured) =  $2.83 \text{ W/kg}$



0 dB =  $2.83 \text{ W/kg}$  =  $4.52 \text{ dBW/kg}$

## 5G WIFI\_11AX\_top Side\_CH52

Communication System: UID 0, WIFI 11AX (0); Frequency: 5260 MHz; Duty Cycle: 1:1.09396  
Medium: 5G Head Medium parameters used:  $f = 5260$  MHz;  $\sigma = 4.615$  S/m;  $\epsilon_r = 34.763$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(5.35, 5.35, 5.35) @ 5260 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (11x13x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.63 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 26.59 V/m; Power Drift = -0.04 dB

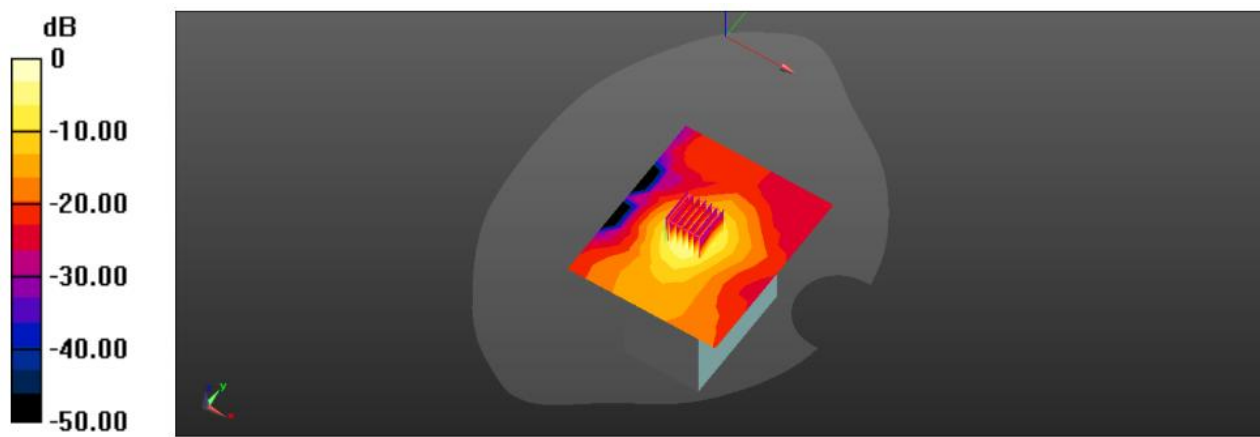
Peak SAR (extrapolated) = 4.31 W/kg

**SAR(1 g) = 0.41 W/kg; SAR(10 g) = 0.135 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 57.4%

Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 3.00 W/kg = 4.77 dBW/kg

## 5G WIFI\_11A\_top Side\_CH100

Communication System: UID 0, WIFI 11A (0); Frequency: 5500 MHz; Duty Cycle: 1:1.09396  
Medium: 5G Head Medium parameters used:  $f = 5500$  MHz;  $\sigma = 4.815$  S/m;  $\epsilon_r = 34.47$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Ambient Temperature: 22.0 °C; Liquid Temperature: 21.5 °C

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(4.8, 4.8, 4.8) @ 5500 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (11x13x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.52 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 25.17 V/m; Power Drift = -0.01 dB

