# TEST REPORT

| | | |
|---|---|---|
| **Reference No.**..... | : | WTX26X05135697W |
| **FCC ID**..... | : | 2BVYI-OBEXCOM |
| **Applicant** ..... | : | POC SWEDEN AB |
| **Address**..... | : | Nackagatan 4,11649 Stockholm, Sweden |
| **Manufacturer**..... | | Guoguang Electric Co., Ltd |
| **Address**..... | | No.8 Jinghu Road, Xinya Street, Huadu Reg, Guangzhou, Guangdong, P.R.China |
| **Product Name** ..... | : | OBEX CONTOUR COMMUNICATION |
| **Model No.**..... | : | OBEX COMMUNICATION HEADSET |
| **Standards** ..... | : | FCC Part 2.1093,<br>IEEE Std C95.1: 2019<br>IEEE C95.3: 2021<br>IEC/IEEE 62209-1528:2020 |
| **Date of Receipt sample** .... | : | 2026-05-18 |
| **Date of Test**..... | : | 2026-05-19 to 2026-06-12 |
| **Date of Issue** ..... | : | 2026-06-12 |
| **Test Report Form No.** ..... | : | WTX_Part2_1093W |
| **Test Result**..... | : | **Pass** |

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.


**Prepared By:**

**Waltek Testing Group (Shenzhen) Co., Ltd.**

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,

Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn


Tested by:

Lily Yang /Project Engineer

Approved by:

Jason Su/Manager

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## Report version

| Version No. | Date of issue | Description |
|---|---|---|
| Rev.00 | 2026-06-12 | Original |
| / | / | / |

# 1. General Information

## 1.1 Product Description for Equipment Under Test (EUT)

| **General Description of EUT** | |
|---|---|
| Product Name: | OBEX CONTOUR COMMUNICATION |
| Trade Name: | / |
| Model No.: | OBEX COMMUNICATION HEADSET |
| Adding Model(s): | / |
| Rated Voltage: | DC 5V; DC 3.8V by Battery |
| Battery Capacity: | 630mAh |
| Power Adapter Model: | / |
| Software Version: | V0.5.0 |
| Hardware Version: | V0.2 |
| | |
| *Note: The test data is gathered from a production sample provided by the manufacturer.* | |

| **Technical Characteristics of EUT:** | |
|---|---|
| **Bluetooth** | |
| Bluetooth Version: | Bluetooth V5.2 |
| Frequency Range: | 2402-2480MHz |
| RF Output Power: | 6.814dBm (Conducted) |
| Modulation: | GFSK, π/4 DQPSK, 8DPSK |
| Quantity of Channels: | 79/40 |
| Channel Separation: | 1MHz/2MHz |
| Antenna Type: | PCB Antenna |
| Antenna Gain: | 3.14dBi |
| *Note: The data is provided by the customer and can affect the validity of results.* | |

## 1.2 Test Standards

The following report is accordance with FCC 47 CFR Part 2.1093, IEEE Std C95.1: 2019, IEEE C95.3: 2021, and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02.

The objective is to determine compliance with FCC Part 2.1093 of the Federal Communication Commissions rules.

***Maintenance of compliance*** is the responsibility of the manufacturer. Any modification of the product, which is result in lowering the emission, should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02. The public notice KDB 447498 D01 v06 for Mobile and Portable Devices RF Exposure Procedure also.

## 1.4 Test Facility

Address of the test laboratory
Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.
Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

**FCC – Registration No.: 125990**
Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010.Test Firm Registration Number is 125990.

**Industry Canada (IC) Registration No.: 11464A**
The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certifi cation and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A and the CAB identifier is CN0057.

## 2. Summary of Test Results

The maximum results of Specific Absorption Rate (SAR) have found during testing are as follows:

| **Frequency Band** | **Body (0mm Gap)** | **$SAR_{1g}$ Limit (W/kg)** |
|---|---|---|
| | **Maximum $SAR_{1g}$ (W/kg)** | |
| Bluetooth | **0.151** | 1.6 |

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR Part 2.1093 and IEEE Std C95.1: 2019, and had been tested in accordance with the measurement methods and procedure specified in KDB 865664 D01 v01r04, KDB 865664 D02 v01r02.

# 3. Specific Absorption Rate (SAR)

## 3.1 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.

## 3.2 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:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

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

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

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

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

# 4. SAR Measurement System

## 4.1 The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:
- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

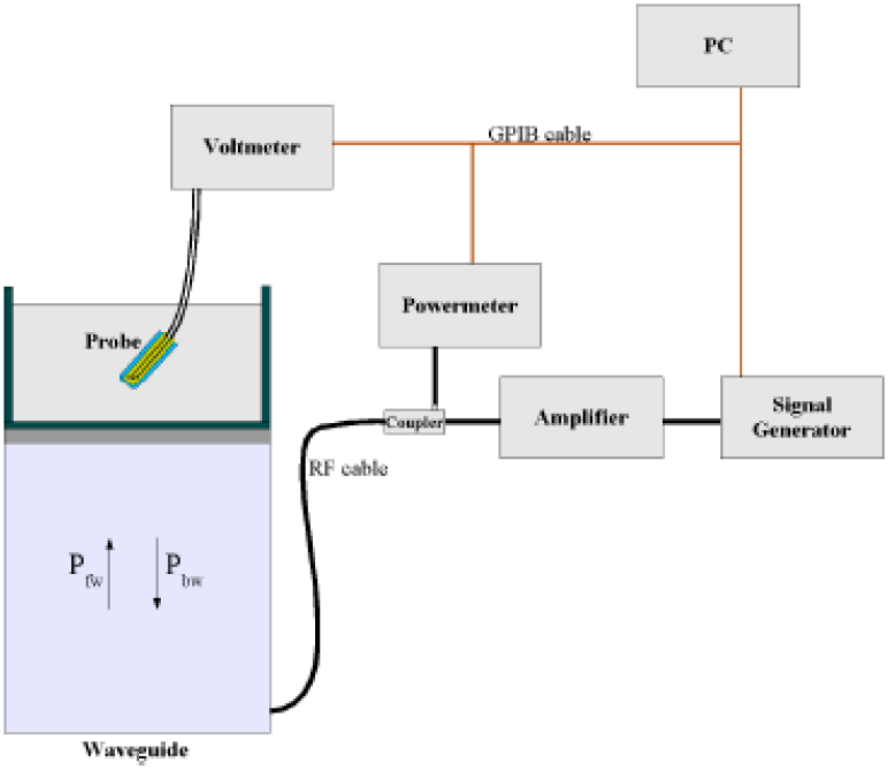
The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

## 4.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SSE2 0725-EPGO-446, and refer to the calibration report for probe parameters.

