



SAR Test Report

Report No.: STS2601097H01

Issued for

Shenzhen Guangqun Communication Technology Co., Ltd.

Room 537Z, 5th Floor, Building 522, Bagualing Industrial
Zone, Futian District, Shenzhen.

Product Name: Tablet

Brand Name: POCKAM

Model Name: P12

Series Model(s): P12 Pro,P12 Plus,P12+,P12 Pro+,P12
Plus+,P12 Max,P12 Ultra,
P11,P11 Pro,P11 Plus,P11+,P11 Pro+,P11
Max,P11 Ultra,
P13,P13 Pro,P13 Plus,P12+,P13
Pro+,P13 Max,P13 Ultra

FCC ID: 2BTXRP12

Test Standard: ANSI/IEEE Std. C95.1
FCC 47 CFR Part 2 (2.1093)
IEEE Std. 1528-2013

Max. Report SAR(1g): Body: 0.777 W/kg

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT CERTIFICATION**

Applicant's name.....: Shenzhen Guangqun Communication Technology Co., Ltd.
Address.....: Room 537Z, 5th Floor, Building 522, Bagualing Industrial Zone,
Futian District, Shenzhen.
Manufacturer's Name.....: Shenzhen Guangqun Communication Technology Co., Ltd.
Address.....: Room 537Z, 5th Floor, Building 522, Bagualing Industrial Zone,
Futian District, Shenzhen.

Product description

Product name.....: Tablet
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Series Model.....: P12 Pro,P12 Plus,P12+,P12 Pro+,P12 Plus+,P12 Max,P12 Ultra,
P11,P11 Pro,P11 Plus,P11+,P11 Pro+,P11 Max,P11 Ultra,
P13,P13 Pro,P13 Plus,P12+,P13 Pro+,P13 Max,P13 Ultra
ANSI/IEEE Std. C95.1
Standards.....: FCC 47 CFR Part 2 (2.1093)
IEEE Std. 1528-2013

The device was tested by Shenzhen STS Test Services Co., Ltd. in accordance with the measurement methods and procedures specified in KDB 865664 The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test.....:

Date (s) of performance of tests.....: 19 Dec. 2025

Date of Issue.....: 12 Feb. 2026

Test Result.....: **Pass**

Testing Engineer :

Xin Liu

(Xin.Liu)

Technical Manager :

Shi fan-long

(Shifan. Long)

Authorized Signatory :

Bovey Yang

(Bovey Yang)





Table of Contents

1. General Information	5
1.1 EUT Description	5
1.2 Test Environment	6
1.3 Test Factory	6
2. Test Standards and Limits	7
3. SAR Measurement System	8
3.1 Definition of Specific Absorption Rate (SAR)	8
3.2 SAR System	8
4. Tissue Simulating Liquids	8
4.1 Simulating Liquids Parameter Check	15
5. SAR System Validation	18
5.1 Validation System	18
5.2 Validation Result	18
6. SAR Evaluation Procedures	19
7. EUT Antenna Location Sketch	20
7.1 SAR test exclusion consider table	21
8. EUT Test Position	24
9. Uncertainty	25
9.1 Measurement Uncertainty	25
10. Conducted Power Measurement	25
10.1 Test Result	28
11. EUT and Test Setup Photo	30
11.1 EUT Photo	30
11.2 Setup Photo	33
12. SAR Result Summary	35
12.1 Body SAR	35
12.2 Simultaneous Multi-band Transmission Evaluation	35
13. Equipment List	37
Appendix A. System Validation Plots	38
Appendix B. SAR Test Plots	41
Appendix C. Probe Calibration and Dipole Calibration Report	45



Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 Feb. 2026	STS2601097H01	ALL	Initial Issue



1. General Information

Environmental evaluation measurements of specific absorption rate (SAR) distributions in emulated human head and body tissues exposed to radio frequency (RF) radiation from wireless portable devices for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC).

1.1 EUT Description

Product Name	Tablet		
Brand Name	POCKAM		
Model Name	P12		
Series Model	P12 Pro,P12 Plus,P12+,P12 Pro+,P12 Plus+,P12 Max,P12 Ultra, P11,P11 Pro,P11 Plus,P11+,P11 Pro+,P11 Max,P11 Ultra, P13,P13 Pro,P13 Plus,P12+,P13 Pro+,P13 Max,P13 Ultra		
Model Difference	The only differences are in model naming, color, and memory, while all other aspects remain the same		
Sample number	202513018003		
Battery	Rated Voltage:3.85V ChargeLimit Voltage:4.4V Capacity: 10000mAh		
Device Category	Portable		
Product stage	Production unit		
RF Exposure Environment	General Population / Uncontrolled		
Hardware Version	W30-T620ES-V2.0-250603-QU		
Software Version	P12-EEA-Android16.0-20251230		
Frequency Range	WLAN802.11b/g/n20: 2412 MHz ~ 2462 MHz WLAN 802.11n40: 2422 MHz ~ 2452 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80: 5150 ~ 5250 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80: 5725 ~ 5850 MHz Bluetooth: 2402 MHz to 2480 MHz		
Max. Reported SAR(1g): (Limit:1.6W/kg) Test distance: Body:0mm	Band	Mode	Body(W/kg)
	DTS	2.4G WLAN	0.615
	DSS	BT	0.305
	NII	5.2G WLAN	0.587
1-g Sum SAR	NII	5.8G WLAN	0.777
	0.777		
FCC Equipment Class	Part 15 Spread Spectrum Transmitter (DSS) Digital Transmission System (DTS) Unlicensed National Information Infrastructure TX(NII)		
Operating Mode:	2.4G WLAN : 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 5G WLAN: 802.11a(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM):BPSK,QPSK,16-QAM,64-QAM Bluetooth: GFSK + π /4DQPSK+8DPSK		
Antenna Specification:	Bluetooth: FPC Antenna WLAN: FPC Antenna		
SIM Card	N/A		



1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (°C)	18-25
Humidity (%RH)	30-70

1.3 Test Factory

ShenZhen STS Test Services Co.,Ltd.

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration No.: 625569

IC Registration No.: 12108A

A2LA Certificate No.: 4338.01



2. Test Standards and Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	IEEE Std C95.1, 2019	IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz. It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D04 v01	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 616217 D04 v01r02	SAR for laptop and tablets (Body 0cm)
8	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

(A). Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

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

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

NOTE: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram 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.

Population/Uncontrolled Environments:

Are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Occupational/Controlled Environments:

Are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

NOTE

GENERAL POPULATION/UNCONTROLLED EXPOSURE

PARTIAL BODY LIMIT

1.6 W/kg



3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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

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

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

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

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

Where: σ is the conductivity of the tissue,

ρ is the mass density of the tissue and E is the RMS electrical field strength.

3.2 SAR System

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

A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

A data acquisition electronic (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.

A unit to operate the optical surface detector which is connected to the EOC.

The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.

The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003.

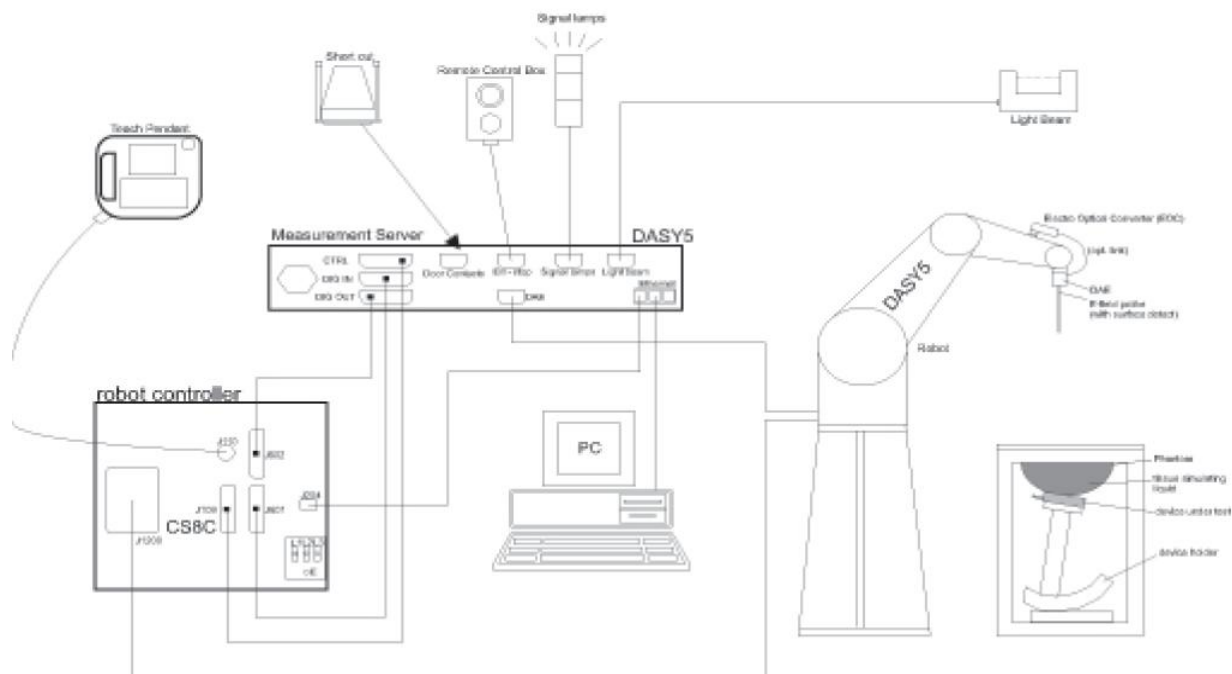
DASY5 software and SEMCAD data evaluation software.

Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

The generic twin phantom enabling the testing of left-hand and right-hand usage.



System validation dipoles allowing to validate the proper functioning of the system.



3.3 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

Probe Specification

Construction Symmetrical design with triangular core
Interleaved sensors
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration ISO/IEC 17025 calibration service available.

Frequency 10 MHz to 4 GHz;
Linearity: ± 0.2 dB (30 MHz to 4 GHz)

Directivity ± 0.2 dB in HSL (rotation around probe axis)
 ± 0.3 dB in tissue material (rotation normal to probe axis)

Dynamic Range 5 μ W/g to > 100 mW/g;
Linearity: ± 0.2 dB

Dimensions Overall length: 337 mm (Tip: 20 mm)
Tip diameter: 3.9 mm (Body: 12 mm)
Distance from probe tip to dipole centers: 2.0 mm

Application General dosimetry up to 4 GHz
Dosimetry in strong gradient fields
Compliance tests of Mobile Phones

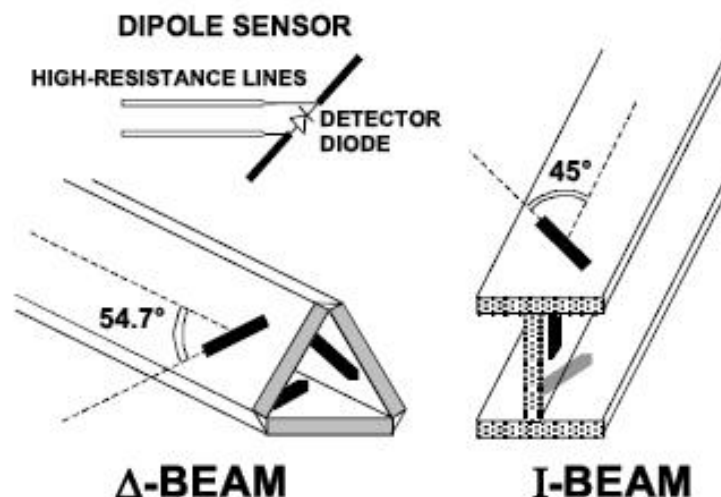
Compatibility DASY3, DASY5, DASY52 SAR and higher,
EASY4/MRI

Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:





3.4 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm). System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.



SAM Twin Phantom

3.5 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the DASY system.

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 is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.



Device holder supplied by SPEAG

3.6 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 of $15\text{ mm} \times 15\text{ mm}$ is set. During the 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

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume



containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

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. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

3.7 Data Storage and Evaluation

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 ".DA4". 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 setup, 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 lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

Data Evaluation

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	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ



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:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

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 priMayy field data for each channel can be evaluated:

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

$$H - \text{fieldprobes : } H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

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)²] 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):

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

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

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1'000}$$

with SAR = local specific absorption rate in mW/g
 E_{tot} = total field strength in V/m
 σ = conductivity in [mho/m] or [Siemens/m]
 ρ = equivalent tissue density in g/cm³

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.



4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values

The uncertainty due to the liquid conductivity and permittivity arises from two different sources. The first source of error is the deviation of the liquid conductivity from its target value (max _ 5 %) and the second source of error arises from the measurement procedures used to assess conductivity. The uncertainty shall be assessed using a rectangular probability For 1 g averaging, the maximum weighting coefficient for SAR is 0,5.

IEEE SCC-34/SC-2 RECOMMENDED TISSUE DIELECTRIC PARAMETERS

The head and body tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 have been incorporated in the following table.

Frequency	ϵ_r	σ 10g S/m
300	45.3	0.87
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800 to 2000	40.0	1.40
2100	39.8	1.49
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
3500	37.9	2.91
4000	37.4	3.43
4500	36.8	3.94
5000	36.2	4.45
5200	36.0	4.66
5400	35.8	4.86
5600	35.5	5.07
5800	35.3	5.27



The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ϵ
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.4	40.0
2450	55.0	0	0	0.1	0	44.9	1.80	39.2
2600	54.9	0	0	0.1	0	45.0	1.96	39.0
Frequency (MHz)	Water (%)	Hexyl Carbitol (%)			Triton X-100 (%)		Conductivity σ (S/m)	Permittivity ϵ
5200	62.52	17.24			17.24		4.66	36.0
5800	62.52	17.24			17.24		5.27	35.3
Body (From instrument manufacturer)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ϵ
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0.1	0	31.3	1.95	52.7
2600	68.2	0	0	0.1	0	31.7	2.16	52.5
Frequency(MHz)	Water	DGBE (%)			Salt (%)		Conductivity σ (S/m)	Permittivity ϵ
5200	78.60	21.40			/		5.30	49.00
5800	78.50	21.40			0.1		6.00	48.20

**LIQUID MEASUREMENT RESULTS**

Tissue Stimulant Measurement for 2450MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr39.2(37.24-41.16)	δ[s/m]1.80(1.71-1.89)		
	2402	41.156	1.754	20.3	19 Dec. 2025
	2412	41.137	1.769		
	2437	41.128	1.778		
	2441	41.126	1.782		
	2450	41.118	1.788		
	2462	40.115	1.792		
	2480	40.092	1.813		
Tissue Stimulant Measurement for 5250MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 35.9(34.2-37.8)	δ[s/m] 4.71(4.427-4.893)		
	5180	36.387	4.534	20.3	19 Dec. 2025
	5200	36.378	4.556		
	5240	36.363	4.575		
Tissue Stimulant Measurement for 5800MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 35.3 (33.54-37.07)	δ[s/m] 5.27 (5.007-5.534)		
	5745	35.409	5.098	20.3	19 Dec. 2025
	5785	35.356	5.131		
	5800	35.285	5.161		
	5825	35.259	5.184		



6. SAR Evaluation Procedures

The procedure for assessing the average SAR value consists of the following steps:

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

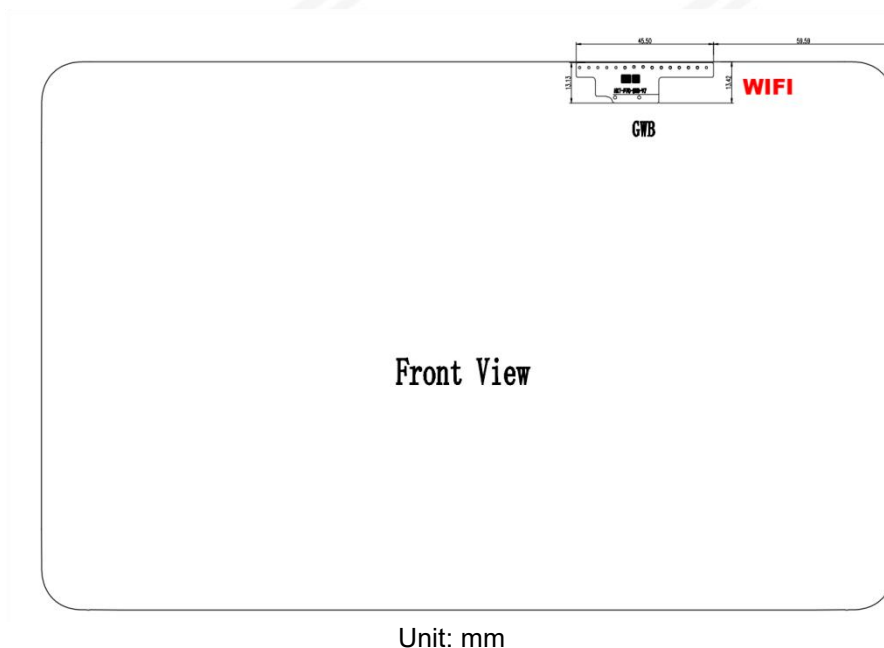
➤ Area Scan& Zoom Scan

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01 quoted below.

When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7. EUT Antenna Location Sketch

The location of the antennas inside EUT is shown as below picture:



The SAR measurement positions of each antenna are as below:

Antenna	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
GWB Ant (WIFI/BT)	No	Yes	No	No	Yes	No

Note:

- 1) According to the antenna location shown as above, particular DUT edges were not required to be evaluated for SAR if the antenna-to-edge distance is greater than 50mm.
- 2) PerKDB616217, exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the Front surface of tablet display screens are generally not necessary.
- 3) The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

**7.1 SAR test exclusion consider table**

The WLAN/BT SAR evaluation of Maximum power (dBm) summing tolerance.

