SAR TEST REPORT

Product Name: NOTEBOOK COMPUTER

Model Name: L1, COLORFUL L1**********, COLORFUL Rimbook L1**********, L1**********, Rimbook L1**********

FCC ID: 2BN3V-L1

Issued For	:	Shenzhen Colorful Yugong Applied Technology Innovation Co., Ltd. 1103, 11th Floor, Building 4, Shenzhen New Generation Industrial Park, No. 136, ZhongkangRoad, Meilin Street, Futian District, Shenzhen, China
Issued By	:	Shenzhen LGT Test Service Co., Ltd. Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China

Report Number:	LGT25C165HA02
Sample Received Date:	Mar. 25, 2025
Date of Test:	Mar. 27, 2025~ Mar. 28, 2025
Date of Issue:	Apr. 11, 2025
Max. SAR (1g):	Body: 0.479 W/kg

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Revision History

Rev.	Issue Date	Contents
00	Apr. 11, 2025	Initial Issue

TEST REPORT CERTIFICATION

Applicant	Shenzhen Colorful Yugong Applied Technology Innovation Co., Ltd.
Address	1103, 11th Floor, Building 4, Shenzhen New Generation Industrial Park, No. 136, ZhongkangRoad, Meilin Street, Futian District, Shenzhen, China
Manufacture	Shenzhen Colorful Yugong Applied Technology Innovation Co., Ltd.
Address	1103, 11th Floor, Building 4, Shenzhen New Generation Industrial Park, No. 136, ZhongkangRoad, Meilin Street, Futian District, Shenzhen, China
Product Name	NOTEBOOK COMPUTER
Trademark	COLORFUL
Model Name	L1, COLORFUL L1**********, COLORFUL Rimbook L1**********, L1**********, Rimbook L1**********
Sample number	LGT2503175-1

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
ANSI/IEEE Std. C95.1-2019 FCC 47 CFR Part 2 (2.1093) IEEE 1528: 2013	PASS

Prepared by:

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Deng Deng
Engineer

Approved by:

Vita Li
Manager

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	NOTEBOOK COMPUTER	
Trademark	COLORFUL	
Model Name	L1	
Series Model	COLORFUL L1**********, COLORFUL Rimbook L1**********, L1**********, Rimbook L1**********	
Model Difference	"*" represents for 0-9, a-z, A-Z, "-" or spaces to indicate different sales channels or different colors.	
Device Category	Portable	
Product stage	Production unit	
Hardware Version	N/A	
Software Version	N/A	
Frequency Range	WLAN 802.11b/g/n20/ax20: 2412 to 2472MHz WLAN 802.11n40/ax40: 2422 to 2462MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80: 5150 to 5250 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80: 5250 to 5350 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80: 5470 to 5725 MHz WLAN 802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80: 5725 to 5850 MHz Bluetooth: 2402 MHz to 2480 MHz	
Max. Reported SAR(1g): (Limit:1.6W/kg) Test distance: Body:0mm	Mode	Body (W/ kg)
	2.4G WLAN	0.266
	5.2G WLAN	0.244
	5.3G WLAN	0.327
	5.6G WLAN	0.452
	5.8G WLAN	0.479
Battery	Rated Voltage: DC 11.55V Capacity: 5200mAh	
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 802.11ax(OFDM, OFDMA): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024QAM 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,256-QAM 802.11ax(OFDM, OFDMA): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024QAM Bluetooth: GFSK +π/4DQPSK+8DPSK	
Antenna Specification	Bluetooth: FPC Antenna WLAN: FPC Antenna	
Operating Mode	Maximum continuous output	
Hotspot Mode	Not Support	
DTM Mode	Not Support	

1.2 Test Environment

Ambient conditions in the SAR laboratory:

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

1.3 Test Factory

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate	FCC Registration No.: 746540
	A2LA Certificate No.: 6727.01
	IC Registration No.: CN0136

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	ANSI/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
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 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
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 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
8	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices
9	FCC 616217 D04 SAR for laptop and tablets v01r02	SAR Evaluation Considerations For Laptop, Notebook, Netbook And Tablet Computers

(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:

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

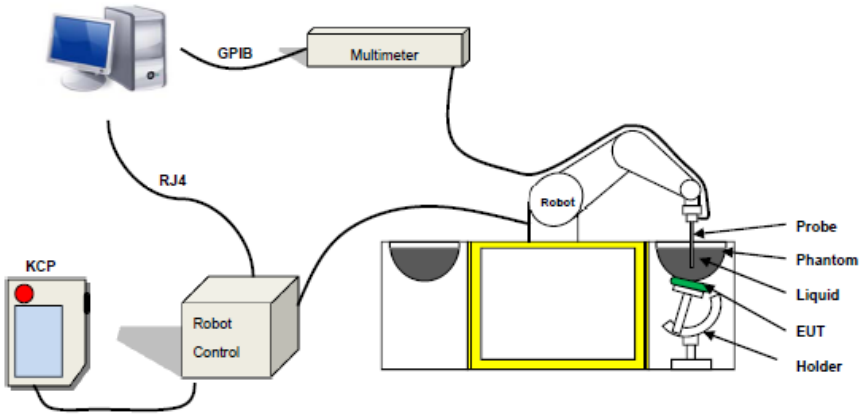
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

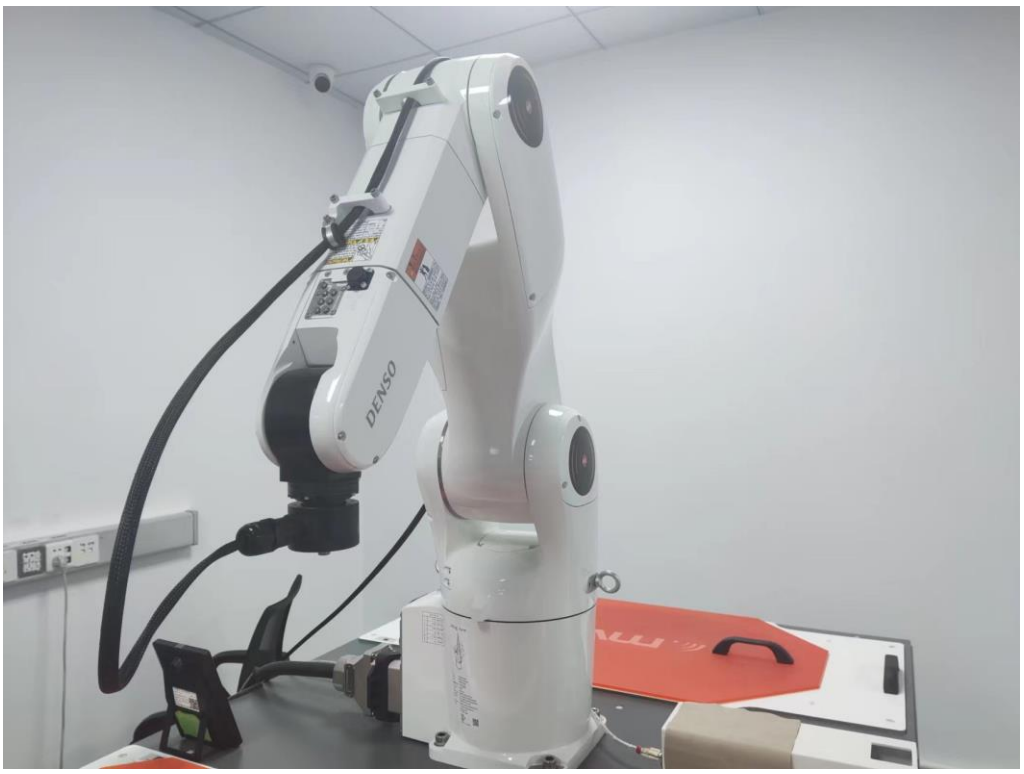
3.2 SAR System

MVG SAR System Diagram:



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 1g mass.