Probe calibration is realized, in compliance with IEC/IEEE 62209-1528:2020 STD, with CALISAR, Antenna proprietary calibration system. The calibration is performed with the IEC/IEEE 62209-1528:2020 annexes technique using reference guide at the five frequencies.




$$SAR = \frac{4\left(P_{fw} - P_{bw}\right)}{ab\delta} \cos^2\left(\pi \frac{y}{a}\right) e^{-(2z/\delta)}$$

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b =Waveguide dimensions

I = Skin depth

Keithley configuration:

Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

CF(N)=SAR(N)/Vlin(N) (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

Vlin(N)=V(N)*(1+V(N)/DCP(N)) (N=1,2,3)

where DCP is the diode compression point in mV.

## 4.3 Probe Calibration Process

**Dosimetric Assessment Procedure**

Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe 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/cm2) using an with CALISAR, Antenna proprietary calibration system.

**Free Space Assessment Procedure**

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 rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1mW/cm2.

**Temperature Assessment Procedure**

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated head 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 is proportional to ΔT/Δt, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

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

Where:

$\sigma$ = simulated tissue conductivity,

$\rho$ = Tissue density (1.25 g/cm3 for brain tissue)

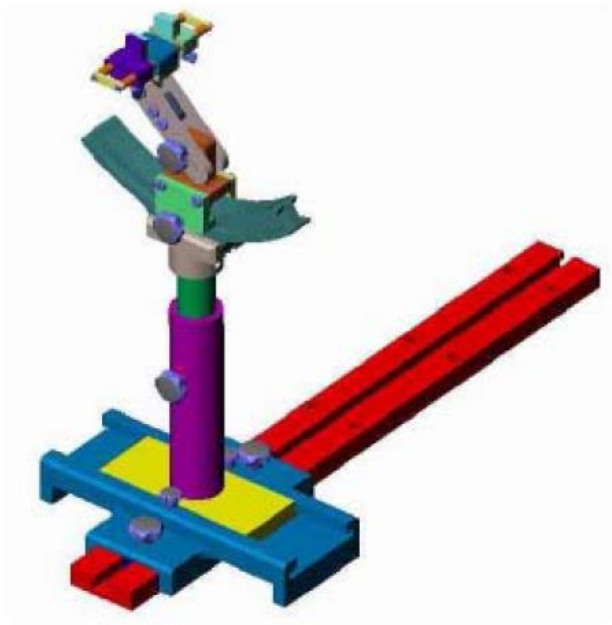
## 4.4 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a

cover, which prevents the evaporation of the liquid.

## 4.5 Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



| System Material | Permittivity | Loss Tangent |
|---|---|---|
| Delrin | 3.7 | 0.005 |

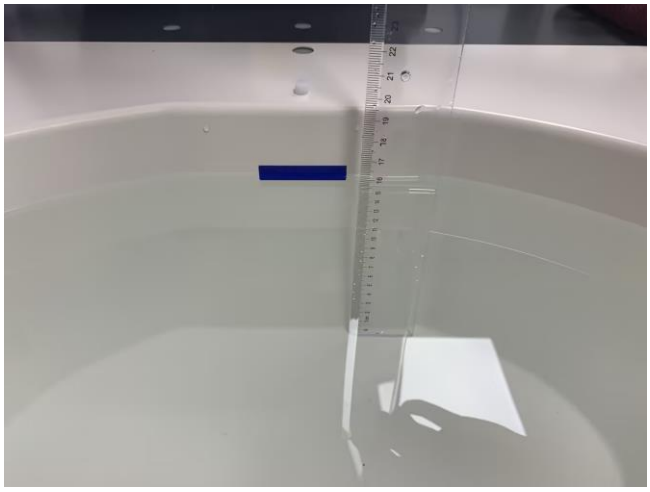
## 4.6 Test Equipment List

| Fixed asset Number | Description | Manufacturer | Model | Serial Number | Cal. Date | Due. Date |
|---|---|---|---|---|---|---|
| WTXE1105A1002 | E-Field Probe | MVG | SSE2 | 0725-EPGO-446 | 2026-03-03 | 2027-03-02 |
| WTXE1053A1001-007 | 2450MHz Dipole | MVG | SID2450 | SN 13/15 DIP 2G450-364 | 2025-12-30 | 2028-12-29 |
| WTXE1053A1001-011 | Dielectric Probe | SATIMO | SCLMP | SN 47/12 OCPG49 | 2026-02-05 | 2027-02-04 |
| WTXE1075A1003 | Power meter | Keithley | 3500 | 1232959 | 2026-02-05 | 2027-02-04 |
| WTXE1075A1002 | Power meter | Keithley | 3500 | 1162591 | 2026-02-05 | 2027-02-04 |
| WTXE1104A1003 | EXG Analog Signal Generator | KEYSIGHT | N5173B | MY61252892 | 2026-02-06 | 2027-02-05 |
| WTXE1022A1002 | GSM Tester | Rohde & Schwarz | CMU200 | 114403 | 2026-02-06 | 2027-02-05 |
| WTXE1105A1001 | Communications Tester | Rohde & Schwarz | CMW500 | 170903 | 2026-02-05 | 2027-02-04 |
| WTXW1105A1137 | Vector Network Analvzers | Rohde & Schwarz | ZVB 8 | 101525 | 2026-02-06 | 2027-02-05 |
| WTXE1076A1001 | Power Divider | HP | 11636B | JC-2017-10-002 | 2026-02-05 | 2027-02-04 |
| WTXW1105A1135 | RF Attenuator | Pasternack | N-JK | / | 2026-02-05 | 2027-02-04 |
| WTXW1105A1136 | RF Attenuator | Pasternack | N-JK | / | 2026-02-05 | 2027-02-04 |
| WTXE1103A1003 | Attenuator | Pasternack | PE4007-4 | / | 2026-02-05 | 2027-02-04 |
| WTXE1091A1001 | UXM 5G Wireless Test Platform | KEYSIGHT | E7515B | MY57450525 | 2026-02-06 | 2027-02-05 |

# 5. Tissue Simulating Liquids

## 5.1 Composition of Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with SMTIMO, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. Please see the following photos for the liquid height.