The distance < 50mm								
Mode	Position	Distance (mm)	Pmax (dBm)	Pmax (mW)	f(GHz)	Calculation Result	SAR Exclusion threshold	Test Requirement (Yes/No)
BT	Rear	5	2	1.58	2.402	0.49	3	Yes
	Top	5	2	1.58	2.402	0.49	3	Yes
2.4G WiFi	Rear	5	15.5	35.48	2.422	11.04	3	Yes
	Top	5	15.5	35.48	2.422	11.04	3	Yes
5.2G WiFi	Rear	5	15	31.62	5.24	14.48	3	Yes
	Top	5	15	31.62	5.24	14.48	3	Yes
5.8G WiFi	Rear	5	13	19.95	5.785	9.60	3	Yes
	Top	5	13	19.95	5.785	9.60	3	Yes

The distance > 50mm								
Mode	Position	Distance (mm)	Pmax (dBm)	Pmax (mW)	f(GHz)	Power allowed at numeric Threshold at 50mm	SAR Exclusion Result	Test Requirement (Yes/No)
BT	Left	180	2	1.58	2.402	96.78	1396.78	No
	Right	60	2	1.58	2.402	96.78	196.78	No
	Bottom	150	2	1.58	2.402	96.78	1096.78	No
2.4G WiFi	Left	180	15.5	35.48	2.422	96.38	1396.38	No
	Right	60	15.5	35.48	2.422	96.38	196.38	No
	Bottom	150	15.5	35.48	2.422	96.38	1096.38	No
5.2G WiFi	Left	180	15	31.62	5.24	65.53	1365.53	No
	Right	60	15	31.62	5.24	65.53	165.53	No
	Bottom	150	15	31.62	5.24	65.53	1065.53	No
5.8G WiFi	Left	180	13	19.95	5.785	62.36	1362.36	No
	Right	60	13	19.95	5.785	62.36	162.36	No
	Bottom	155	13	19.95	5.785	62.36	1112.36	No

Note:

1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. Per KDB 447498 D04, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.



3. Per KDB 447498 D04, if the maximum time-averaged power available does not exceed 1 mW. This stand-alone SAR exemption test.
4. Per KDB 447498 D04, the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

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

Where

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

and

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

d = the separation distance (cm);

5. Per KDB 447498 D04, An alternative to the SAR-based exemption is using below table and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in below table to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF Source frequency (MHz)	Threshold ERP(watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.



1,500-100,000

19.2R².

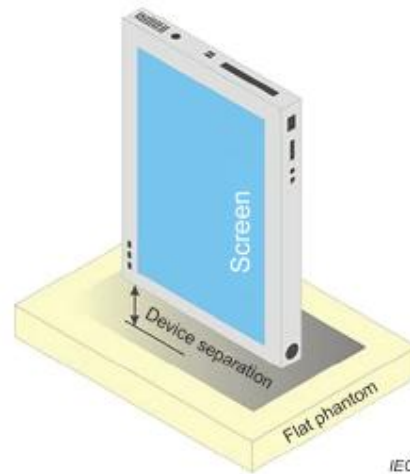
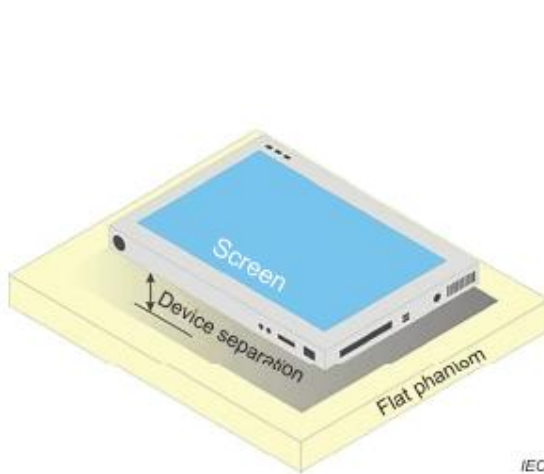
6. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion 8. for each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4db higher than those measured at the lower data rate than 11b mode, thus the SAR can be excluded.
7. Per KDB 616217 D04, SAR evaluation for the front surface of tablet display screens are generally not necessary.
8. Per KDB 248227, as maximum rated power for U-NII-2A > U-NII-1, U-NII-2A was chosen for SAR evaluation. Based on the measurements obtained, SAR measurements on U-NII-1 are not required as highest reported SAR from U-NII-2A band is $\leq 1.2\text{W/Kg}$.

8. EUT Test Position

Per KDB 616217, the diagonal length is $> 200\text{mm}$, the device is considered a “tablet” device and needed to test 0mm 1-g body SAR.

This EUT was tested in Rear Face, Top Side.

- 1) To adjust the EUT parallel to the flat phantom.
- 2) To adjust the distance between the EUT surface and the flat phantom to **0mm**.





9. Uncertainty

9.1 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	5.72	N	1.00	1.00	1.00	5.72	5.72	∞
Axial Isotropy	E.2.2	0.18	R	1.73	0.71	0.71	0.07	0.07	∞
Hemispherical Isotropy	E.2.2	1.04	R	1.73	0.71	0.71	0.42	0.42	∞
Boundary effect	E.2.3	0.80	R	1.73	1.00	1.00	0.46	0.46	∞
Linearity	E.2.4	1.25	R	1.73	1.00	1.00	0.72	0.72	∞
System detection limits	E.2.4	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Modulation response	E.2.5	3.42	R	1.73	1.00	1.00	1.97	1.97	∞
Readout Electronics	E.2.6	0.26	N	1.00	1.00	1.00	0.26	0.26	∞
Response Time	E.2.7	0.17	R	1.73	1.00	1.00	0.10	0.10	∞
Integration Time	E.2.8	1.43	R	1.73	1.00	1.00	0.83	0.83	∞
RF ambient conditions-Noise	E.6.1	3.51	R	1.73	1.00	1.00	2.03	2.03	∞
RF ambient conditions-reflections	E.6.1	3.15	R	1.73	1.00	1.00	1.82	1.82	∞
Probe positioner mechanical tolerance	E.6.2	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Probe positioning with respect to phantom shell	E.6.3	1.40	R	1.73	1.00	1.00	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.10	R	1.73	1.00	1.00	1.21	1.21	∞
Test sample Related									
Test sample positioning	E.4.2	3.10	N	1.00	1.00	1.00	3.10	3.10	∞
Device holder uncertainty	E.4.1	3.80	N	1.00	1.00	1.00	3.80	3.80	∞
Output power variation—SAR drift measurement	E.2.9	4.50	R	1.73	1.00	1.00	2.60	2.60	∞
SAR scaling	E.6.5	1.80	R	1.73	1.00	1.00	1.04	1.04	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	3.70	R	1.73	1.00	1.00	2.14	2.14	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.90	N	1.00	1.00	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	2.40	R	1.73	0.78	0.71	1.08	0.98	M
Liquid permittivity measurement	E.3.3	4.10	N	1.00	0.78	0.71	3.20	2.91	M
Liquid conductivity—temperature uncertainty	E.3.4	2.70	R	1.73	0.23	0.26	0.36	0.41	∞
Liquid permittivity—temperature uncertainty	E.3.4	4.80	N	1.00	0.23	0.26	1.10	1.25	∞
Combined Standard Uncertainty			RSS				10.08	9.59	
Expanded Uncertainty (95% Confidence interval)			K=2				19.58	19.18	



System Validation uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	5.72	N	1.00	1.00	1.00	5.72	5.72	∞
Axial Isotropy	E.2.2	0.18	R	1.73	1.00	1.00	0.10	0.10	∞
Hemispherical Isotropy	E.2.2	1.04	R	1.73	0.00	0.00	0.00	0.00	∞
Boundary effect	E.2.3	0.80	R	1.73	1.00	1.00	0.46	0.46	∞
Linearity	E.2.4	1.25	R	1.73	1.00	1.00	0.72	0.72	∞
System detection limits	E.2.4	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Modulation response	E.2.5	3.42	R	1.73	0.00	0.00	0.00	0.00	∞
Readout Electronics	E.2.6	0.26	N	1.00	1.00	1.00	0.26	0.26	∞
Response Time	E.2.7	0.17	R	1.73	0.00	0.00	0.00	0.00	∞
Integration Time	E.2.8	1.43	R	1.73	0.00	0.00	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.51	R	1.73	1.00	1.00	2.03	2.03	∞
RF ambient conditions-reflections	E.6.1	3.15	R	1.73	1.00	1.00	1.82	1.82	∞
Probe positioner mechanical tolerance	E.6.2	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Probe positioning with respect to phantom shell	E.6.3	1.40	R	1.73	1.00	1.00	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.10	R	1.73	1.00	1.00	1.21	1.21	∞
System validation source									
Deviation of experimental dipole from numerical dipole	E.6.4	4.80	N	1.00	1.00	1.00	4.80	4.80	∞
Input power and SAR drift measurement	8,6.6.4	5.10	R	1.73	1.00	1.00	2.94	2.94	∞
Dipole axis to liquid distance	8,E.6.6	2.40	R	1.73	1.00	1.00	1.39	1.39	∞
Phantom and set-up									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	3.70	R	1.73	1.00	1.00	2.14	2.14	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.90	N	1.00	1.00	0.84	1.90	1.60	∞
Liquid conductivity (temperature uncertainty)	E.3.3	2.40	R	1.73	0.78	0.71	1.08	0.98	∞
Liquid conductivity (measured)	E.3.3	4.10	N	1.00	0.78	0.71	3.20	2.91	M
Liquid permittivity (temperature uncertainty)	E.3.4	2.70	R	1.73	0.23	0.26	0.36	0.41	∞
Liquid permittivity (measured)	E.3.4	4.80	N	1.00	0.23	0.26	1.10	1.25	M
Combined Standard Uncertainty			RSS				9.72	9.52	
Expanded Uncertainty (95% Confidence interval)			K=2				19.44	19.03	