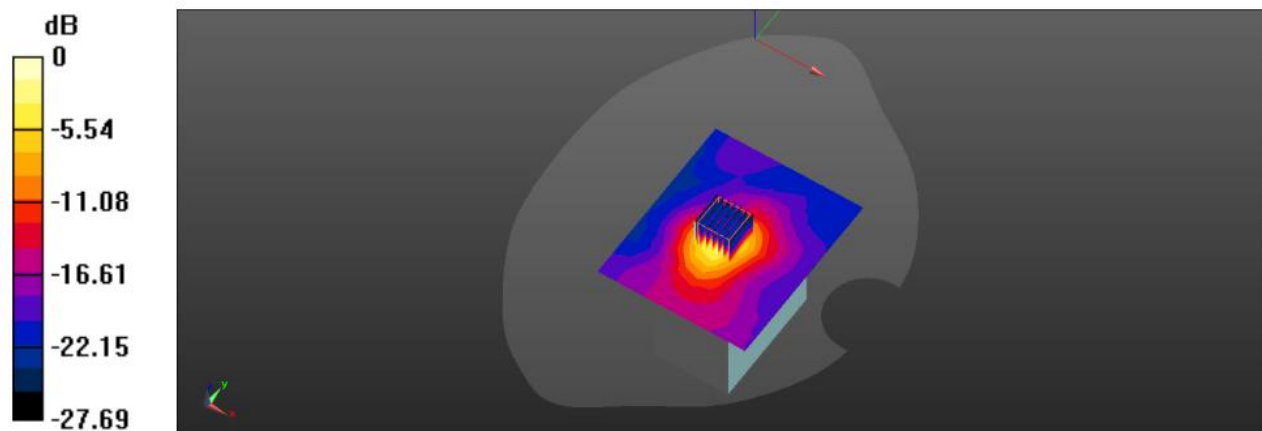
Peak SAR (extrapolated) = 4.09 W/kg

**SAR(1 g) = 0.37 W/kg; SAR(10 g) = 0.119 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 56.7%

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



0 dB = 2.81 W/kg = 4.49 dBW/kg

Date: 2026/04/10

## 5G WIFI\_11AX\_top Side\_CH149

Communication System: UID 0, WIFI 11AX (0); Frequency: 5745 MHz; Duty Cycle: 1:1.09396  
Medium: 5G Head Medium parameters used:  $f = 5745 \text{ MHz}$ ;  $\sigma = 5.065 \text{ S/m}$ ;  $\epsilon_r = 34.046$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

Ambient Temperature:  $22.0 \text{ }^{\circ}\text{C}$ ; Liquid Temperature:  $21.5 \text{ }^{\circ}\text{C}$

### DASY Configuration:

- Probe: EX3DV4 - SN7322; ConvF(4.9, 4.9, 4.9) @ 5745 MHz; Calibrated: 2025/04/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1473; Calibrated: 2025/04/21
- Phantom: SAM 2 V5.0 (30deg); Type: QD 000 P40 CD; Serial: 1891
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Area Scan (11x13x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (measured) =  $1.11 \text{ W/kg}$

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2\text{mm}$

Reference Value =  $16.36 \text{ V/m}$ ; Power Drift =  $0.00 \text{ dB}$

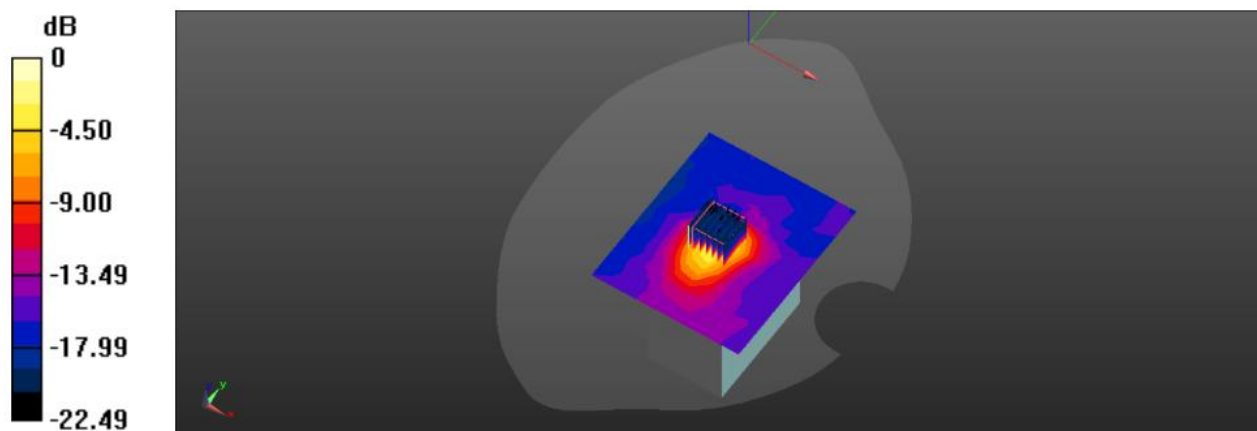
Peak SAR (extrapolated) =  $1.84 \text{ W/kg}$

**SAR(1 g) =  $0.227 \text{ W/kg}$ ; SAR(10 g) =  $0.071 \text{ W/kg}$**

Smallest distance from peaks to all points 3 dB below =  $7.9 \text{ mm}$

Ratio of SAR at M2 to SAR at M1 =  $54.6\%$

Maximum value of SAR (measured) =  $1.23 \text{ W/kg}$



0 dB =  $1.23 \text{ W/kg}$  =  $0.90 \text{ dBW/kg}$

## ANNEX D: SYSTEM VALIDATION

The SAR system must be validated against its performance specifications before it is deployed. When SAR probes, system components or software are changed, upgraded or recalibrated, these must be validated with the SAR system(s) that operates with such components.