**Liquid Height for Body SAR**

**The Composition of Tissue Simulating Liquid**

| Frequency (MHz) | Water (%) | Salt (%) | Sugar (%) | HEC (%) | Preventol (%) | DGBE (%) |
|---|---|---|---|---|---|---|
| **Head** | | | | | | |
| 750 | 41.1 | 1.4 | 57.0 | 0.2 | 0.3 | 0 |
| 835 | 40.3 | 1.38 | 57.9 | 0.24 | 0.18 | 0 |
| 900 | 40.3 | 1.38 | 57.9 | 0.24 | 0.18 | 0 |
| 1800-2000 | 55.24 | 0.31 | 0 | 0 | 0 | 44.45 |
| 2300 | 55.40 | 0.08 | 0 | 0 | 0 | 44.52 |
| 2450 | 55.00 | 0 | 0 | 0 | 0 | 45.00 |
| 2600 | 55.242 | 0.306 | 0 | 0 | 0 | 44.452 |
| 3500 | 71.6 | 1.3 | 10.9 | 0.7 | 0.7 | 14.8 |
| 3700 | 71.7 | 1.3 | 10.8 | 0.6 | 0.8 | 14.8 |

| Frequency (MHz) | Water (%) | Hexyl Carbitol (%) | Triton X-100 (%) |
|---|---|---|---|
| **Head** | | | |
| 5000-6000 | 65.52 | 17.24 | 17.24 |

## 5.2 Tissue Dielectric Parameters for Head and Body Phantoms

According to FCC KDBs, IEC/IEEE 62209-1528:2020 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

| **Target Frequency (MHz)** | **Head** | | **Body** | |
|---|---|---|---|---|
| | **Conductivity** ($\sigma$) | **Permittivity** ($\varepsilon_r$) | **Conductivity** ($\sigma$) | **Permittivity** ($\varepsilon_r$) |
| 150 | 0.76 | 52.3 | 0.80 | 61.9 |
| 300 | 0.87 | 45.3 | 0.92 | 58.2 |
| 450 | 0.87 | 43.5 | 0.94 | 56.7 |
| 750 | 0.89 | 41.9 | 0.96 | 55.5 |
| 835 | 0.90 | 41.5 | 0.97 | 55.2 |
| 900 | 0.97 | 41.5 | 1.05 | 55.0 |
| 915 | 0.98 | 41.5 | 1.06 | 55.0 |
| 1450 | 1.20 | 40.5 | 1.30 | 54.0 |
| 1610 | 1.29 | 40.3 | 1.40 | 53.8 |
| 1800-2000 | 1.40 | 40.0 | 1.52 | 53.3 |
| 2100 | 1.49 | 39.8 | 1.62 | 53.2 |
| 2300 | 1.67 | 39.5 | 1.81 | 52.9 |
| **2450** | **1.80** | **39.2** | **1.95** | **52.7** |
| 2600 | 1.96 | 39.0 | 2.16 | 52.5 |
| 3000 | 2.40 | 38.5 | 2.73 | 52.0 |
| 5200 | 4.66 | 36.0 | 5.30 | 49.0 |
| 5400 | 4.86 | 35.8 | 5.53 | 48.7 |
| 5600 | 5.07 | 35.5 | 5.77 | 48.5 |
| 5800 | 5.27 | 35.3 | 6.00 | 48.2 |

## 5.3 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using COMOSAR Dielectric Probe Kit and an Agilent Network Analyzer.

**Calibration Result for Dielectric Parameters of Tissue Simulating Liquid**

| Head Tissue Simulating Liquid | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Freq. MHz | Temp. (℃) | Conductivity | | | Permittivity | | | Limit (%) | Date |
| | | Reading ($\sigma$) | Target ($\sigma$) | Delta (%) | Reading ($\varepsilon$ r) | Target ($\varepsilon$ r) | Delta (%) | | |
| 2450 | 22.8 | 1.83 | 1.80 | 1.67 | 40.08 | 39.2 | 2.24 | ±5 | 2026-06-10 |
| 2402 | 22.8 | 1.82 | 1.80 | 1.11 | 40.05 | 39.2 | 2.17 | ±5 | 2026-06-10 |
| 2441 | 22.8 | 1.83 | 1.80 | 1.67 | 40.09 | 39.2 | 2.27 | ±5 | 2026-06-10 |
| 2480 | 22.8 | 1.83 | 1.80 | 1.67 | 40.11 | 39.2 | 2.32 | ±5 | 2026-06-10 |

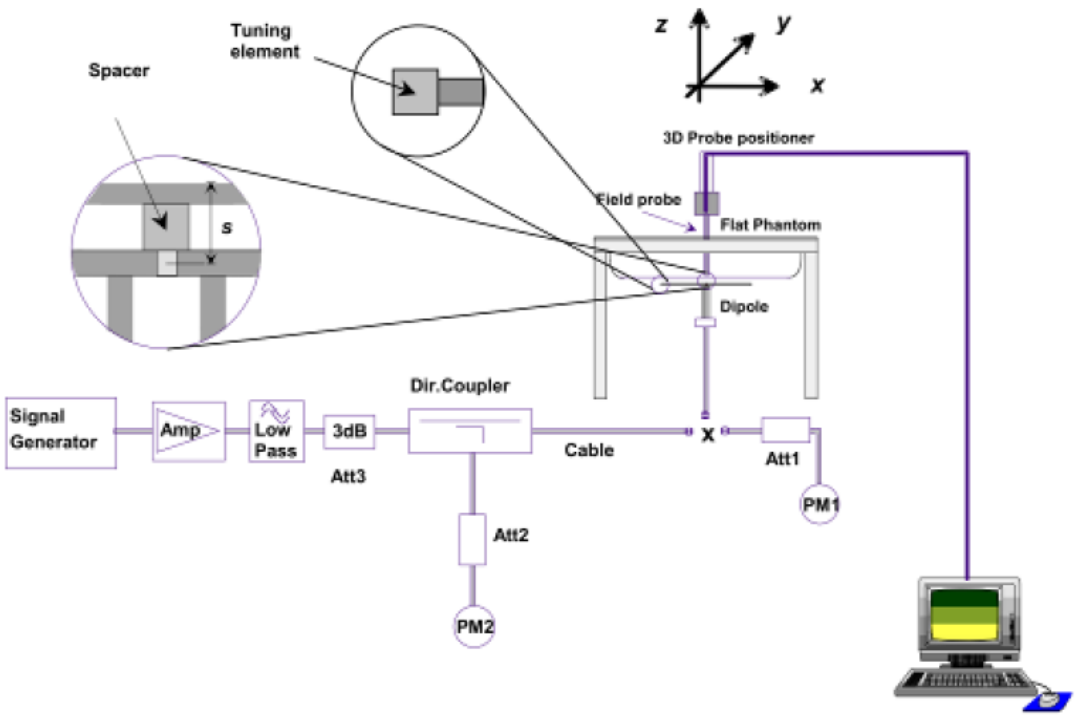
# 6. SAR Measurement Evaluation

## 6.1 Purpose of System Performance Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

## 6.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 2450MHz and 5000MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom.