3.2.1 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 04/22 EPGO364 with following specifications is used
- Probe Length: 330 mm
- Length of Individual Dipoles: 2mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter: 2.5 mm
- Distance between dipole/probe extremity: 1 mm
- Dynamic range: 0.01-100 W/kg
- Probe linearity: 3%
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 600 MHz to 6 GHz for head & body simulating liquid.
-Angle between probe axis (evaluation axis) and surface normal line: less than 30°

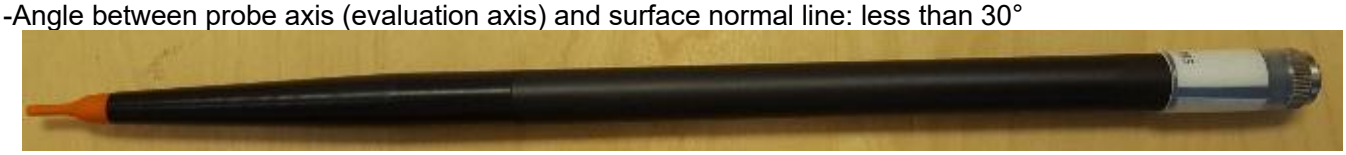


Figure 1-MVG COMOSAR Dosimetric E field Probe

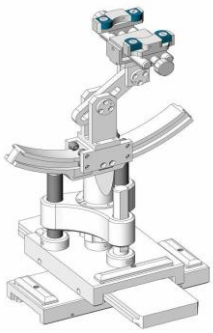
3.2.2 Phantom

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.

Figure-SN 06/22 SAM 148

Figure-SN 06/22 ELLI 51

3.2.3 Device Holder



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

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 of 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	εr	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

LIQUID MEASUREMENT RESULTS

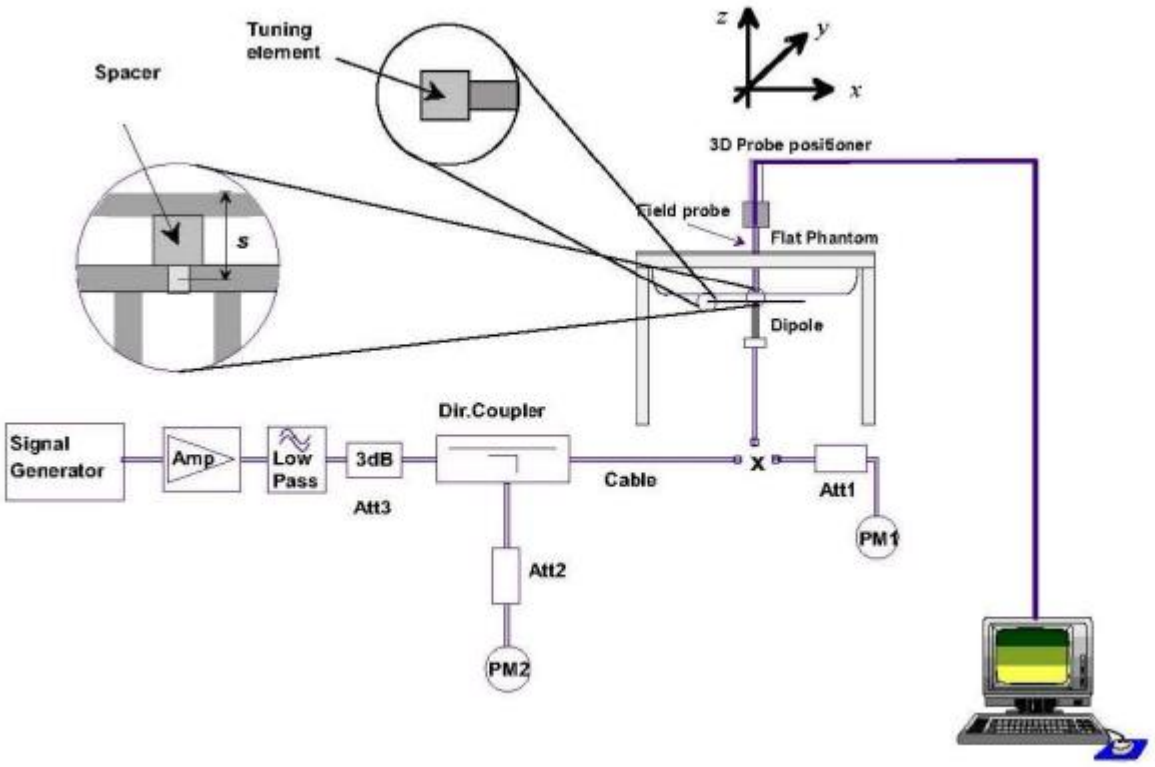
Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency (MHz)	Temp. [°C]					
2025-03-28	21.2	55	2450	20.9	Permittivity	39.20	40.14	2.40	±5
					Conductivity	1.80	1.78	-1.11	±5
2025-03-27	22.0	45	5200	20.2	Permittivity	36.00	36.93	2.58	±5
					Conductivity	4.66	4.62	-0.86	±5
2025-03-27	22.4	52	5400	22	Permittivity	35.80	36.20	1.12	±5
					Conductivity	4.86	4.83	-0.62	±5
2025-03-27	22.8	44	5600	20.5	Permittivity	35.55	37.02	4.14	±5
					Conductivity	5.07	5.08	0.30	±5
2025-03-27	22.1	57	5800	20.2	Permittivity	35.30	35.96	1.87	±5
					Conductivity	5.27	5.23	-0.76	±5

5. SAR System Validation

5.1 Validation System

Each MVG system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the MVG software, enable the user to conduct the system performance check and system validation. System kit includes a dipole, and dipole device holder.

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



5.2 Validation Result

Comparing to the original SAR value provided by MVG, the validation data should be within its specification of ±10 %.