Table D.1: System Validation Part 1

| Head Liquid         |                      |                 |               |                        |                  |
|---------------------|----------------------|-----------------|---------------|------------------------|------------------|
| Date of Measurement | Dipole SN            | Return Loss(dB) | $\Delta 20\%$ | Impedance ( $\Omega$ ) | $\Delta 5\Omega$ |
| 3/14/2025           | D750V3_1141          | -29.9           | 8.70%         | 51.9                   | 1.3              |
| 3/14/2026           |                      | -27.3           |               | 50.6                   |                  |
| 11/4/2024           | D835V2_4d196         | -28.8           | 4.86%         | 48.7                   | 2.4              |
| 11/4/2025           |                      | -30.2           |               | 46.3                   |                  |
| 11/6/2024           | D900V2_1d182         | -31.2           | 3.53%         | 51.1                   | 1.6              |
| 11/6/2025           |                      | -30.1           |               | 52.7                   |                  |
| 11/6/2024           | D1750V2_1138         | -32             | 4.69%         | 49.7                   | 1.1              |
| 11/6/2025           |                      | -30.5           |               | 50.8                   |                  |
| 11/4/2024           | D1900V2_5d203        | -23.8           | 6.72%         | 51.1                   | 1.3              |
| 11/4/2025           |                      | -25.4           |               | 49.8                   |                  |
| 11/6/2024           | D2450V2_966          | -27             | 4.44%         | 51.5                   | 1.6              |
| 11/6/2025           |                      | -25.8           |               | 49.9                   |                  |
| 11/8/2024           | D2600V2_1108         | -24             | 5.42%         | 47.1                   | 2.6              |
| 11/8/2025           |                      | -22.7           |               | 44.5                   |                  |
| 11/5/2024           | D5GHzV2_1218/5200MHz | -29.6           | 6.08%         | 50.9                   | 2.2              |
| 11/5/2025           |                      | -31.4           |               | 48.7                   |                  |
| 11/5/2024           | D5GHzV2_1218/5300MHz | -31.5           | 3.17%         | 47.8                   | 2.3              |
| 11/5/2025           |                      | -30.5           |               | 45.5                   |                  |
| 11/5/2024           | D5GHzV2_1218/5600MHz | -32.4           | 9.26%         | 52.4                   | 1.6              |
| 11/5/2025           |                      | -29.4           |               | 50.8                   |                  |
| 11/5/2024           | D5GHzV2_1218/5800MHz | -21.4           | 9.35%         | 54                     | 2.5              |
| 11/5/2025           |                      | -23.4           |               | 51.5                   |                  |

Table D.2: System Validation Part 2

| Date of Measurement | Dipole SN            | Liquid name | Frequency | Permittivity | Conductivity   |
|---------------------|----------------------|-------------|-----------|--------------|----------------|
|                     |                      |             | point     | $\epsilon$   | $\sigma$ (S/m) |
| 3/14/2025           | D750V3_1141          | Head        | 750MHz    | 42.37        | 0.894          |
| 3/14/2026           |                      |             |           | 42.28        | 0.899          |
| 11/4/2024           | D835V2_4d196         |             | 835MHz    | 42.22        | 0.896          |
| 11/4/2025           |                      |             |           | 42.16        | 0.897          |
| 11/6/2024           | D900V2_1d182         |             | 900MHz    | 41.3         | 0.96           |
| 11/6/2025           |                      |             |           | 41.12        | 0.968          |
| 11/6/2024           | D1750V2_1138         |             | 1750MHz   | 40.57        | 1.4            |
| 11/6/2025           |                      |             |           | 40.39        | 1.42           |
| 11/4/2024           | D1900V2_5d203        |             | 1900MHz   | 40.38        | 1.38           |
| 11/4/2025           |                      |             |           | 40.36        | 1.41           |
| 11/6/2024           | D2450V2_966          |             | 2450MHz   | 38.25        | 1.88           |
| 11/6/2025           |                      |             |           | 38.19        | 1.91           |
| 11/8/2024           | D2600V2_1108         |             | 2600MHz   | 37.62        | 2.06           |
| 11/8/2025           |                      |             |           | 37.58        | 2.09           |
| 11/5/2024           | D5GHzV2_1218/5200MHz |             | 5200MHz   | 34.81        | 4.56           |
| 11/5/2025           |                      |             |           | 34.76        | 4.61           |
| 11/5/2024           | D5GHzV2_1218/5300MHz |             | 5300MHz   | 34.73        | 4.62           |
| 11/5/2025           |                      |             |           | 34.66        | 4.67           |
| 11/5/2024           | D5GHzV2_1218/5600MHz |             | 5600MHz   | 34.27        | 4.96           |
| 11/5/2025           |                      |             |           | 34.24        | 5.01           |
| 11/5/2024           | D5GHzV2_1218/5800MHz |             | 5800MHz   | 33.94        | 5.12           |
| 11/5/2025           |                      |             |           | 33.85        | 5.17           |