**System Verification Setup Block Diagram**

**Setup Photo of Dipole Antenna**

The output power on 750MHz/835MHz/900MHz dipole port must be calibrated to 24dBm (250mW) before dipole is connected.
The output power on 1800MHz/1900MHz/2300MHz/2450MHz/2600MHz/5GHz dipole port must be calibrated to 20dBm (100mW) before dipole is connected.

## 6.3 Validation Results

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. Table 6.1 shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

| Frequency | Power | Targeted $SAR_{1g}$ | Measured $SAR_{1g}$ | Normalized $SAR_{1g}$ | Tolerance | Date |
|---|---|---|---|---|---|---|
| MHz | (mw) | (W/kg) | (W/kg) | (W/kg) | (%) | |
| 2450 | 100 | 52.20 | 4.958 | 49.580 | -5.02 | 2026-06-10 |

Targeted and Measurement SAR

***Please refer to Annex A for the plots of system performance check.***

# 7. EUT Testing Position

## 7.1 Body Position

(a) To position the device parallel to the phantom surface with each side.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 0mm.

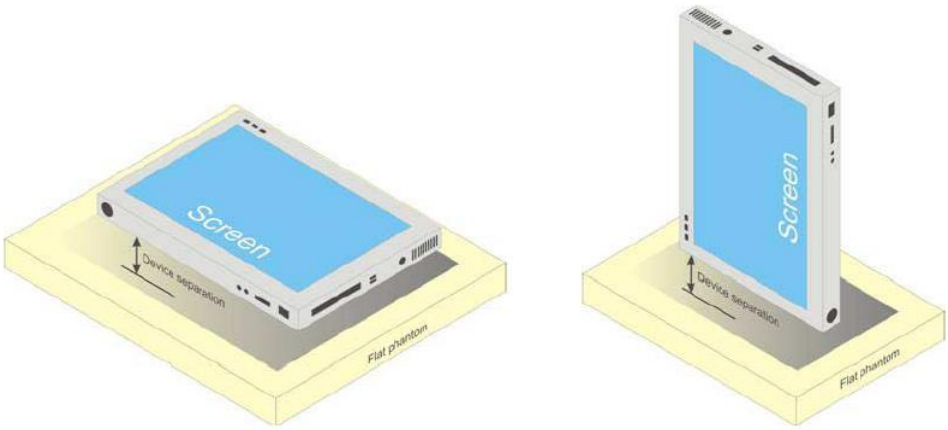
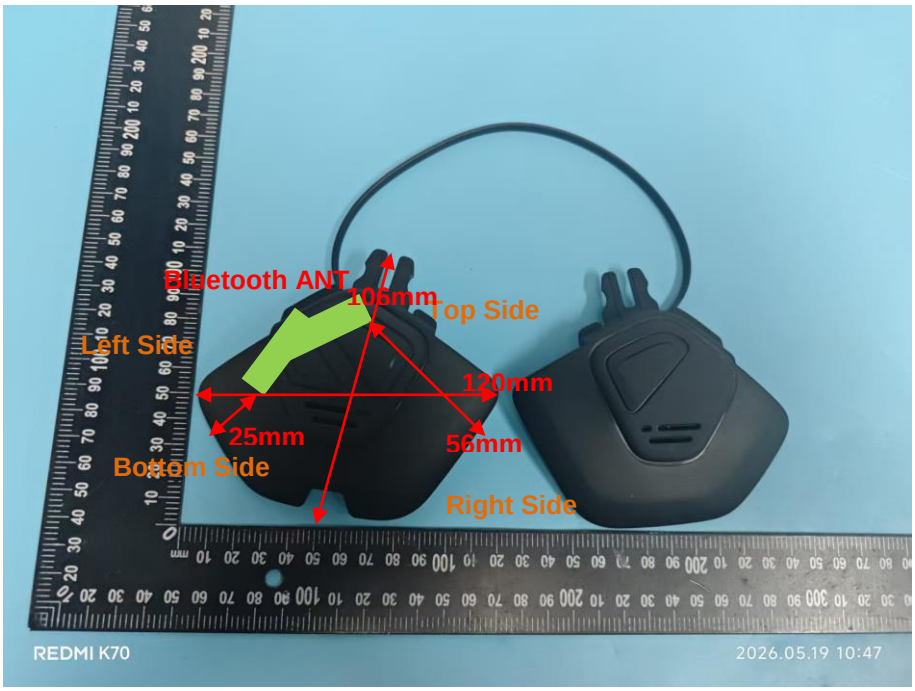



**Illustration for Body Position**

## 7.2 EUT Antenna Position




**<EUT Front View>**
**Fig 7.2 Block Diagram for EUT Antenna Position**

| Distance of EUT antenna-to-edge/surface(mm), | | | | | | |
|---|---|---|---|---|---|---|
| **Antennas** | **Front Side** | **Back Side** | **Right Side** | **Left Side** | **Top Side** | **Bottom Side** |
| Bluetooth | <25 | <25 | 56 | <25 | <25 | 25 |

## 7.3 EUT Testing Position

Body mode SAR assessments are required for this device. This EUT was tested in different positions for different SAR test modes, more information as below:

| Body SAR tests, Test distance: 0mm | | | | | | |
|---|---|---|---|---|---|---|
| **Antennas** | **Front Side** | **Back Side** | **Right Side** | **Left Side** | **Top Side** | **Bottom Side** |
| Bluetooth | Yes① | Yes① | No | Yes① | Yes① | Yes |

**Remark:**

1. Referring to KDB 447498 D01 v06, and KDB 775926 D01 SAR Testing for Irregular Shaped Devices DR01-46042, this device is tested in direct contact (no gap) with flat phantom. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
2. ① Remark: The EUT is with an irregular appearance. Referring to KDB 775926 D01 SAR Testing for Irregular Shaped Devices DR01-46042, when testing the SAR of the Bluetooth antenna, removed the shell of the device and tested the Back side/ Front Side /Left Side/ Top Side, and the antenna of the Bluetooth module of the device is tested direct contact (no gap) with flat phantom. According to the test results, the Body SAR (Gap: 0mm) of the EUT is evaluated.
3. The EUT is a detachable Bluetooth headset supporting both standalone operation and helmet-mounted modes. The SAR value is evaluated under the most severe conditions (standalone mode, 0 mm distance from the ear). No separate testing was conducted for the helmet-mounted configuration, as the additional isolation distance provided by the helmet shell ensures SAR levels do not exceed those of the standalone mode. According to the test results, the Body SAR (Gap: 0mm) / Head SAR of the EUT is evaluated.