Date	Freq.	Power	Tested Value	Normalized SAR	Target SAR	Tolerance	Limit
	(MHz)	(mW)	(W/Kg)	(W/kg)	1g(W/kg)	(%)	(%)
2025-03-28	2450	100	5.418	54.18	54.21	-0.06	10
2025-03-27	5200	100	8.110	81.10	80.96	0.17	10
2025-03-27	5400	100	8.475	84.75	84.63	0.14	10
2025-03-27	5600	100	8.077	80.77	80.97	-0.25	10
2025-03-27	5800	100	8.134	81.34	81.68	-0.42	10

Note:

1. The tolerance limit of System validation ±10%.
2. The dipole input power (forward power) was 100 mW.
3. The results are normalized to 1 W input power.

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 to16 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.

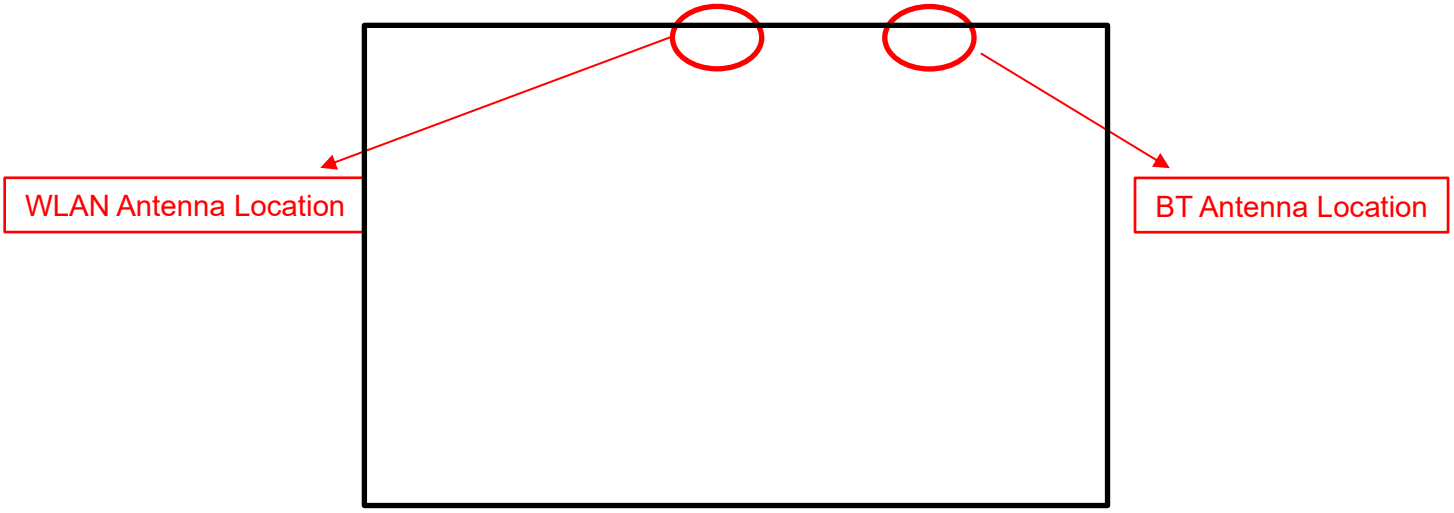
➢ Area Scan& Zoom Scan

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

It is a NOTEBOOK COMPUTER, support WLAN/BT mode.



(Back view)

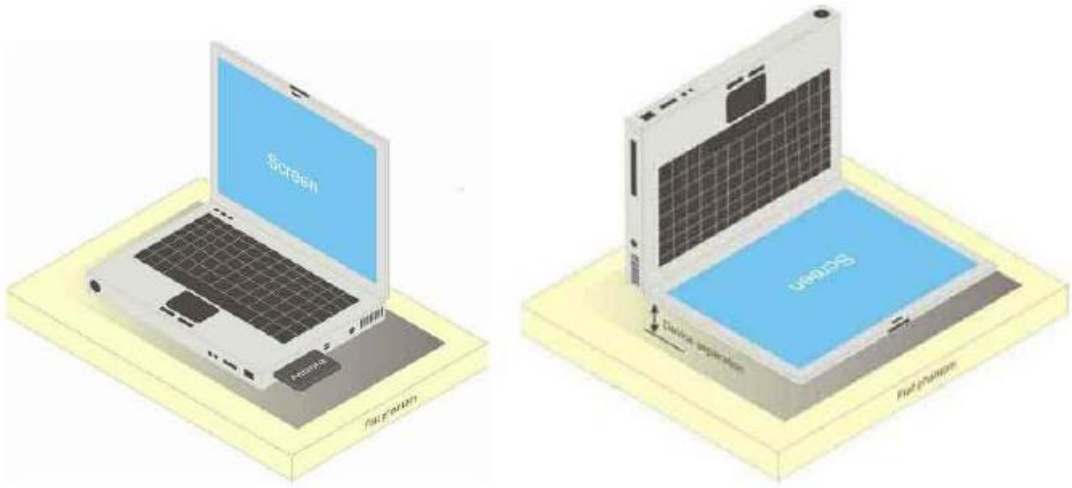
Note 1: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

8. EUT Test Position

The EUT was tested on the rear side.

8.1 Body-supported Position Conditions

The required minimum test separation distance for incorporating transmitters and antennas into laptop , notebook and netbook computer displays is determined with the display screen opened at an angle of 90° to the keyboard compartment. If a computer has other operating configurations that require a di fferent or more conservative display to keyboard angle for normal use, a KDB inquiry should be submi tted to determine the test requirements. When antennas are incorporated in the keyboard section of a laptop computer, SAR is required for the bottom surface of the keyboard. Provided tablet use conditio ns are not supported by the laptop computer, SAR tests for bystander exposure from the edges of the Keyboard and display screen of laptop computers are generally not required.



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.

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.8	N	1	1	1	5.8	5.8	∞
Axial Isotropy	3.5	R	√3	√0.5	√0.5	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	√3	√0.5	√0.5	2.41	2.41	∞
Boundary effect	1	R	√3	1	1	0.58	0.58	∞
Linearity	4.7	R	√3	1	1	2.71	2.71	∞
System detection limits	1	R	√3	1	1	0.58	0.58	∞
Modulation response	3	R	√3	1	1	1.73	1.73	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	√3	1	1	0.00	0.00	∞
Integration Time	1.4	R	√3	1	1	1.81	1.81	∞
RF ambient conditions-Noise	3	R	√3	1	1	1.73	1.73	∞
RF ambient conditions-reflections	3	R	√3	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	1.4	R	√3	1	1	0.81	0.81	∞
Extrapolation, Interpolation and Integration Algoritms for Max, SAR	2.3	R	√3	1	1	1.33	1.33	∞
Test sample Related								
Test sample positioning	2.6	N	1	1	1	2.60	2.60	11
Device holder uncertainty	3	N	1	1	1	3.00	3.00	7
Output Power Variation - SAR Drift Measurement	5	R	√3	1	1	2.89	2.89	∞
SAR scaling	2	R	√3	1	1	1.15	1.15	∞
Phantom and tissue parameters								
Phantom uncertainty (shape and thickness uncertainty)	4	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	2	N	1	1	0.84	2.00	1.68	∞
Liquid Conductivity - Measurement Uncertainty)	4	N	1	0.78	0.71	3.12	2.84	5
Liquid Permittivity - Measurement Uncertainty	5	N	1	0.23	0.26	1.15	1.30	5
Liquid Conductivity (Temperature Uncertainty)	2.5	R	√3	0.78	0.71	1.13	1.02	∞
Liquid Permittivity (Temperature Uncertainty)	2.5	R	√3	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty		RSS				10.47	10.34	
Expanded Uncertainty (95% Confidence interval)		K				20.95	20.69	