# ANNEX E: PROBE, DAE and DIPOLE CALIBRATION CERTIFICATE



Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2117  
E-mail: emf@caict.ac.cn http://www.caict.ac.cn



中国认可  
国际互认  
校准  
CAICT  
CALIBRATION  
CNAS L0570

Client

Intertek

Certificate No: 25J02Z000216

## CALIBRATION CERTIFICATE

Object EX3DV4 - SN : 7322

Calibration Procedure(s) FF-Z11-004-02  
Calibration Procedures for Dosimetric E-field Probes

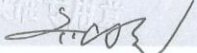
Calibration date: April 21, 2025.

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 #               | Cal Date(Calibrated by, Certificate No.)  | Scheduled Calibration |
|--------------------------|--------------------|-------------------------------------------|-----------------------|
| Power Meter NRP2         | 106277             | 18-Oct-24(CTTL, No.24J02X101459)          | Oct-25                |
| Power sensor NRP8S       | 104291             | 18-Oct-24(CTTL, No.24J02X101459)          | Oct-25                |
| Power sensor NRP8S       | 104292             | 18-Oct-24(CTTL, No.24J02X101459)          | Oct-25                |
| Reference 10dBAttenuator | 18N50W-10dB        | 22-Jan-25(CTTL, No.25J02X000465)          | Jan-27                |
| Reference 20dBAttenuator | 18N50W-20dB        | 22-Jan-25(CTTL, No.25J02X000466)          | Jan-27                |
| Reference Probe EX3DV4   | SN 7464            | 28-Jan-25(SPEAG, No.EX-7464_Jan25)        | Jan-26                |
| DAE4                     | SN 1555            | 16-Aug-24(SPEAG, No.DAE4-1555_Aug24)      | Aug-25                |
| Secondary Standards      | ID #               | Cal Date(Calibrated by, Certificate No.)  | Scheduled Calibration |
| SignalGenerator MG3700A  | 6201052605         | 12-Jun-24(CTTL, No.24J02X005419)          | Jun-25                |
| SignalGenerator APSIN26G | 181-33A6D0700-1959 | 27-Mar-25(CTTL, No.25J02X001962)          | Mar-26                |
| Network Analyzer E5071C  | MY46110673         | 18-Dec-24(CTTL, No.24J02X103932)          | Dec-25                |
| Reference 10dBAttenuator | BT0520             | 11-May-23(CTTL, No.J23X04061)             | May-25                |
| Reference 20dBAttenuator | BT0267             | 11-May-23(CTTL, No.J23X04062)             | May-25                |
| OCP DAKS                 | SN 0015            | 09-Oct-24(SPEAG, No. OCP-DAKS-0015_Oct24) | Oct-25                |

|                | Name        | Function           | Signature                                                                             |
|----------------|-------------|--------------------|---------------------------------------------------------------------------------------|
| Calibrated by: | Yu Zongying | SAR Test Engineer  |   |
| Reviewed by:   | Lin Jun     | SAR Test Engineer  |  |
| Approved by:   | Qi Dianyuan | SAR Project Leader |  |