***Please refer to Annex D for the EUT test setup photos.***

# 8. SAR Measurement Procedures

## 8.1 Measurement Procedures

The measurement procedures are as follows:
(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
(b) Keep EUT to radiate maximum output power or 100% factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as Annex D demonstrates.
(e) Set scan area, grid size and other setting on the SATIMO software.
(f) Measure SAR results for the highest power channel on each testing position.
(g) Find out the largest SAR result on these testing positions of each band
(h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

## 8.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The SATIMO software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
The entire evaluation of the spatial peak values is performed within the post-processing engine. The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:
(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

## 8.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

## 8.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software can combine and subsequently superpose these measurement data to calculating the multiband SAR.

## 8.5 SAR Averaged Methods

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10g and 1 g requires a very fine resolution in the three dimensional scanned data array.

## 8.6 Power Drift Monitoring

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

# 9. SAR Test Result

## 9.1 Conducted RF Output Power

**Bluetooth - Maximum Output Power**

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict | Tune-up power(dBm) |
|---|---|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | Ant1 | 3.495 | 21 | Pass | 4.0 |
| NVNT | 1-DH1 | 2441 | Ant1 | 3.601 | 21 | Pass | 4.0 |
| NVNT | 1-DH1 | 2480 | Ant1 | 3.906 | 21 | Pass | 4.0 |
| NVNT | 2-DH1 | 2402 | Ant1 | 5.835 | 21 | Pass | 6.5 |
| NVNT | 2-DH1 | 2441 | Ant1 | 5.952 | 21 | Pass | 6.5 |
| NVNT | 2-DH1 | 2480 | Ant1 | 6.249 | 21 | Pass | 6.5 |
| NVNT | 3-DH1 | 2402 | Ant1 | 6.427 | 21 | Pass | 7.0 |
| NVNT | 3-DH1 | 2441 | Ant1 | 6.515 | 21 | Pass | 7.0 |
| NVNT | 3-DH1 | 2480 | Ant1 | **6.814** | 21 | Pass | 7.0 |

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict | Tune-up power(dBm) |
|---|---|---|---|---|---|---|---|
| NVNT | LE 1Mbps | 2402 | Ant1 | 2.248 | 30 | Pass | 4.0 |
| NVNT | LE 1Mbps | 2442 | Ant1 | **3.243** | 30 | Pass | 4.0 |
| NVNT | LE 1Mbps | 2480 | Ant1 | 2.664 | 30 | Pass | 4.0 |
| NVNT | LE 2Mbps | 2402 | Ant1 | 2.326 | 30 | Pass | 4.0 |
| NVNT | LE 2Mbps | 2442 | Ant1 | 3.238 | 30 | Pass | 4.0 |
| NVNT | LE 2Mbps | 2480 | Ant1 | 2.675 | 30 | Pass | 4.0 |

## 9.2 Test Results for Standalone SAR Test

**Body SAR**

| Bluetooth–Body SAR Test(0mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Plot No.** | **Mode** | **Test Position** | **Frequency** | | **Output Power (dBm)** | **Rated Limit (dBm)** | **Scaling Factor** | **SAR1g (W/kg)** | **Scaled SAR1g (W/kg)** |
| | | | **CH.** | **MHz** | | | | | |
| | 3-DH1 | Back Face | 78 | 2480 | 6.814 | 7.0 | 1.044 | 0.044 | 0.046 |
| | 3-DH1 | Front Face | 78 | 2480 | 6.814 | 7.0 | 1.044 | 0.141 | 0.147 |
| | 3-DH1 | Left Side | 78 | 2480 | 6.814 | 7.0 | 1.044 | 0.039 | 0.041 |
| | 3-DH1 | Top Side | 78 | 2480 | 6.814 | 7.0 | 1.044 | 0.031 | 0.032 |
| | 3-DH1 | Bottom Side | 78 | 2480 | 6.814 | 7.0 | 1.044 | 0.023 | 0.024 |
| 1. | 3-DH1 | Front Face | 0 | 2402 | 6.427 | 7.0 | 1.141 | 0.132 | **0.151** |
| | 3-DH1 | Front Face | 39 | 2441 | 6.515 | 7.0 | 1.118 | 0.128 | 0.143 |

**Remark:**

1) Per KDB 447498 D01 v06, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

2) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

3) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

4) 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 ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

5) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

# 10. Measurement Uncertainty

## 10.1 Uncertainty for SAR Test

| **Input quantity $X_i$ (source of uncertainty)** | **Ref.** | **Prob. Dist $PDF_i$** | **Unc. $a(x_i)$** | **Div. $q_i$** | **$u(x_i) = a(x_i)/q_i$** | **$c_i$ (1 g; 10 g)** | **$u(y) = c_i \cdot u(x_i)$** | **$v_i$ or $v_{eff}$** |
|---|---|---|---|---|---|---|---|---|
| **Measurement System errors** | | | | | | | | |
| Probe calibration | 8.4.1.1 | N | 7.00 | 2 | 3.5 | 1 | 3.5 | ∝ |
| Probe calibration drift | 8.4.1.2 | R | 0 | √3 | 0 | 1 | 0 | ∝ |
| Probe linearity and detection limit | 8.4.1.3 | R | 5.00 | √3 | 2.89 | 1 | 2.89 | ∝ |
| Broadband signal | 8.4.1.4 | R | 0 | √3 | 0 | 1 | 0 | ∝ |
| Probe isotropy | 8.4.1.5 | R | 2.50 | √3 | 1.44 | 1 | 1.44 | ∝ |
| Other probe and data acquisition errors | 8.4.1.6 | N | 0.02 | 1 | 0.02 | 1 | 0.02 | ∝ |
| RF ambient and noise | 8.4.1.7 | N | 0 | 1 | 0 | 1 | 0 | ∝ |
| Probe positioning errors | 8.4.1.8 | N | 1.40 | 1 | 1.40 | 2/™ | 0.70 | |
| Data processing errors | 8.4.1.9 | N | 0.05 | 1 | 0.05 | 1 | 0.05 | ∝ |
| **Phantom and device (DUT or validation antenna) errors** | | | | | | | | |
| Measurement of phantom conductivity(σ) | 8.4.2.1 | N | 4.00 | 1 | 4.00 | $c_\varepsilon$, $c_\sigma$ | 4.00 | ∝ |
| Temperature effects (medium) | 8.4.2.2 | R | 2.50 | √3 | 1.44 | $c_\varepsilon$, $c_\sigma$ | 1.44 | ∝ |
| Shell permittivity | 8.4.2.3 | R | 5.00 | √3 | 2.88 | See 8.4.2.3 | 2.88 | ∝ |
| Distance between the radiating element of the DUT and the phantom medium | 8.4.2.4 | N | 0.03 | 1 | 0.03 | 2 | 0.02 | ∝ |
| Repeatability of positioning the DUT or source against the phantom | 8.4.2.5 | N | 0.05 | 1 | 0.05 | 1 | 0.05 | 5 |
| Device holder effects | 8.4.2.6 | N | 5.00 | 1 | 5.00 | 1 | 5.00 | |
| Effect of operating mode on probe sensitivity | 8.4.2.7 | R | 0 | √3 | 0 | 1 | 0 | ∝ |
| Time-average SAR | 8.4.2.8 | R | 0 | √3 | 0 | 1 | 0 | ∝ |
| Variation in SAR due to drift in output of DUT | 8.4.2.9 | N | 5.00 | 1 | 5.00 | 1 | 5.00 | |
| Validation antenna uncertainty (validation measurement only) | 8.4.2.10 | N | 0 | 1 | 0 | 1 | 0 | |
| Uncertainty in accepted power | 8.4.2.11 | N | 0 | 1 | 0 | 1 | 0 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (validation measurement only) | | | | | | | | |
| **Corrections to the SAR result** | | | | | | | | |
| Phantom deviation from target (ε′,σ) | 8.4.3.1 | N | 0.05 | 1 | 0.05 | 1 | 0.05 | |
| SAR scaling | 8.4.3.2 | R | 2.00 | √3 | 1.15 | 1 | 1.15 | |
| Combined Standard Uncertainty | | RSS | | | 10.11 | | 10.11 | $\nu_{eff}$= |
| Expanded uncertainty, U | | K=2 | | | 20.23 | | 20.23 | |

## Annex A. Plots of System Performance Check

# MEASUREMENT 9

Type: Validation measurement
Date of measurement: 2026-06-10
Measurement duration: 25 minutes 31 seconds
E-field Probe: SSE2 - 0725-EPGO-446; ConvF: 1.73; Calibrated: 2026-03-03

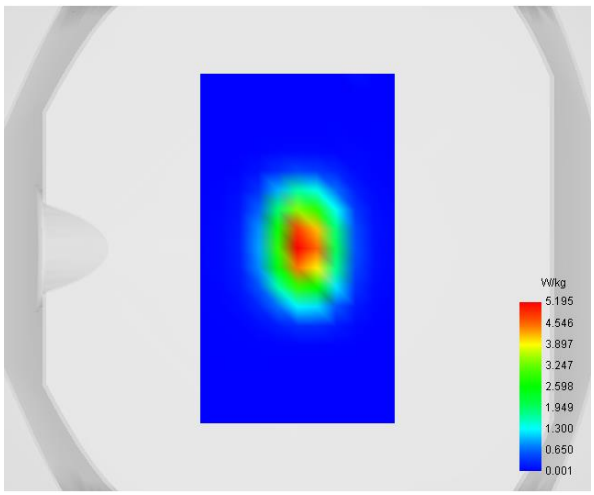
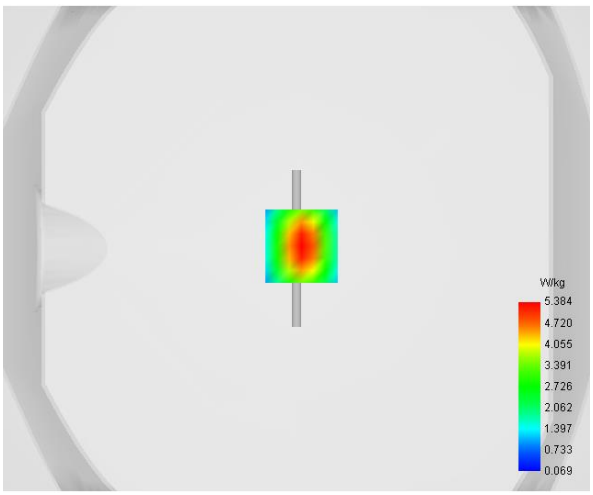
### A. Experimental conditions

| | |
|---|---|
| **Area Scan** | dx=8mm dy=8mm |
| **Zoom Scan** | dx=5mm dy=5mm dz=4mm |
| **Phantom** | Validation plane |
| **Device Position** | Dipole |
| **Band** | CW2450 |
| **Signal** | CW (Crest factor: 1.0) |

### B. SAR Measurement Results

| | |
|---|---|
| **Frequency (MHz)** | 2450.000000 |
| **Relative Permittivity (real part)** | 40.083383 |
| **Conductivity (S/m)** | 1.832578 |
| **Ambient Temperature** | 22.8 |
| **Liquid Temperature** | 22.8 |

### C. SAR Surface and Volume

| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |





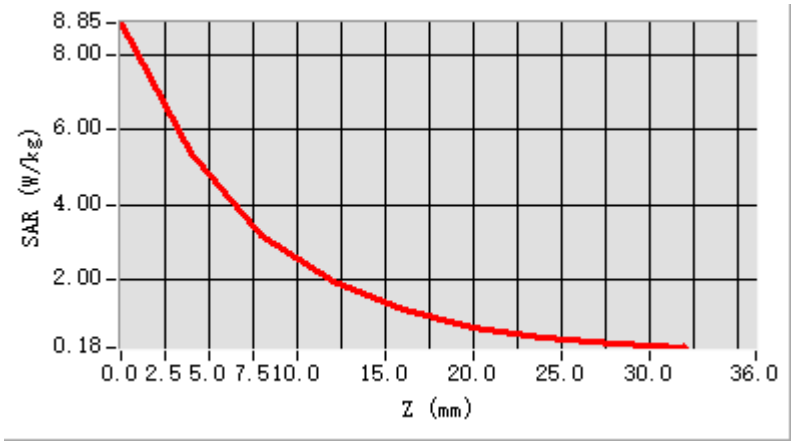
**Maximum location: X=2.00, Y=1.00 ; SAR Peak: 8.76 W/kg**