° System Check uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration drift	E.2.1.3	5.72	N	1.00	1.00	1.00	5.72	5.72	∞
Axial Isotropy	E.2.2	0.18	R	1.73	0.00	0.00	0.00	0.00	∞
Hemispherical Isotropy	E.2.2	1.04	R	1.73	0.00	0.00	0.00	0.00	∞
Boundary effect	E.2.3	0.8	R	1.73	0.00	0.00	0.00	0.00	∞
Linearity	E.2.4	1.25	R	1.73	0.00	0.00	0.00	0.00	∞
System detection limits	E.2.4	1.20	R	1.73	0.00	0.00	0.00	0.00	∞
Modulation response	E.2.5	3.42	R	1.73	0.00	0.00	0.00	0.00	∞
Readout Electronics	E.2.6	0.26	N	1.00	0.00	0.00	0.00	0.00	∞
Response Time	E.2.7	0.17	R	1.73	0.00	0.00	0.00	0.00	∞
Integration Time	E.2.8	1.43	R	1.73	0.00	0.00	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.51	R	1.73	0.00	0.00	0.00	0.00	∞
RF ambient conditions-reflections	E.6.1	3.15	R	1.73	0.00	0.00	0.00	0.00	∞
Probe positioner mechanical tolerance	E.6.2	1.2	R	1.73	1.00	1.00	0.69	0.69	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	1.73	1.00	1.00	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	3.9	R	1.73	0.00	0.00	0.00	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	4.8	N	1.00	1.00	1.00	4.80	4.80	∞
Input power and SAR drift measurement	8,6.6.4	5.1	R	1.73	1.00	1.00	2.94	2.94	∞
Dipole axis to liquid distance	8,E.6.6	2.4	R	1.73	1.00	1.00	1.39	1.39	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	3.7	R	1.73	1.00	1.00	2.14	2.14	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1.00	1.00	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	2.4	R	1.73	0.78	0.71	1.08	0.98	∞
Liquid permittivity measurement	E.3.3	4.1	N	1.00	0.78	0.71	3.20	2.91	M
Liquid conductivity—temperature uncertainty	E.3.4	2.7	R	1.73	0.23	0.26	0.36	0.41	∞
Liquid permittivity—temperature uncertainty	E.3.4	4.8	N	1.00	0.23	0.26	1.10	1.25	M
Combined Standard Uncertainty			RSS				5.56	5.20	
Expanded Uncertainty (95% Confidence interval)			K=2				11.12	10.41	



10. Conducted Power Measurement

10.1 Test Result

Bluetooth&BLE

BT	Max EIRP (dBm)			
	Max. Tune up	CH0	CH39	CH78
		2402MHz	2441MHz	2480MHz
DH5	2	0.93	1.76	1.27
2DH5	2	-0.22	1.10	0.73
3DH5	2	-0.02	1.61	1.94
BT	Max EIRP (dBm)			
	Max. Tune up	CH0	CH19	CH39
		2402MHz	2440MHz	2480MHz
BLE(1M)	1.00	-1.33	-0.08	-0.11
BLE(2M)	1.00	-1.62	0.75	0.41

Note: The tested channel results are marks in bold.

2.4G WLAN

Band	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Max. Tune up	Average Power(dBm)
2.4G WIFI_1TX_ Ant WIFI	802.11b	1	2412	1	15.00	14.37
		6	2437		15.00	13.23
		11	2462		15.00	14.59
	802.11g	1	2412	6	15.00	14.90
		6	2437		15.00	14.29
		11	2462		15.00	14.89
	802.11n HT20	1	2412	MCS0	15.50	14.79
		6	2437		15.50	14.76
		11	2462		15.50	15.00
	802.11n HT40	3	2422	MCS0	15.00	14.84
		6	2437		15.00	14.40
		9	2452		15.00	14.38

Note: The tested channel results are marks in bold.

**WLAN (5.2Gband)**

Band	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Max. Tune up	Average Power(dBm)
5.2G WIFI_1TX_ Ant WIFI	802.11a	36	5180	6	14.50	13.54
		40	5200		14.50	13.44
		48	5240		14.50	14.23
	802.11n HT20	36	5180	MCS0	14.50	13.47
		40	5200		14.50	13.58
		48	5240		14.50	14.03
	802.11n HT40	38	5190	MCS0	10.00	9.91
		46	5230		12.00	11.11
	802.11ac VHT20	36	5180	MCS0	15.00	13.71
		40	5200		15.00	13.55
		48	5240		15.00	14.64
	802.11ac VHT40	38	5190	MCS0	10.00	9.52
		46	5230		12.00	11.51
	802.11ac VHT80	42	5210	MCS0	10.00	9.66

Note: The tested channel results are marks in bold.

WLAN (5.8Gband)

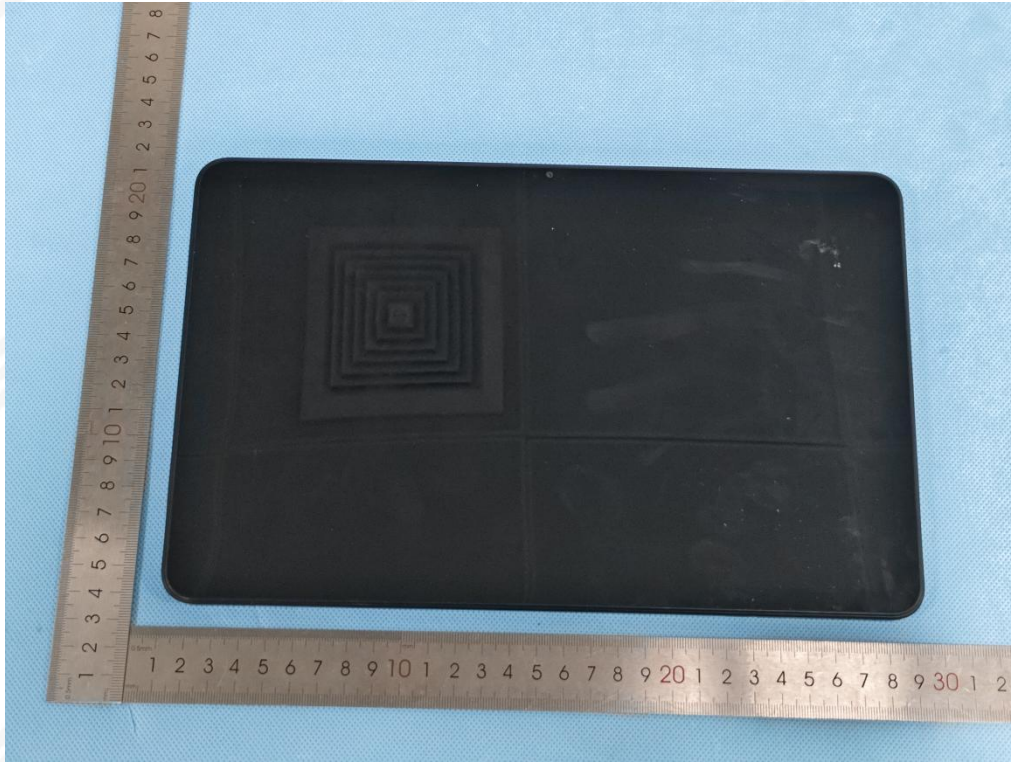
Band	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Max. Tune up	Average Power(dBm)
5.8G WIFI_1TX_ Ant WIFI	802.11a	149	5745	6	10.50	9.48
		157	5785		10.50	10.19
		165	5825		10.50	8.88
	802.11n HT20	149	5745	MCS0	12.00	11.96
		157	5785		13.00	12.67
		165	5825		12.00	11.25
	802.11n HT40	151	5755	MCS0	10.50	10.08
		159	5795		10.50	10.38
	802.11ac VHT20	149	5745	MCS0	13.00	11.81
		157	5785		13.00	12.58
		165	5825		13.00	11.24
	802.11ac VHT40	151	5755	MCS0	10.50	10.03
		159	5795		10.50	10.43
	802.11ac VHT80	155	5775	MCS0	10.50	10.45

Note: The tested channel results are marks in bold.