9.2 System validation Uncertainty

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.8	N	1	1	1	5.8	5.8	∞
Axial Isotropy	3.5	R	$\sqrt{3}$	1	1	2.02	2.02	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	0.71	0.71	∞
System detection limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	0	N	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, Interpolation and Integration Algoritms for Max, SAR	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Dipole								
Deviation of Experimental Source from Numerical Source	5	N	1	1	1	5.00	5.00	∞
Input Power and SAR Drift Measurement	0.5	R	$\sqrt{3}$	1	1	0.29	0.29	∞
Dipole Axis to Liquid Distance	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom uncertainty (shape and thickness uncertainty)	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	2	N	1	1	0.84	2.00	1.68	∞
Liquid Conductivity - Measurement Uncertainty)	4	N	1	0.78	0.71	3.12	2.84	5
Liquid Permittivity - Measurement Uncertainty	5	N	1	0.23	0.26	1.15	1.30	5
Liquid Conductivity (Temperature Uncertainty)	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid Permittivity (Temperature Uncertainty)	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty		RSS				10.16	10.03	
Expanded Uncertainty (95% Confidence interval)		K				20.32	20.06	

10. Conducted Power Measurement

10.1 Test Result

2.4G WLAN

2.4GWIFI				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
802.11b	1	2412	16.32	42.85
	6	2437	16.08	40.55
	11	2462	16.42	43.85
802.11g	1	2412	20.6	114.82
	6	2437	20.79	119.95
	11	2462	20.77	119.40
802.11n-HT20	1	2412	20.3	107.15
	6	2437	20.39	109.40
	11	2462	20.47	111.43
802.11n-HT40	3	2422	21.37	137.09
	6	2437	21.46	139.96
	9	2452	19.3	85.11
802.11ax(HEW20)	1	2412	20.85	121.62
	6	2437	20.91	123.31
	11	2462	20.88	122.46
802.11ax(HEW40)	3	2422	21.77	150.31
	6	2437	21.87	153.82
	9	2452	19.73	93.97

Bluetooth

BT				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	8.08	6.43
	39	2441	8.19	6.59
	78	2480	8.2	6.61
π/4-QPSK(2Mbps)	0	2402	5.21	3.32
	39	2441	5.44	3.50
	78	2480	5.84	3.84
8DPSK(3Mbps)	0	2402	5.08	3.22
	39	2441	5.28	3.37
	78	2480	5.71	3.72

Note:

Calculation Value =[(max. power of channel, mW)/(min. test separation distance, mm)] -[f(GHz)

BT:6.61*√2.480=2.081 ≤3.0, the estimated SAR≤ 3.0 for 1-g SAR, separation distance ≤ 5mm, complies with the exemption requirements.

WLAN (5.2Gband)

5.2G WLAN				
Mode	Channel Number	Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11a20	36	5180	8.64	7.31
	40	5200	8.96	7.87
	48	5240	9.19	8.30
802.11n-HT20	36	5180	8.67	7.36
	40	5200	8.86	7.69
	48	5240	8.83	7.64
802.11n-HT40	38	5190	7.17	5.21
	46	5230	9.45	8.81
802.11ac-VHT20	36	5180	8.36	6.85
	40	5200	8.44	6.98
	48	5240	8.94	7.83
802.11ac-VHT40	38	5190	7.65	5.82
	46	5230	9.8	9.55
802.11ax-VHT20	36	5180	8.53	7.13
	40	5200	8.39	6.90
	48	5240	8.83	7.64
802.11ax-VHT40	38	5190	7.5	5.62
	46	5230	9.78	9.51
802.11ax-VHT80	42	5210	6.48	4.45
802.11ac-VHT80	42	5210	6.47	4.44

WLAN (5.3Gband)

5.3G WLAN				
Mode	Channel Number	Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11a20	52	5260	9.76	9.46
	60	5300	10.91	12.33
	64	5320	10.86	12.19
802.11n-HT20	52	5260	9.61	9.14
	60	5300	10.8	12.02
	64	5320	10.75	11.89
802.11n-HT40	54	5270	11.94	15.63
	62	5310	9.56	9.04
802.11ac-VHT20	52	5260	9.5	8.91
	60	5300	10.72	11.80
	64	5320	10.44	11.07
802.11ac-VHT40	54	5270	11.73	14.89
	62	5310	9.44	8.79
802.11ax-VHT20	52	5260	9.23	8.38
	60	5300	10.45	11.09
	64	5320	10.33	10.79
802.11ax-VHT40	54	5270	11.33	13.58
	62	5310	9.63	9.18
802.11ax-VHT80	58	5290	10	10.00
802.11ac-VHT80	58	5290	9.8	9.55

WLAN (5.6Gband)

5.6G WLAN				
Mode	Channel Number	Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11a20	100	5500	9.4	8.71
	116	5580	10.13	10.30
	140	5700	10.01	10.02
802.11n-HT20	100	5500	9.28	8.47
	116	5580	10.1	10.23
	140	5700	9.92	9.82
802.11n-HT40	102	5510	9.07	8.07
	110	5550	10.83	12.11
	134	5670	11.04	12.71
802.11ac-VHT20	100	5500	9.27	8.45
	116	5580	9.87	9.71
	140	5700	9.73	9.40
802.11ac-VHT40	102	5510	14.75	29.85
	110	5550	10.74	11.86
	134	5670	11.07	12.79
802.11ax-VHT20	100	5500	8.93	7.82
	116	5580	9.75	9.44
	140	5700	9.54	8.99
802.11ax-VHT40	102	5510	8.72	7.45
	110	5550	10.5	11.22
	134	5670	10.76	11.91
802.11ax-VHT80	106	5530	10.49	11.19
	122	5610	11.6	14.45
802.11ac-VHT80	106	5530	10.65	11.61
	122	5610	11.66	14.66