**D. SAR 1g & 10g**

| | |
|---|---|
| **SAR 10g (W/Kg)** | **2.448** |
| **SAR 1g (W/Kg)** | **4.958** |
| **Variation (%)** | **-0.100** |
| **Horizontal validation criteria: minimum distance (mm)** | **14.142136** |
| **Vertical validation criteria: SAR ratio M2/M1 (%)** | **59.248201** |

**E. Z Axis Scan**

| **Z (mm)** | **0.00** | **4.00** | **8.00** | **12.00** | **16.00** | **20.00** | **24.00** | **28.00** |
|---|---|---|---|---|---|---|---|---|
| **SAR (W/Kg)** | **8.849** | **5.384** | **3.190** | **1.951** | **1.198** | **0.728** | **0.443** | **0.269** |



## Annex B. Plots of SAR Measurement

# MEASUREMENT 1

Type: Validation measurement
Date of measurement: 2026-06-10
Measurement duration: 25 minutes 31 seconds
E-field Probe: SSE2 - 0725-EPGO-446; ConvF: 1.73; Calibrated: 2026-03-03

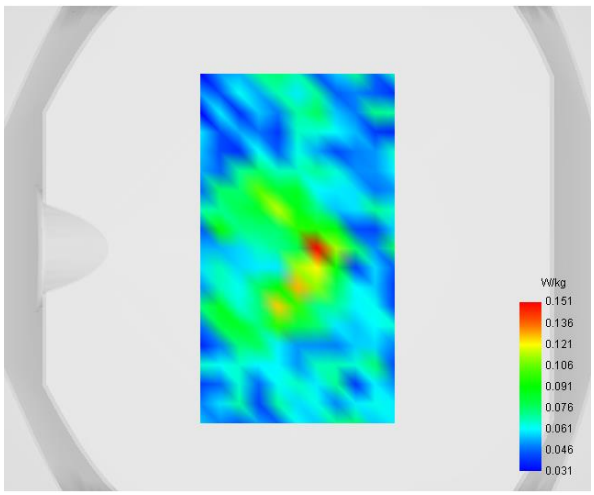
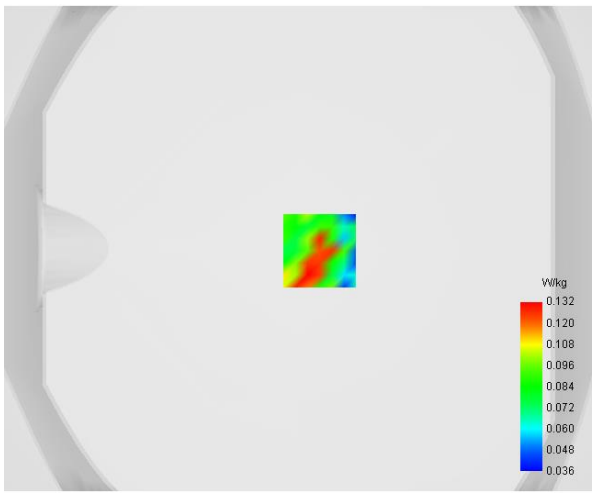
### A. Experimental conditions

| | |
|---|---|
| **Area Scan** | dx=8mm dy=8mm |
| **Zoom Scan** | dx=5mm dy=5mm dz=4mm |
| **Phantom** | Flat Plane |
| **Device Position** | Front |
| **Band** | Bluetooth_ 3-DH1 |
| **Channels** | Low |
| **Signal** | Duty Cycle 1:1 |

### B. SAR Measurement Results

| | |
|---|---|
| **Frequency (MHz)** | 2480.000000 |
| **Relative Permittivity (real part)** | 40.054283 |
| **Conductivity (S/m)** | 1.823271 |
| **Ambient Temperature** | 22.8 |
| **Liquid Temperature** | 22.8 |

### C. SAR Surface and Volume

| SURFACE SAR | VOLUME SAR |
|---|---|
|  |  |





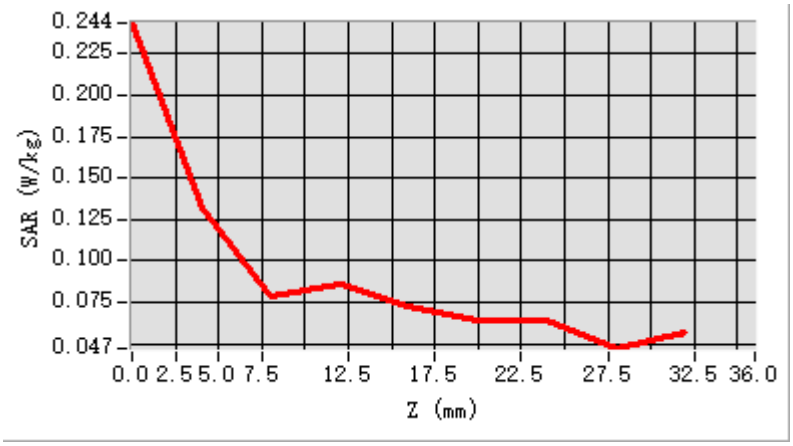
**Maximum location: X=9.00, Y=-1.00 ; SAR Peak: 0.25 W/kg**

**D. SAR 1g & 10g**

| | |
|---|---|
| **SAR 10g (W/Kg)** | **0.074** |
| **SAR 1g (W/Kg)** | **0.132** |
| **Variation (%)** | **4.728** |
| **Horizontal validation criteria: minimum distance (mm)** | **15.000000** |
| **Vertical validation criteria: SAR ratio M2/M1 (%)** | **76.652603** |