Issued: April 23, 2025

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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 $\Phi$   | $\Phi$ rotation around probe axis                                                                                                           |
| Polarization $\theta$ | $\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i<br>$\theta=0$ 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:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- 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  $\theta=0$  ( $f \leq 900\text{MHz}$  in TEM-cell;  $f > 1800\text{MHz}$ : waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the  $E^2$ -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 (no uncertainty required). DCP does not depend on frequency nor media.
- PAR:** PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>:** A,B,C 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  $f \leq 800\text{MHz}$ ) and inside waveguide using analytical field distributions based on power measurements for  $f > 800\text{MHz}$ . The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued 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  $\pm 50\text{MHz}$  to  $\pm 100\text{MHz}$ .
- 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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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:7322

### Basic Calibration Parameters

|                                      | Sensor X | Sensor Y | Sensor Z | Unc ( $k=2$ ) |
|--------------------------------------|----------|----------|----------|---------------|
| Norm( $\mu V/(V/m)^2$ ) <sup>A</sup> | 0.45     | 0.56     | 0.53     | ±10.0%        |
| DCP(mV) <sup>B</sup>                 | 97.3     | 98.1     | 100.6    |               |

### Modulation Calibration Parameters

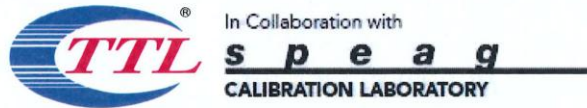
| UID | Communication System Name |   | A<br>dB | B<br>dB/μV | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>( $k=2$ ) |
|-----|---------------------------|---|---------|------------|-----|---------|----------|-------------------------------|
| 0   | CW                        | X | 0.0     | 0.0        | 1.0 | 0.00    | 164.9    | ±2.1%                         |
|     |                           | Y | 0.0     | 0.0        | 1.0 |         | 183.9    |                               |
|     |                           | Z | 0.0     | 0.0        | 1.0 |         | 183.0    |                               |

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 Page 4).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<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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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:7322

### Calibration Parameter Determined in Head Tissue Simulating Media

| f [MHz] <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-------------|
| 750                  | 41.9                               | 0.89                            | 10.12   | 10.12   | 10.12   | 0.16               | 1.18                    | ±12.7%      |
| 835                  | 41.5                               | 0.90                            | 9.80    | 9.80    | 9.80    | 0.23               | 1.07                    | ±12.7%      |
| 1750                 | 40.1                               | 1.37                            | 8.45    | 8.45    | 8.45    | 0.25               | 0.90                    | ±12.7%      |
| 1900                 | 40.0                               | 1.40                            | 8.10    | 8.10    | 8.10    | 0.27               | 1.03                    | ±12.7%      |
| 2300                 | 39.5                               | 1.67                            | 7.75    | 7.75    | 7.75    | 0.52               | 0.70                    | ±12.7%      |
| 2450                 | 39.2                               | 1.80                            | 7.50    | 7.50    | 7.50    | 0.55               | 0.70                    | ±12.7%      |
| 2600                 | 39.0                               | 1.96                            | 7.33    | 7.33    | 7.33    | 0.65               | 0.66                    | ±12.7%      |
| 5250                 | 35.9                               | 4.71                            | 5.35    | 5.35    | 5.35    | 0.50               | 1.30                    | ±13.9%      |
| 5600                 | 35.5                               | 5.07                            | 4.80    | 4.80    | 4.80    | 0.55               | 1.20                    | ±13.9%      |
| 5750                 | 35.4                               | 5.22                            | 4.90    | 4.90    | 4.90    | 0.55               | 1.20                    | ±13.9%      |

<sup>C</sup> Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of 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. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequency up to 6 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<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 the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