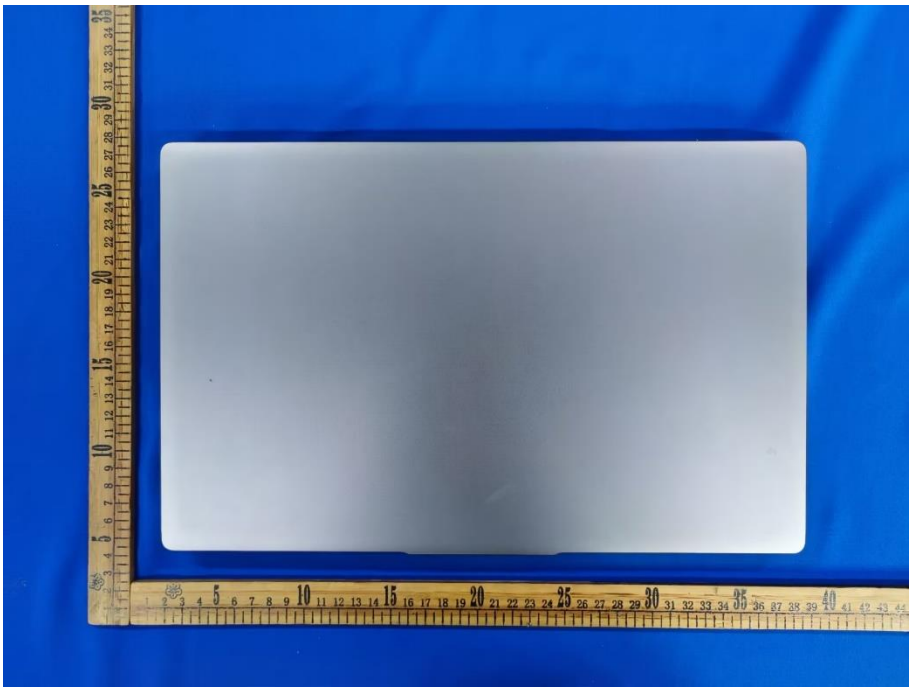
WLAN (5.8Gband)

5.8G WLAN				
Mode	Channel Number	Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11a20	149	5745	10.22	10.52
	157	5785	10.15	10.35
	165	5825	10.05	10.12
802.11n-HT20	149	5745	10.12	10.28
	157	5785	10.06	10.14
	165	5825	10.05	10.12
802.11n-HT40	151	5755	11.42	13.87
	159	5795	11.28	13.43
802.11ac-VHT20	149	5745	9.98	9.95
	157	5785	9.84	9.64
	165	5825	9.85	9.66
802.11ac-VHT40	151	5755	11.23	13.27
	159	5795	11.17	13.09
802.11ax-VHT20	149	5745	9.74	9.42
	157	5785	9.74	9.42
	165	5825	9.59	9.10
802.11ax-VHT40	151	5755	11	12.59
	159	5795	10.87	12.22
802.11ax-VHT80	155	5775	11.71	14.83
802.11ac-VHT80	155	5775	11.76	15.00