**E. Z Axis Scan**

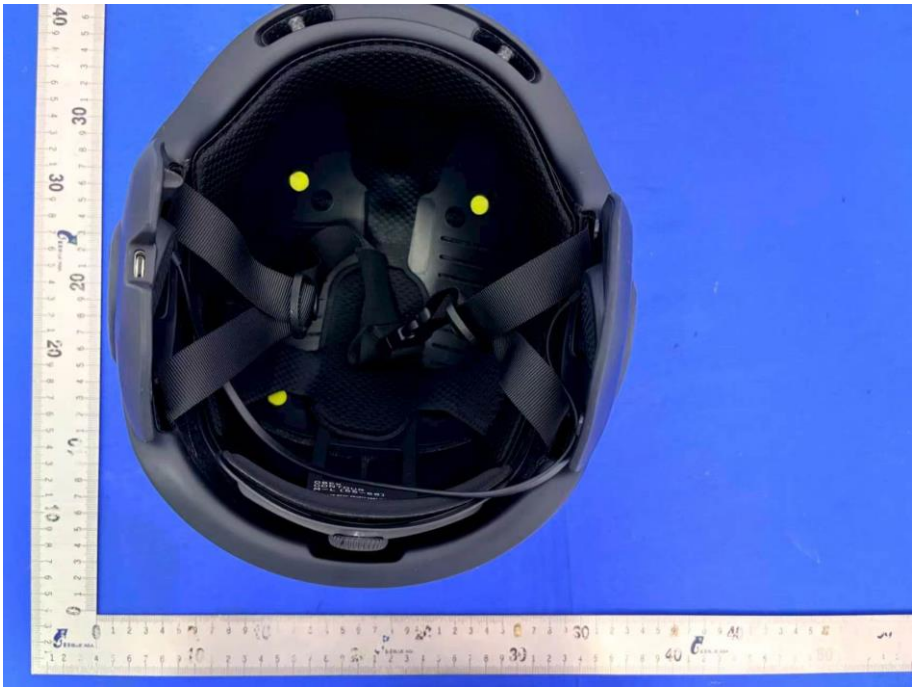
| **Z (mm)** | **0.00** | **4.00** | **8.00** | **12.00** | **16.00** | **20.00** | **24.00** | **28.00** |
|---|---|---|---|---|---|---|---|---|
| **SAR (W/Kg)** | **0.244** | **0.132** | **0.078** | **0.086** | **0.072** | **0.064** | **0.064** | **0.047** |



# Annex C. EUT Photos

## EUT View 1

## EUT View 2

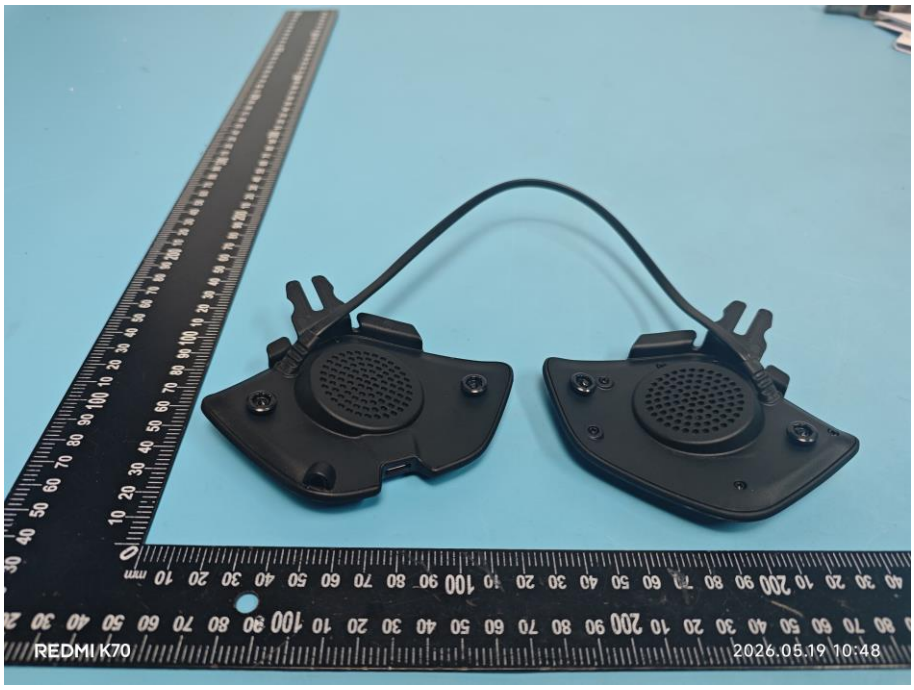


## EUT View 3

## EUT View 4

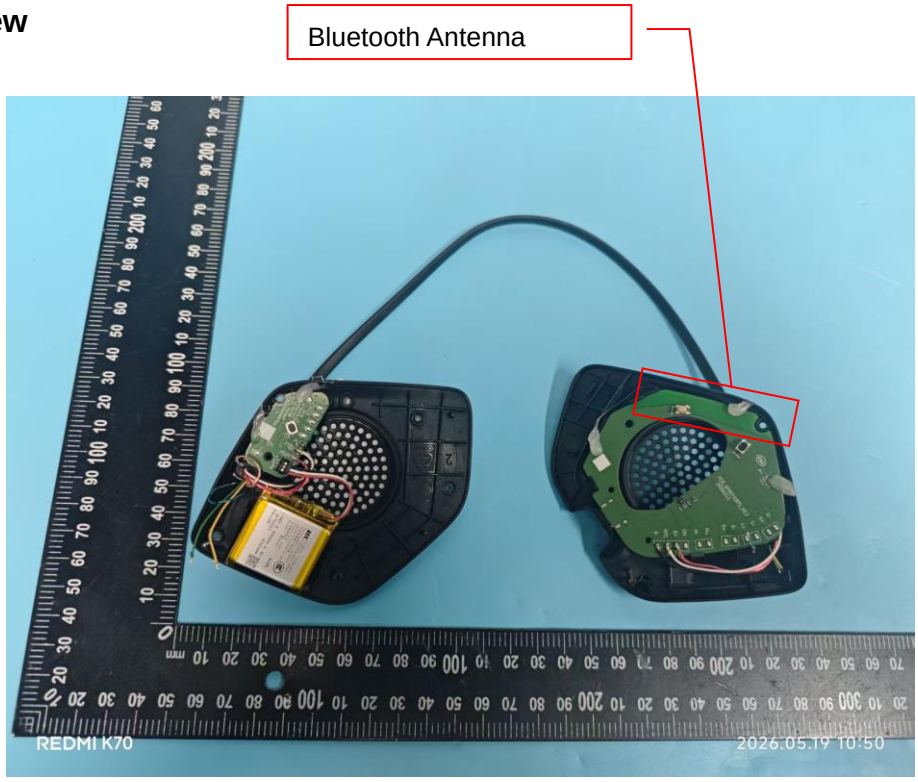
## EUT View 5_ Front

## EUT View 6_ Back



## EUT View 7

## Antenna View



# Annex D. Test Setup Photos

**Body mode Exposure Conditions**
**Test distance: 0mm**

**Body Back**

**Remove the shell of the device without metal components**

**Body Front**

**Remove the shell of the device without metal components**

**Body Left**

**Remove the shell of the device without metal components**

**Body Top**

**Remove the shell of the device without metal components**

**Body Bottom**

# Annex E. Calibration Certificate

***Please refer to the exhibit for the calibration certificate***

******* END OF REPORT *******