11. EUT and Test Setup Photo

11.1 EUT Photo

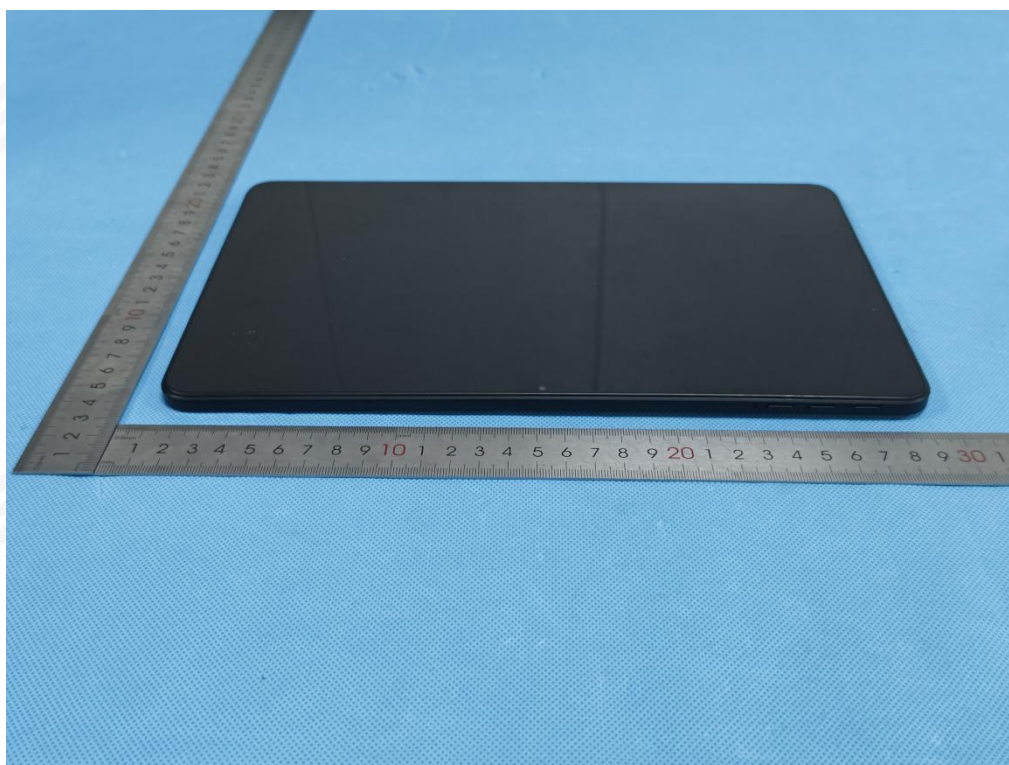
Front side



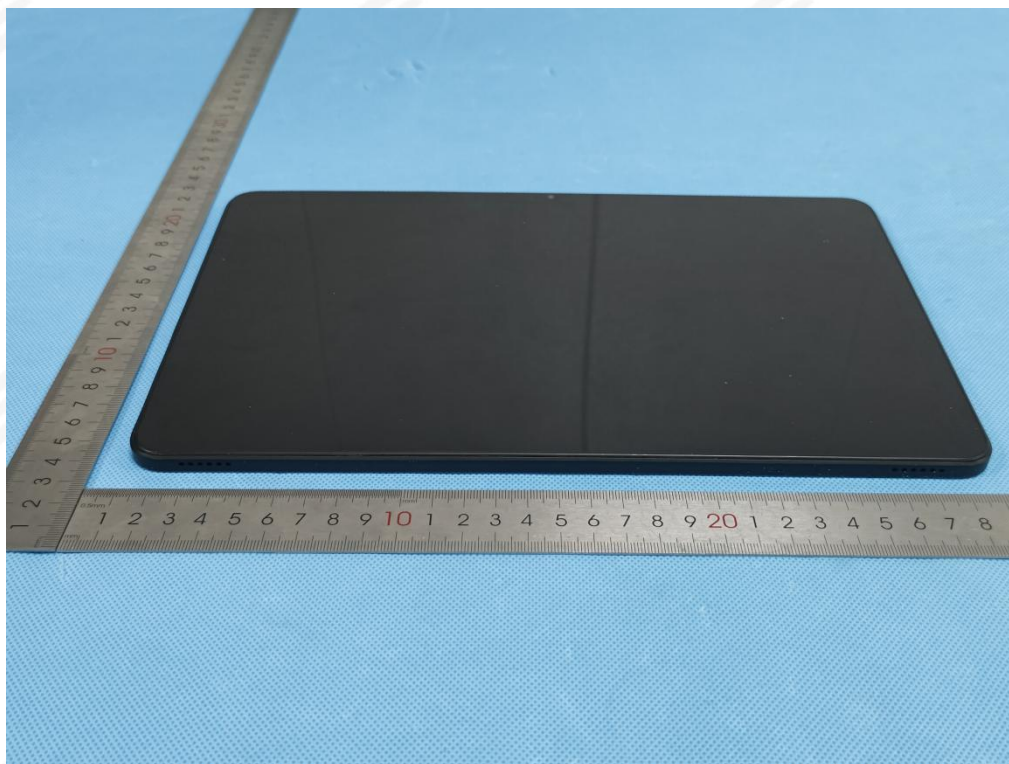
Back side



Top side



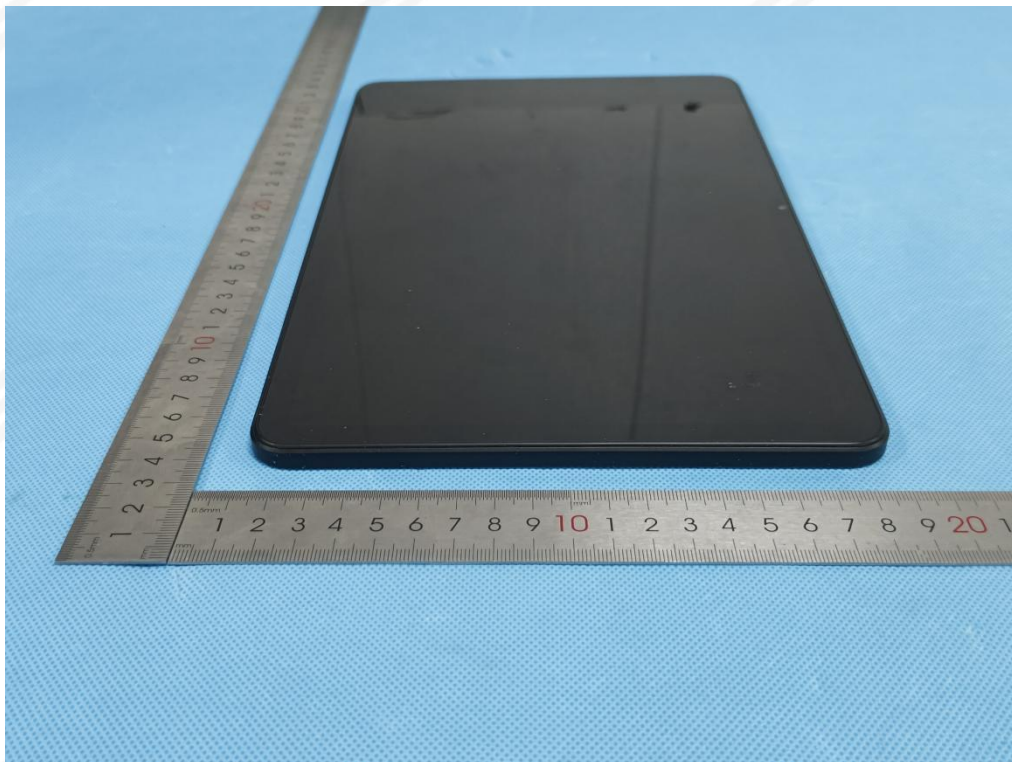
Bottom side



Left side



Right side





11.2 Setup Photo

Photo 1: Front Face_0cm



Photo 2: Rear Face_0cm



Photo 3: Left Side_0cm



Photo 4: Right Side_0cm



Photo 5: Top Side_0cm

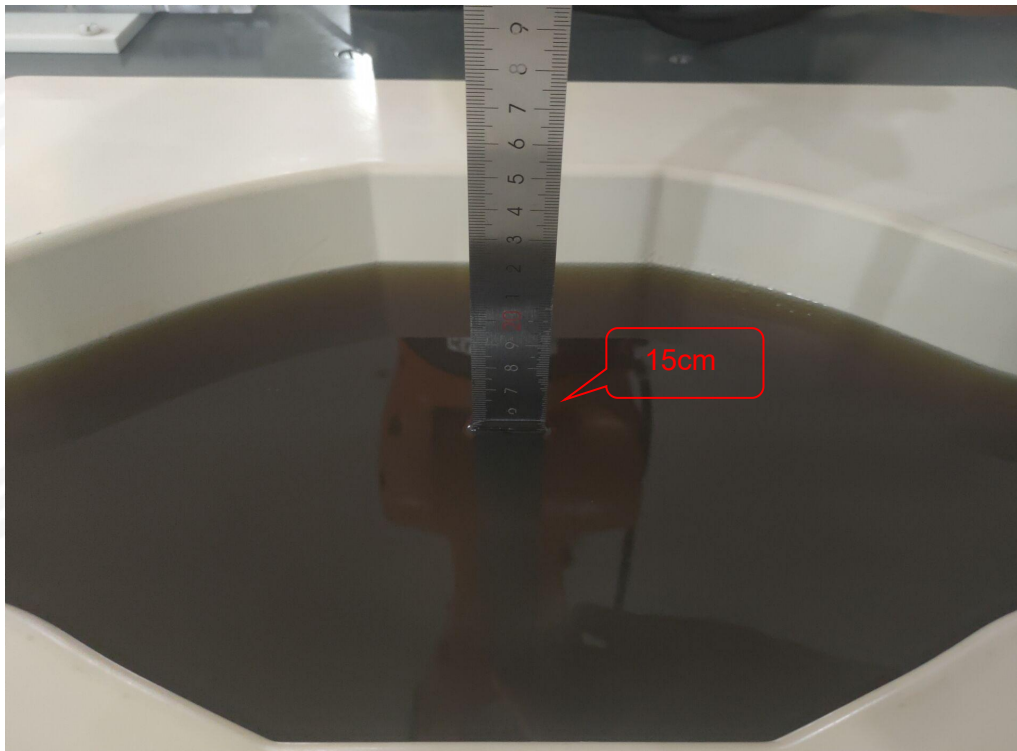


Photo 6: Bottom Side_0cm





Liquid depth (15 cm)