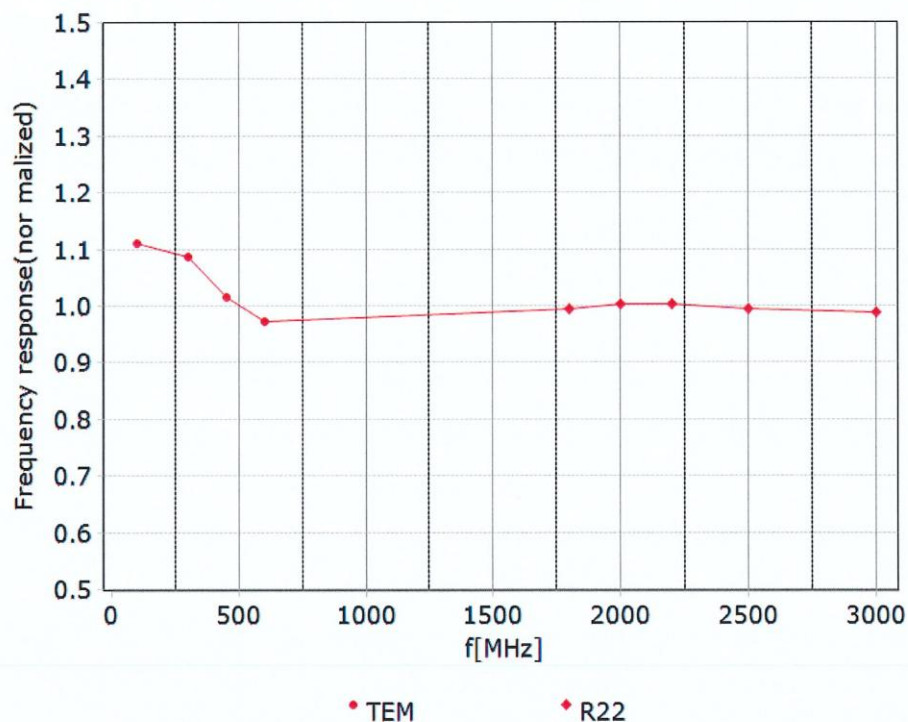


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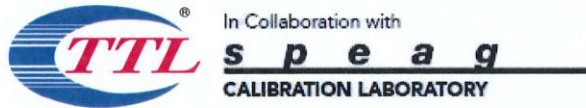


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## Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 7.4\%$  ( $k=2$ )

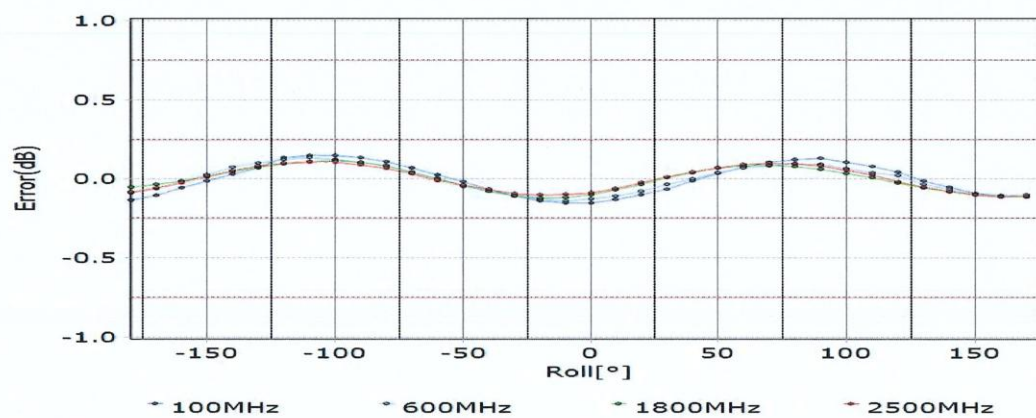
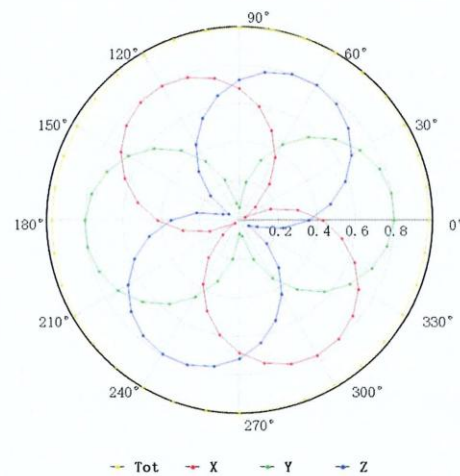
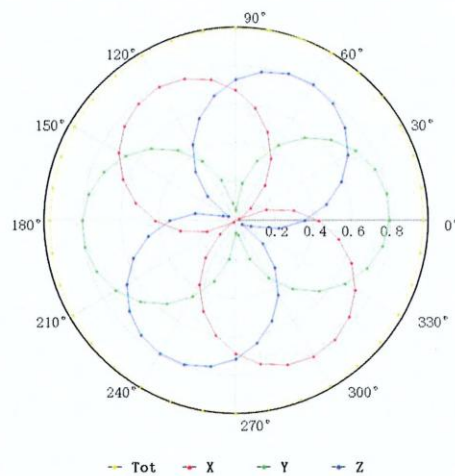