11. EUT and Test Setup Photo

11.1 EUT Photos

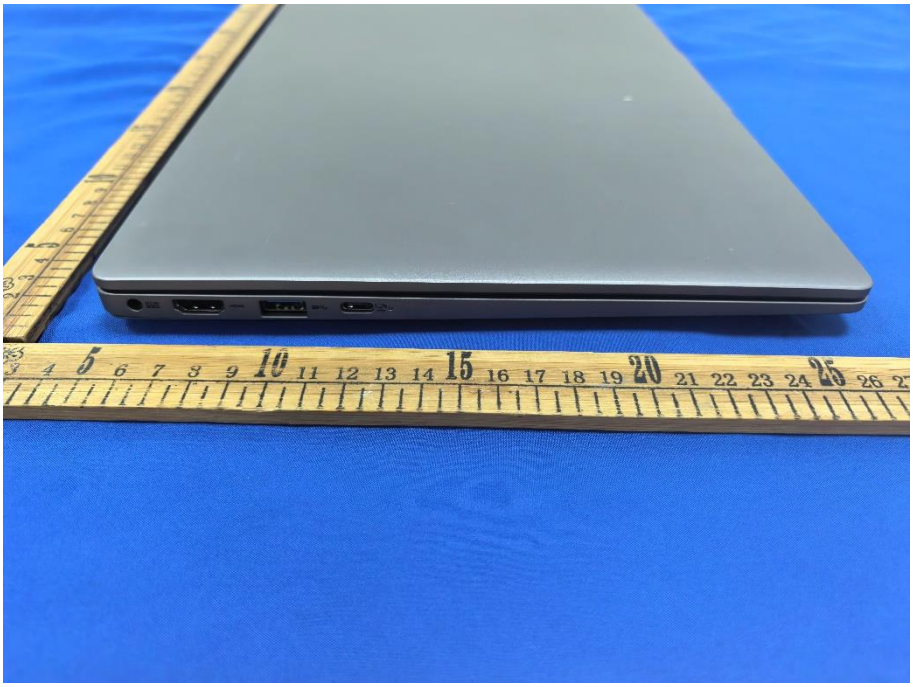
Front side



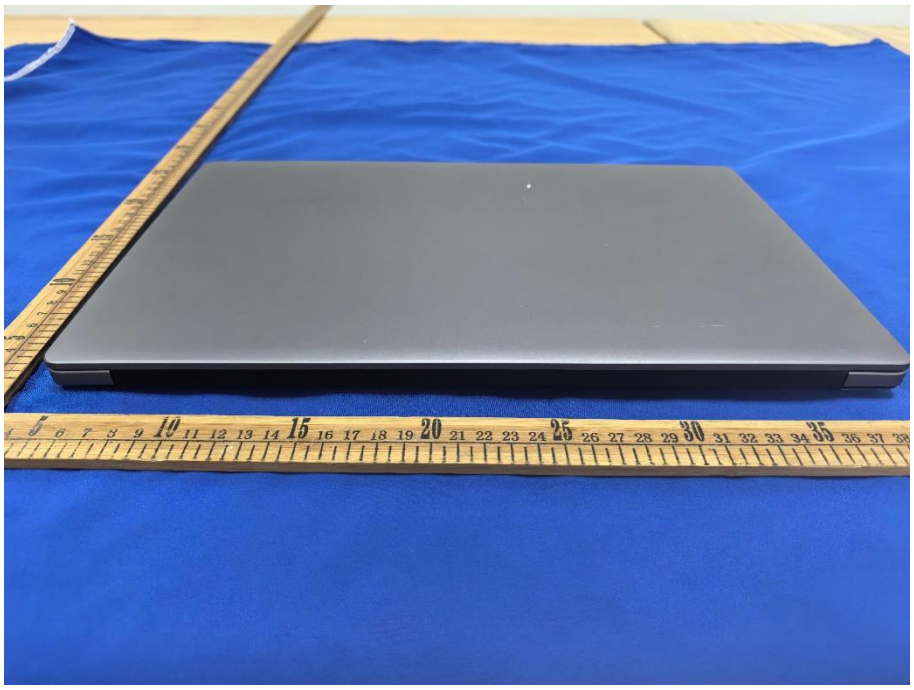
Back side

Right Edge

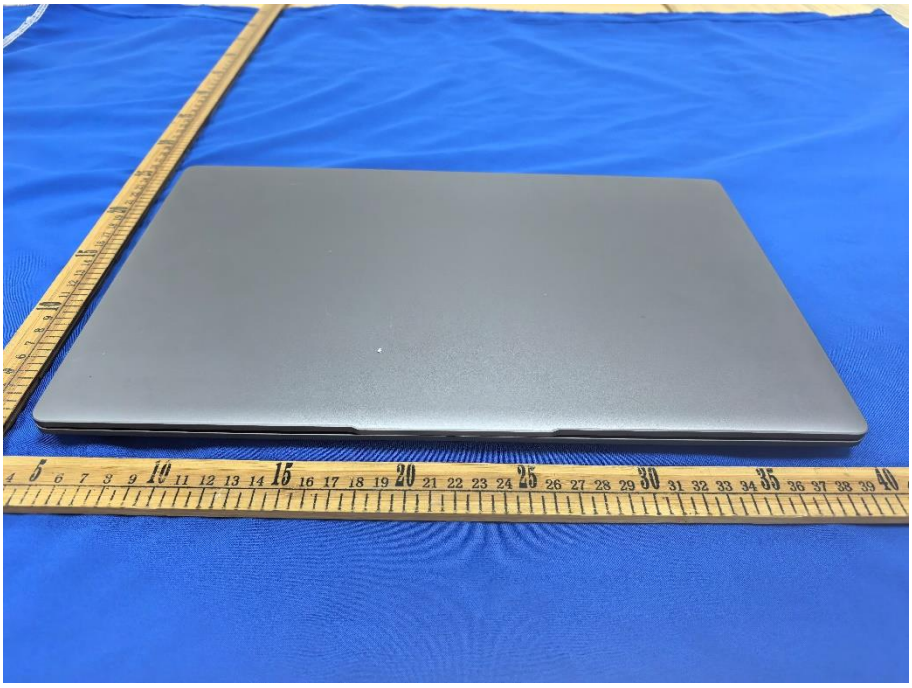
Left Edge



Top Edge



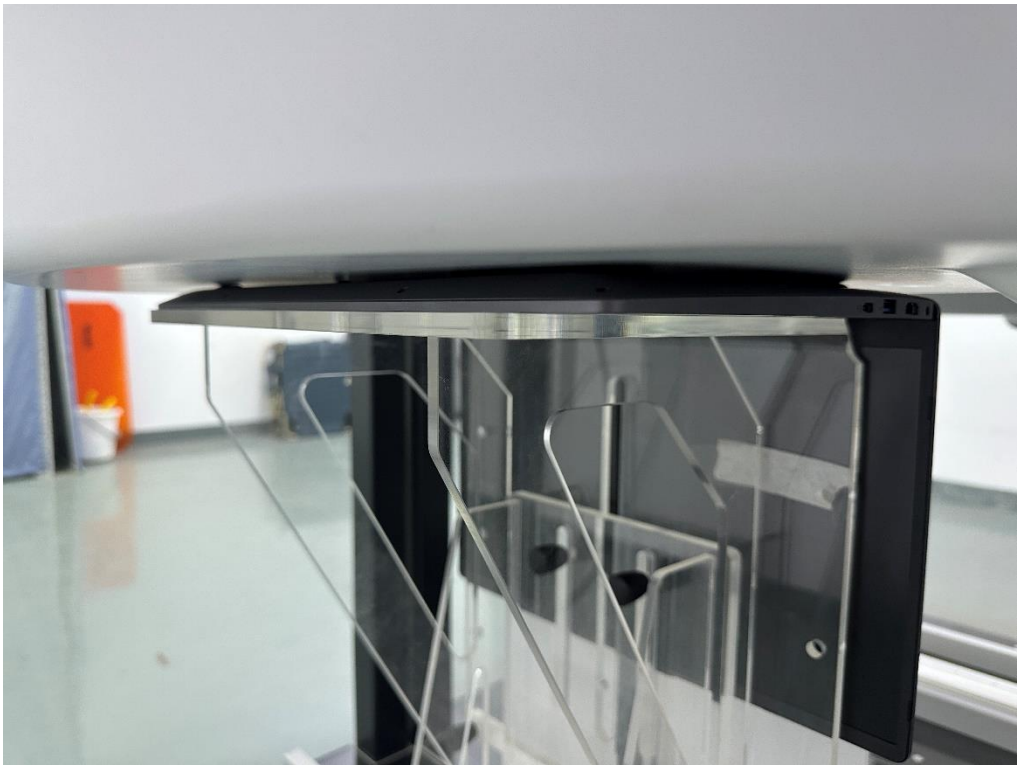
Bottom Edge



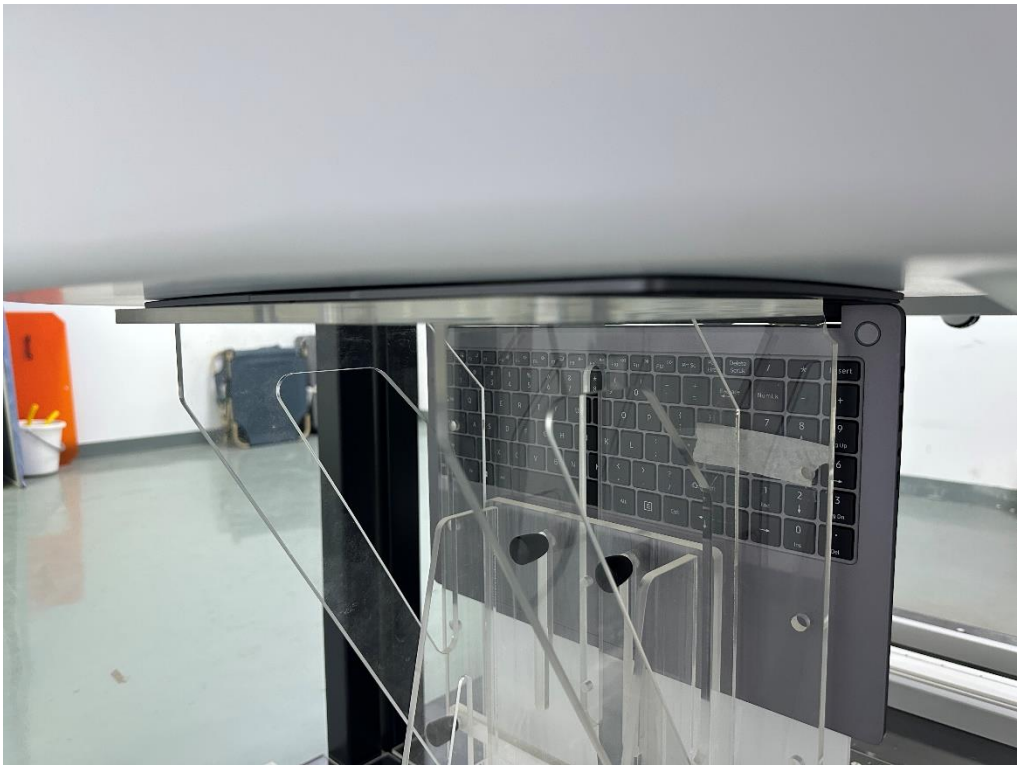
Opened Display screen at an angle of 90 degree