12. SAR Result Summary

12.1 Body SAR

WIFI

Test No.	Band	Channel	Test Position	Separation Distance (cm)	Ant	Data Rate	Duty Cycle	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR 1g (W/kg)	SAR 10g (W/kg)	Reported 10g SAR (W/kg)
W01	802.11n20	11	Rear Face	0	WIFI	HT0	90.00%	15.50	15.00	0.01	0.493	0.182	0.615
W02		11	Top Side	0	WIFI	HT0	90.00%	15.50	15.00	0.09	0.173	0.083	0.216
W03		6	Rear Face	0	WIFI	HT0	90.00%	15.50	14.76	0.03	0.460	0.177	0.606
W04		1	Rear Face	0	WIFI	HT0	90.00%	15.50	14.79	0.05	0.455	0.180	0.595
B01	BT	0	Rear Face	0	WIFI	3DH5	77.35%	2.00	-0.02	0.00	0.148	0.055	0.305
B02		0	Top Side	0	WIFI	3DH5	77.35%	2.00	-0.02	0.03	0.036	0.014	0.074
B03		39	Rear Face	0	WIFI	3DH5	77.35%	2.00	1.61	0.04	0.101	0.038	0.143
B04		78	Rear Face	0	WIFI	3DH5	77.35%	2.00	1.94	-0.06	0.133	0.045	0.174
W05	802.11ac20	48	Rear Face	0	WIFI	VHT0	95.57%	15.00	14.64	0.01	0.516	0.131	0.587
W06		48	Top Side	0	WIFI	VHT0	95.57%	15.00	14.64	0.03	0.225	0.092	0.256
W07		36	Rear Face	0	WIFI	VHT0	95.57%	15.00	13.71	0.03	0.408	0.113	0.575
W08		40	Rear Face	0	WIFI	VHT0	95.57%	15.00	13.55	0.03	0.392	0.106	0.573
W10	802.11n20	157	Rear Face	0	WIFI	HT0	95.57%	13.00	12.67	0.03	0.679	0.199	0.767
W11		157	Top Side	0	WIFI	HT0	95.57%	13.00	12.67	0.05	0.386	0.102	0.436
W12		149	Rear Face	0	WIFI	HT0	95.57%	12.00	11.96	-0.08	0.736	0.215	0.777
W25		165	Rear Face	0	WIFI	HT0	95.57%	12.00	11.25	0.03	0.607	0.171	0.755

Note:

- Per KDB 447498 D04, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
- Per KDB 865664 D01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/Kg.
- Per KDB 865664 D01, if the ratio of largest to smallest SAR for the original and first repeated measurement is ≤ 1.2 and the measured SAR < 1.45 W/Kg, only one repeated measurement is required.
- 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.
- The ratio is the difference in percentage between original and repeated measured SAR.



12.2 Simultaneous Multi-band Transmission Evaluation

Application Simultaneous Transmission information:

SAR compliance for simultaneous transmission must be considered when the maximum duration of overlapping transmissions, including network hand-offs, is greater than 30 seconds. This device don't contains multiple transmitters that may operate simultaneously, and therefore simultaneous transmission analysis is not require.

Note: Bluetooth and WLAN can't simultaneous transmission at the same time.

Position SAR _{10g} (W/Kg)	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
WIFI 2.4G	/	0.615	/	/	0.216	/
WIFI 5.2G	/	0.587	/	/	0.256	/
WIFI 5.8G	/	0.777	/	/	0.436	/
BT	/	0.305	/	/	0.074	/
MAX $\sum$ SAR _{10g}	/	0.777	/	/	0.436	/

Note: Thus SAR_{MAX,total}= 0.777 W/Kg < 1.6 W/Kg, it is compliant with 1999/519/EC.

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna.

When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR-1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR-1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.



13. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
750MHz Dipole	MVG	SID750	SN 30/14 DIP0G750-331	2023-07-04	2026-07-03
835MHz Dipole	MVG	SID835	SN 30/14 DIP0G835-332	2023-07-04	2026-07-03
900MHz Dipole	MVG	SID900	5023-DIP0G900-746	2023-12-20	2026-12-19
1800MHz Dipole	MVG	SID1800	5023-DIP1G800-747	2023-12-20	2026-12-19
1900MHz Dipole	MVG	SID1900	SN 30/14 DIP1G900-333	2023-09-14	2026-09-13
2000MHz Dipole	MVG	SID2000	SN 30/14 DIP2G000-334	2023-07-04	2026-07-03
2450MHz Dipole	MVG	SID2450	SN 30/14 DIP2G450-335	2023-07-04	2026-07-03
2600MHz Dipole	MVG	SID2600	SN 30/14 DIP2G600-336	2023-07-04	2026-07-03
3500MHz Dipole	MVG	SID3500	SN 08/21 DIP3G 500-553	2024-02-14	2027-02-13
3700MHz Dipole	MVG	SID3700	SN 08/21 DIP3G 700-554	2024-02-14	2027-02-13
Waveguide	MVG	SWG5500	SN 13/14 WGA32	2023-07-04	2026-07-03
Data Acquisition Electronics DAEx	SPEAG	DAE3	428	2025-09-08	2026-09-07
E-field Probe	SPEAG	EX3DV4	3806	2025-09-11	2026-09-10
Dielectric Probe Kit	MVG	SCLMP	SN 32/14 OCPG67	2025-09-15	2026-09-14
Antenna	MVG	ANTA3	SN 07/13 ZNTA52	N/A	N/A
Attenuator	Agilent	HXT-10-8-SMA	240327017	2025-02-22	2026-02-21
Directional coupler	Xi'an Xingbo	XBOH-OA08-20dB	211123-4-3	2025-02-22	2026-02-21
Network Analyzer	Agilent	E5071C	MY46520378	2025-09-26	2026-09-24
Multi Meter	Keithley	Multi Meter 2000	4050073	2025-09-22	2026-09-21
Signal Generator	Agilent	N5182A	MY50140530	2025-09-26	2026-09-25
Wireless Communication Test Set	Agilent	8960-E5515C	MY48360751	2025-02-22	2026-02-21
Wireless Communication Test Set	R&S	CMW500	156324	2025-09-25	2026-09-24
Power Amplifier	DESAY	WCS-DLNA50M8G50G1	CSKJLNA231227A	2025-09-29	2026-09-28
Power Meter	R&S	NRP	100510	2025-09-25	2026-09-24
Power Sensor	R&S	NRP-Z11	101919	2025-09-25	2026-09-24
Power Sensor	Keysight	U2021XA	MY56280002	2025-09-25	2026-09-24
Temperature hygrometer	TOPRIE	TP502V4-P	6700000124198	2025-10-09	2026-10-08
Thermograph	Elitech	RC-4	S/N EF7176501537	2025-10-17	2026-10-16



Appendix A. System Validation Plots

Test Laboratory: STS Lab

Date: 2025/12/19

System Check_2450Mhz

DUT: Dipole 2450 MHz D2450V2;

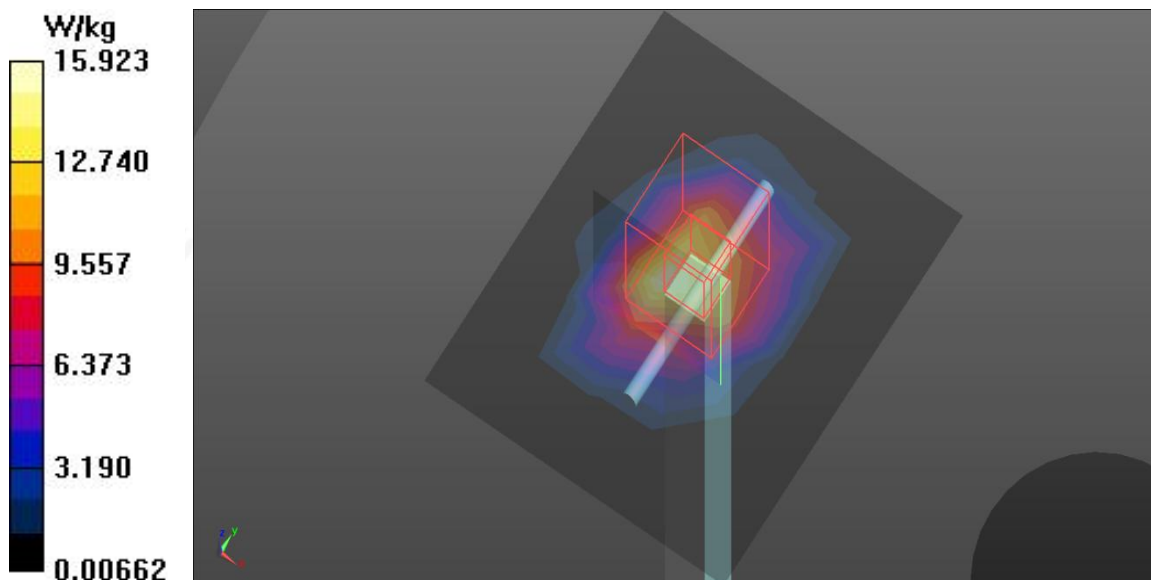
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.788$ S/m; $\epsilon_r = 41.118$; $\rho = 1000$ kg/m³
Ambient Temperature: 20.6 °C; Liquid Temperature: 20.3 °C

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(6.30,6.71,6.90) @ 2450 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 31.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (6x7x1): Measurement grid: $dx=12$ mm, $dy=12$ mm
Maximum value of SAR (measured) = 15.923 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
Reference Value = 114.1 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 28.7 W/kg
SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.01 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 46.5%
Maximum value of SAR (measured) = 22.4 W/kg