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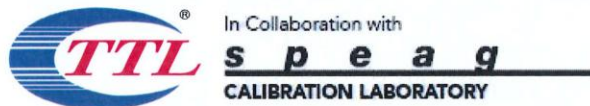
## Receiving Pattern ( $\Phi$ ), $\theta=0^\circ$

**f=600 MHz, TEM**

**f=1800 MHz, R22**

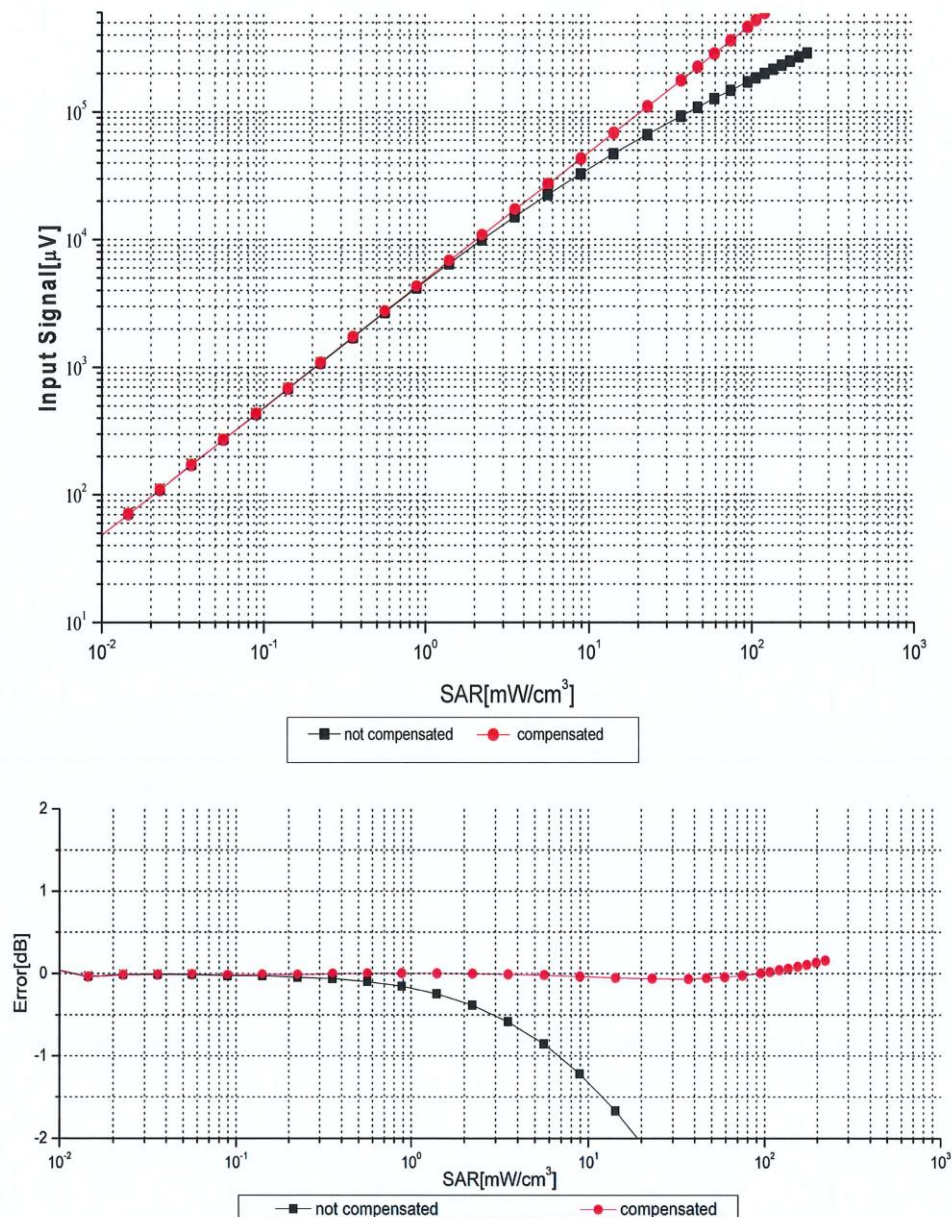


Uncertainty of Axial Isotropy Assessment:  $\pm 1.2\%$  ( $k=2$ )