11.2 Setup Photos

Rear 0mm



Front 0mm



12. SAR Result Summary

12.1 Body SAR

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Max. Turn-up Power(dBm)	Meas. Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
2.4GHz WLAN	802.11b	Rear	2462	0.261	0.84	16.50	16.42	**0.266**	**1**
		Front	2462	0.102	3.60	16.50	16.42	0.104	/
5.2GHz WLAN	802.11ac40	Rear	5230	0.233	-0.69	10.00	9.80	**0.244**	**2**
		Front	5230	0.083	3.60	10.00	9.80	0.087	/
5.3GHz WLAN	802.11n40	Rear	5270	0.323	-3.37	12.00	11.94	**0.327**	**3**
		Front	5270	0.127	3.58	12.00	11.94	0.129	/
5.6GHz WLAN	802.11ac40	Rear	5510	0.427	-3.02	15.00	14.75	**0.452**	**4**
		Front	5510	0.186	-1.45	15.00	14.75	0.197	/
5.8GHz WLAN	802.11ac80	Rear	5775	0.453	-0.81	12.00	11.76	**0.479**	**5**
		Front	5775	0.192	-2.92	12.00	11.76	0.203	/

Note:

1. The test separation of all above table is 0mm.
2. Per KDB 447498 D01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. 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.
   b. Scaled SAR(W/kg) = Measured SAR(W/kg) *Tune-up Scaling Factor
3. Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was 0.933 W/Kg for Body)
4. Bluetooth and WLAN can't simultaneous transmission at the same time.

13. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
2450MHz Dipole	MVG	DIP2G450	SN 06/22 DIP2G450-645	2025.02.05	2028.02.04
5000MHz Dipole	MVG	DIP5G000	SN 06/22 DIP5G000-653	2025.02.05	2028.02.04
E-Field Probe	MVG	EPGO364	SN 04/22 EPGO364	2025.02.05	2026.02.04
Liquid Calibration Kit	MVG	OCPG 87	SN 06/22 OCPG87	2025.02.05	2026.02.04
Antenna	MVG	ANTA 73	SN 06/22 ANTA 73	N/A	N/A
Ellipsoid Phantom	MVG	ELLI 51	SN 06/22 ELLI 51	N/A	N/A
Phantom	MVG	SAM 148	SN 06/22 SAM148	N/A	N/A
Phone holder	MVG	MSH 117	SN 06/22 MSH 117	N/A	N/A
Laptop positioner	MVG	LSH 36	SN 06/22 LSH 38	N/A	N/A
Directional coupler	SHW	SHWDCP	202203280013	N/A	N/A
Network Analyzer	ZVL	R&S	116184-HC	2025.03.05	2026.03.04
Multi Meter	DMM6500	Keithley	4527252	2025.03.06	2026.03.05
Signal Generator	Keysight	N5182B	MY59100717	2025.03.05	2026.03.04
Wireless Communication Test Set	R&S	CMW500	137737	2025.03.05	2026.03.04
Power Sensor	R&S	Z11	116184	2025.03.05	2026.03.04
Electronic Temperature hygrometer	N/A	ST-W2318	N/A	2025.03.05	2026.03.04
Temperature hygrometer	N/A	TP101	N/A	2025.03.05	2026.03.04

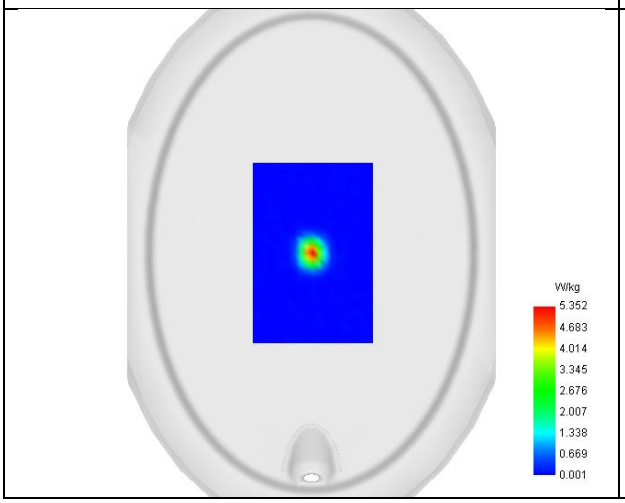
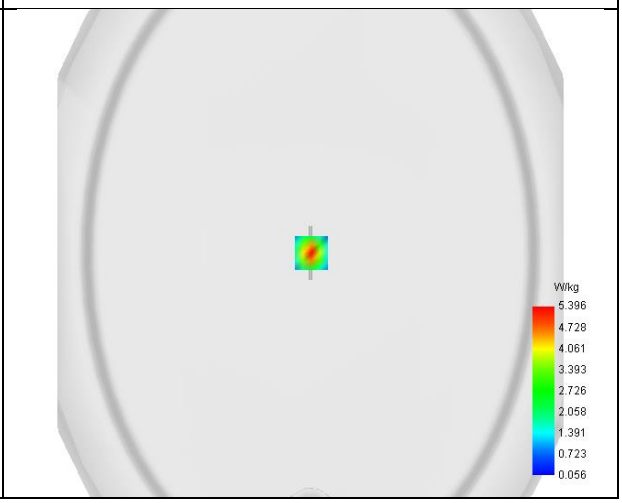
Appendix A. System Validation Plots

System Performance Check Data (2450MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2025-03-28

Experimental conditions.