System Check_5200Mhz

DUT: Dipole D5GHzV2;

Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used : $f = 5200$ MHz; $\sigma = 4.556$ S/m; $\epsilon_r = 36.378$; $\rho = 1000$ kg/m³
Ambient Temperature: 20.6 °C; Liquid Temperature: 20.3 °C

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(4.96,5.28,5.44) @ 5200 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 23.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (6x5x1): Measurement grid: $dx=10$ mm, $dy=10$ mm
Maximum value of SAR (measured) = 3.35 W/kg

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

Reference Value = 20.08 V/m; Power Drift = -0.02 dB

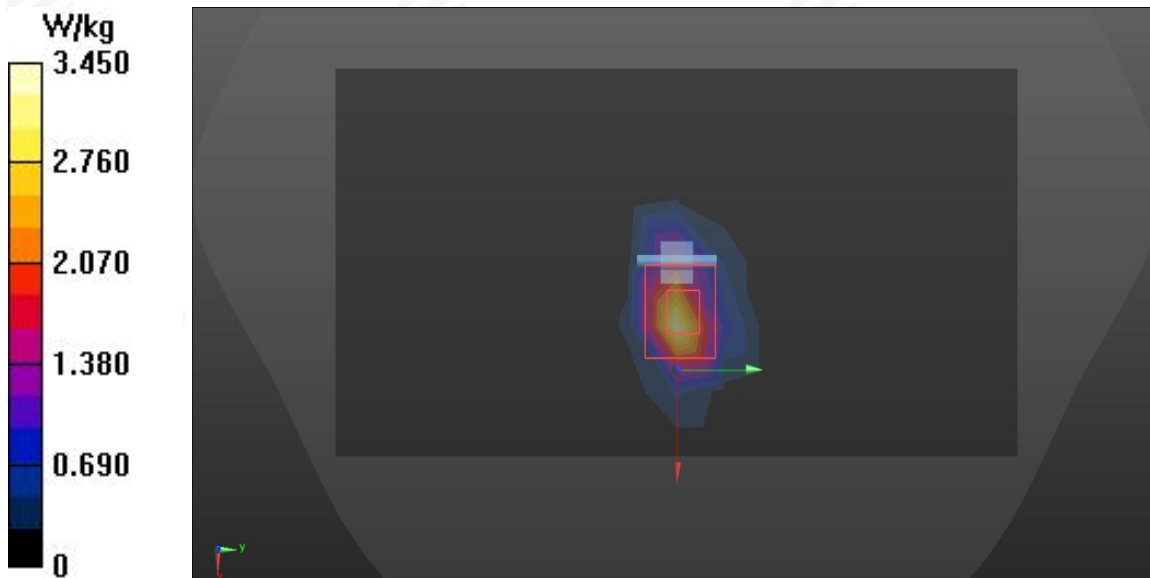
Peak SAR (extrapolated) = 7.22 W/kg

SAR(1 g) = 1.58 W/kg; SAR(10 g) = 0.569 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 53%

Maximum value of SAR (measured) = 3.45 W/kg





System Check_5800Mhz

DUT: Dipole D5GHzV2;

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 5.161 \text{ S/m}$; $\epsilon_r = 35.285$; $\rho = 1000 \text{ kg/m}^3$
Ambient Temperature: $20.6 \text{ }^\circ\text{C}$; Liquid Temperature: $20.3 \text{ }^\circ\text{C}$

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(4.59,4.89,5.03) @ 5800 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 23.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (6x5x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (measured) = 3.67 W/kg

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

Reference Value = 28.25 V/m ; Power Drift = 0.03 dB

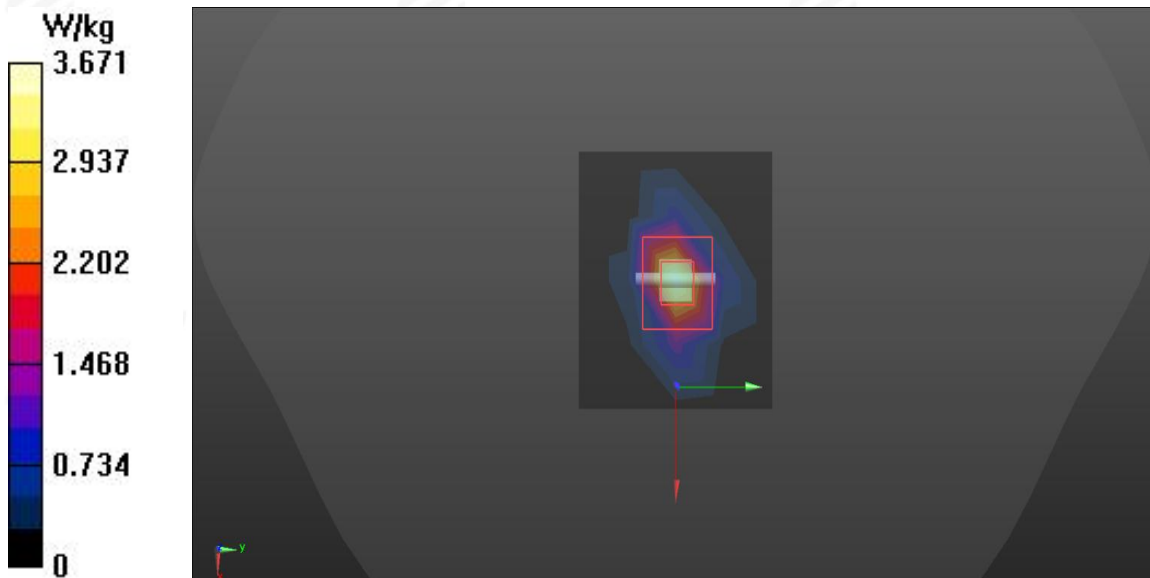
Peak SAR (extrapolated) = 8.48 W/kg

SAR(1 g) = 1.85 W/kg ; SAR(10 g) = 0.608 W/kg

Smallest distance from peaks to all points 3 dB below = 6.9 mm

Ratio of SAR at M2 to SAR at M1 = 48.2%

Maximum value of SAR (measured) = 3.56 W/kg





Appendix B. SAR Test Plots

Test Laboratory: STS Lab

Date: 2025/12/19

B01_BT_CH0_Rear Face_0cm_WIFI**DUT: Tablet;**

Communication System: UID 10038 - CAA, IEEE 802.15.1 Bluetooth (8-DPSK, DH5); Frequency: 2402 MHz;
Duty Cycle: 1:1

Medium parameters used: $f = 2402$ MHz; $\sigma = 1.754$ S/m; $\epsilon_r = 41.156$; $\rho = 1000$ kg/m³

Ambient Temperature: 20.6 °C; Liquid Temperature: 20.3 °C

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(6.30,6.71,6.90) @ 2402 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 31.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (7x11x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.110 W/kg

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

Reference Value = 0 V/m; Power Drift = 0.01 dB

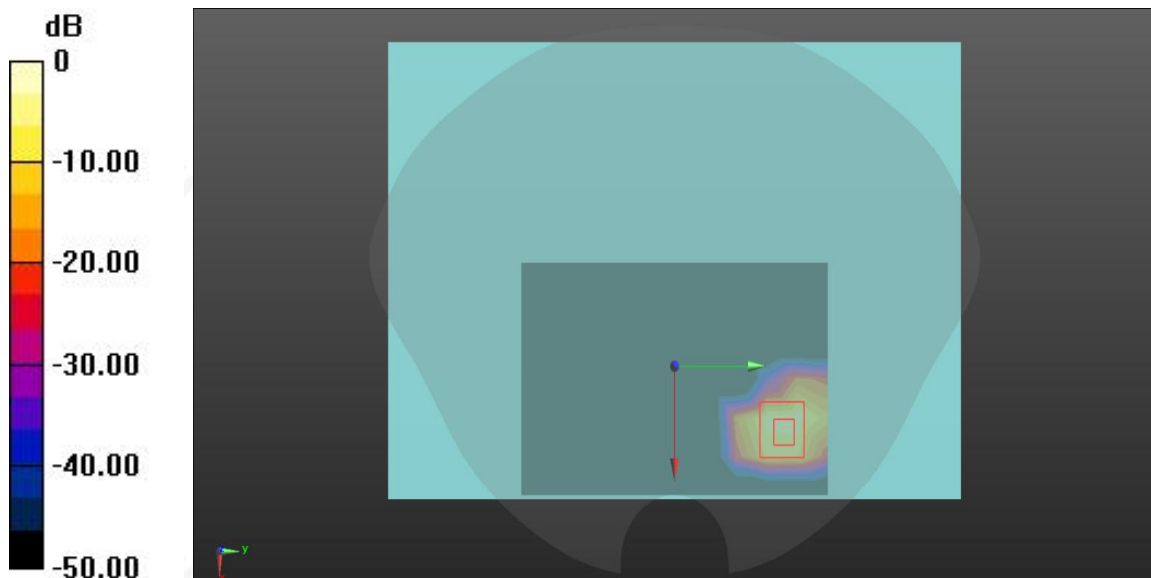
Peak SAR (extrapolated) = 0.329 W/kg

SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.055 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 40.4%

Maximum value of SAR (measured) = 0.264 W/kg





W01_802.11n20_CH11_Rear Face_0cm_WIFI

DUT: Tablet;

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle);

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.792$ S/m; $\epsilon_r = 40.115$; $\rho = 1000$ kg/m³