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## Dynamic Range f(SAR<sub>head</sub>) (TEM cell, f = 900 MHz)



Uncertainty of Linearity Assessment:  $\pm 0.9\%$  ( $k=2$ )



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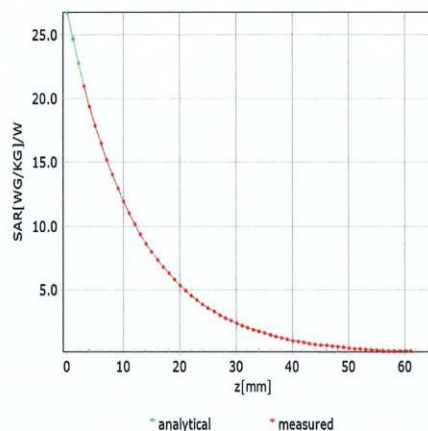
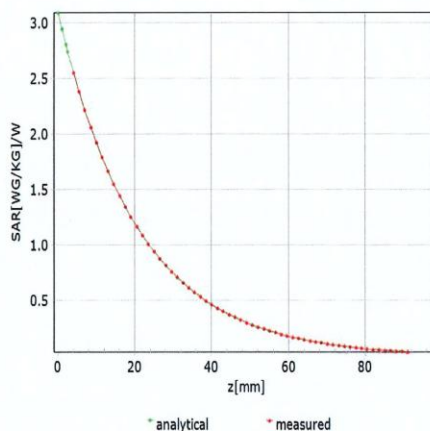


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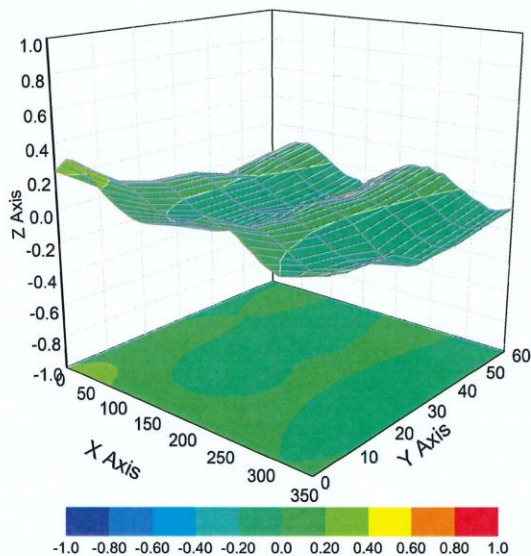
## Conversion Factor Assessment

**f=750 MHz,WGLS R9(H\_convF)**

**f=1750 MHz,WGLS R22(H\_convF)**



## Deviation from Isotropy in Liquid



**Uncertainty of Spherical Isotropy Assessment:  $\pm 3.2\%$  ( $k=2$ )**



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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:7322

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | 43.8       |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disable    |
| Probe Overall Length                          | 337mm      |
| Probe Body Diameter                           | 10mm       |
| Tip Length                                    | 9mm        |
| Tip Diameter                                  | 2.5mm      |
| Probe Tip to Sensor X Calibration Point       | 1mm        |
| Probe Tip to Sensor Y Calibration Point       | 1mm        |
| Probe Tip to Sensor Z Calibration Point       | 1mm        |
| Recommended Measurement Distance from Surface | 1.4mm      |



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Client : **Intertek**

Certificate No: 25J02Z000215

## CALIBRATION CERTIFICATE

Object **DAE4 - SN: 1473**

Calibration Procedure(s) **FF-Z11-002-01**  
**Calibration Procedure for the Data Acquisition Electronics (DAEx)**

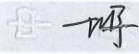
Calibration date: **April 21, 2025**

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)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards      | ID #    | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
|------------------------|---------|------------------------------------------|-----------------------|
| Process Calibrator 753 | 1971018 | 11-Jun-24 (CTTL, No.24J02X005147)        | Jun-25                |

|                | Name        | Function           | Signature                                                                             |
|----------------|-------------|--------------------|---------------------------------------------------------------------------------------|
| Calibrated by: | Yu Zongying | SAR Test Engineer  |  |
| Reviewed by:   | Lin Jun     | SAR Test Engineer  |  |
| Approved by:   | Qi Dianyuan | SAR Project Leader |  |

Issued: April 23, 2025

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