Ambient Temperature: 20.6 °C; Liquid Temperature: 20.3 °C

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(6.30,6.71,6.90) @ 2462 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 31.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (7x11x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.888 W/kg

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

Reference Value = 0 V/m; Power Drift = 0.01 dB

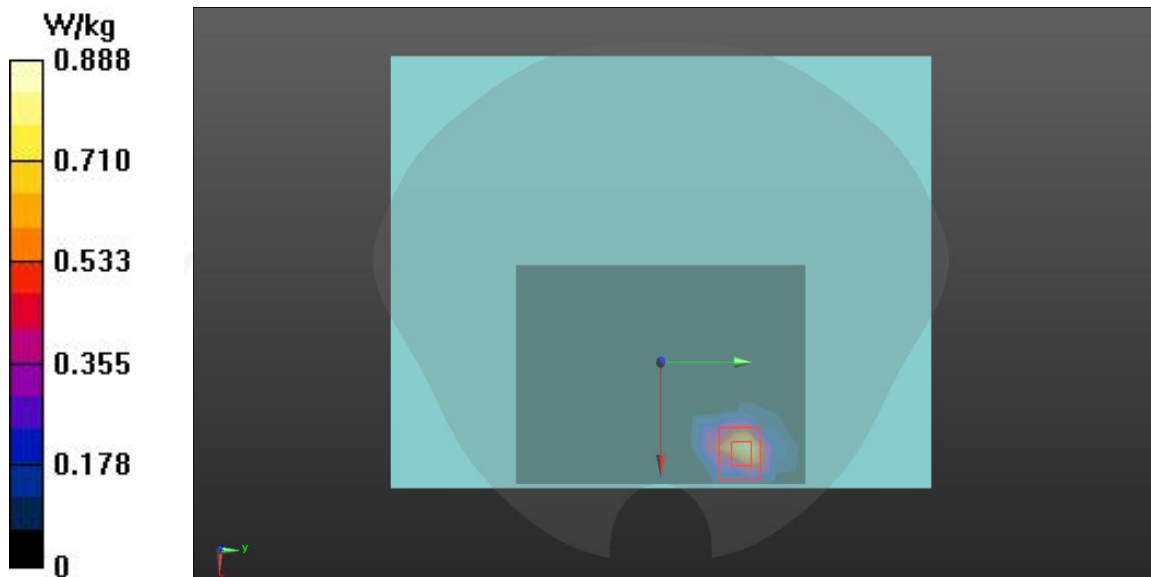
Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.493 W/kg; SAR(10 g) = 0.182 W/kg

Smallest distance from peaks to all points 3 dB below = 4.8 mm

Ratio of SAR at M2 to SAR at M1 = 37.3%

Maximum value of SAR (measured) = 0.933 W/kg





W05_802.11ac20_CH48_Rear Face_0cm_WIFI

DUT: Tablet;

Communication System: UID 10607 - AAB, IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle);

Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used : $f = 5240$ MHz; $\sigma = 4.575$ S/m; $\epsilon_r = 36.363$; $\rho = 1000$ kg/m³

Ambient Temperature: 20.6 °C; Liquid Temperature: 20.3 °C

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(4.96,5.28,5.44) @ 5240 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 31.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (7x12x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.429 W/kg

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

Reference Value = 0 V/m; Power Drift = 0.01 dB

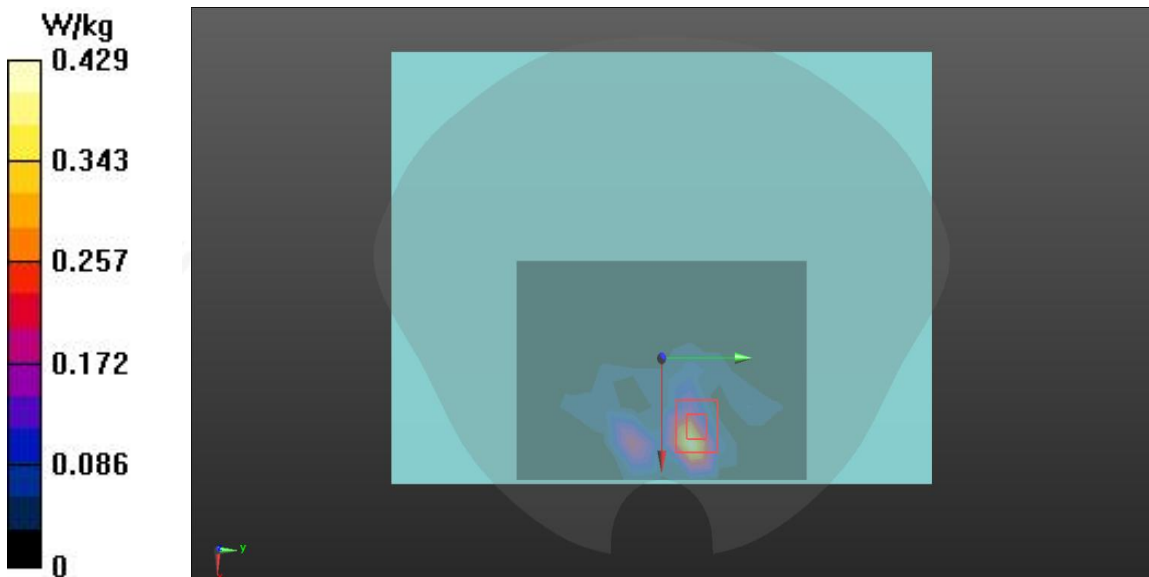
Peak SAR (extrapolated) = 2.11 W/kg

SAR(1 g) = 0.516 W/kg; SAR(10 g) = 0.131 W/kg

Smallest distance from peaks to all points 3 dB below = 6.6 mm

Ratio of SAR at M2 to SAR at M1 = 48.6%

Maximum value of SAR (measured) = 1.10 W/kg





W12_802.11n20_CH149_Rear Face_0cm_WIFI

DUT: Tablet;

Communication System: UID 10591 - AAB, IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle);

Frequency: 5745 MHz; Duty Cycle: 1:1

Medium parameters used : $f = 5745 \text{ MHz}$; $\sigma = 5.098 \text{ S/m}$; $\epsilon_r = 35.409$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $20.6 \text{ }^\circ\text{C}$; Liquid Temperature: $20.3 \text{ }^\circ\text{C}$

DASY Configuration:

- Probe: EX3DV4 - SN3806; ConvF(4.59,4.89,5.03) @ 5745 MHz; Calibrated: 2025/09/11
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = 1.0, 31.0$
- Electronics: DAE3 Sn428; Calibrated: 2025/09/08
- Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1266
- DASY52 52.10.3(1513); SEMCAD X 14.6.13(7474)

Area Scan (7x12x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.966 W/kg

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

Reference Value = 2.802 V/m ; Power Drift = -0.08 dB

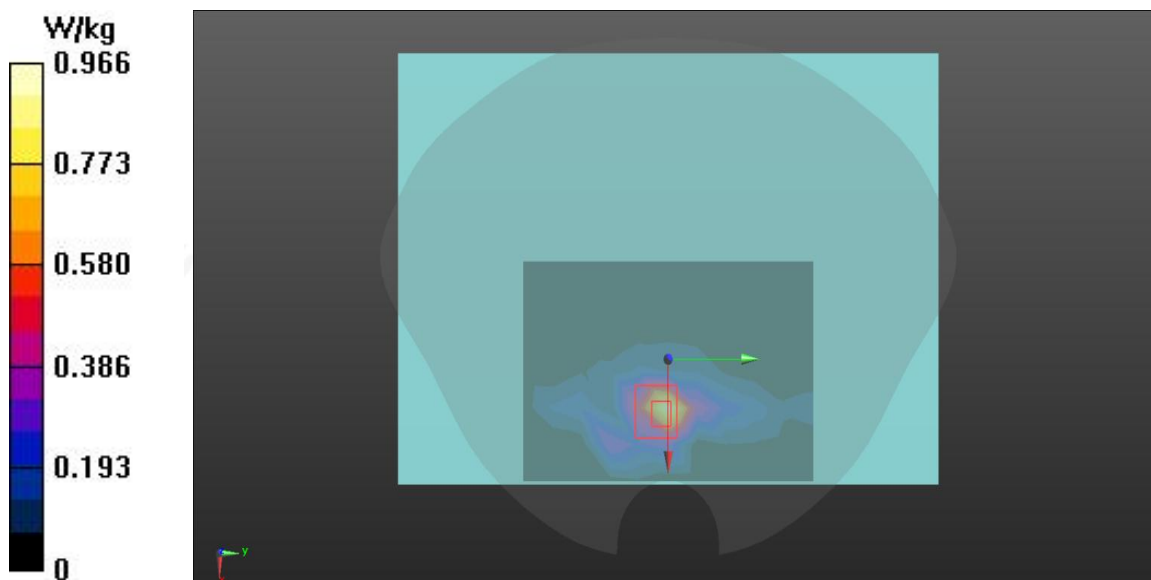
Peak SAR (extrapolated) = 3.88 W/kg

SAR(1 g) = 0.736 W/kg ; SAR(10 g) = 0.215 W/kg

Smallest distance from peaks to all points 3 dB below = 4.8 mm

Ratio of SAR at M2 to SAR at M1 = 44.7%

Maximum value of SAR (measured) = 2.39 W/kg





Appendix C. Probe Calibration and Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※