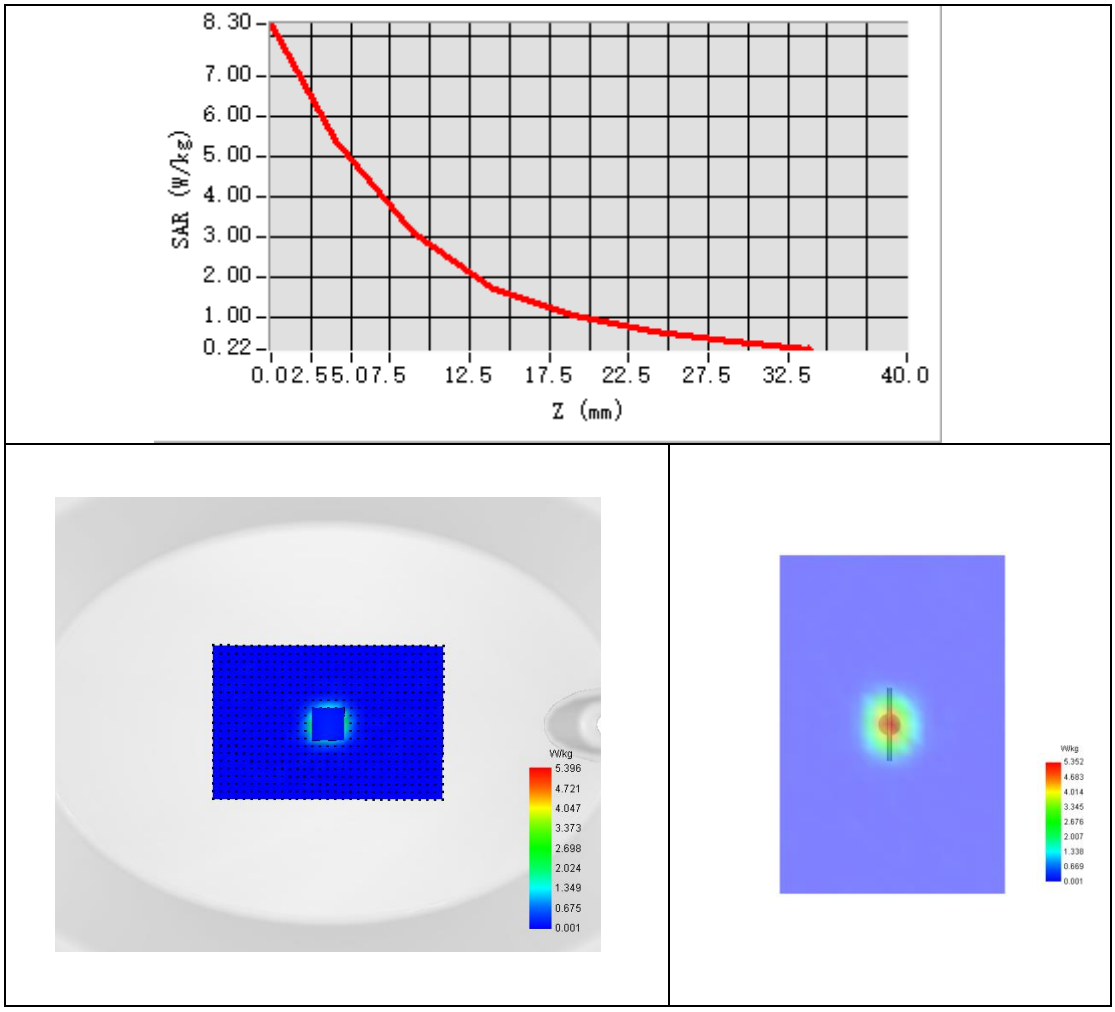
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW
Frequency (MHz)	2450.000
Relative permittivity	40.14
Conductivity (S/m)	1.78
Probe	SN 04/22 EPGO364
ConvF	2.33
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00 ; SAR Peak: 8.26 W/kg

SAR 10g (W/Kg)	2.376
SAR 1g (W/Kg)	5.418

Z Axis Scan

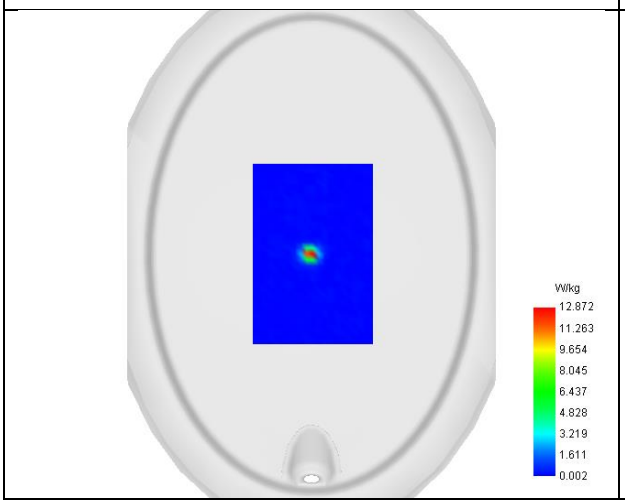
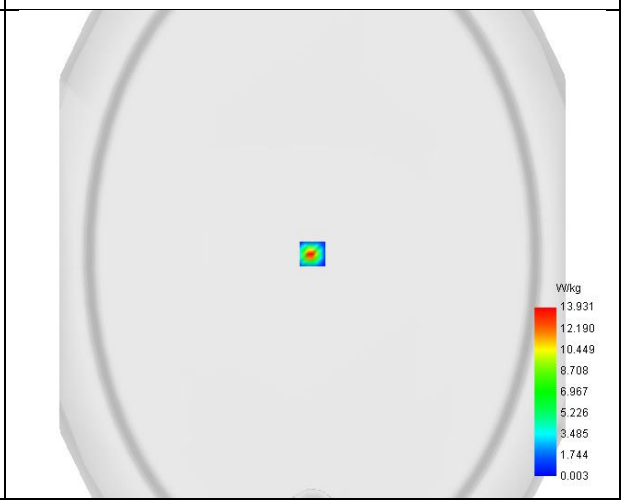

8.30
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.22
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
5.396
4.721
4.047
3.373
2.698
2.024
1.349
0.675
0.001
W/kg
5.352
4.683
4.014
3.345
2.676
2.007
1.338
0.669
0.001

System Performance Check Data (5200MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2025-03-27

Experimental conditions.

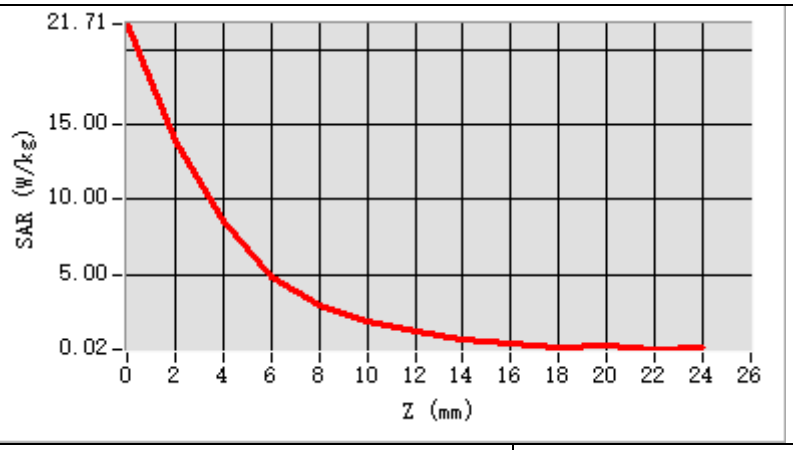
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW
Frequency (MHz)	5200.000
Relative permittivity	36.93
Conductivity (S/m)	4.62
Probe	SN 04/22 EPGO364
ConvF	1.99
Crest factor:	1:1

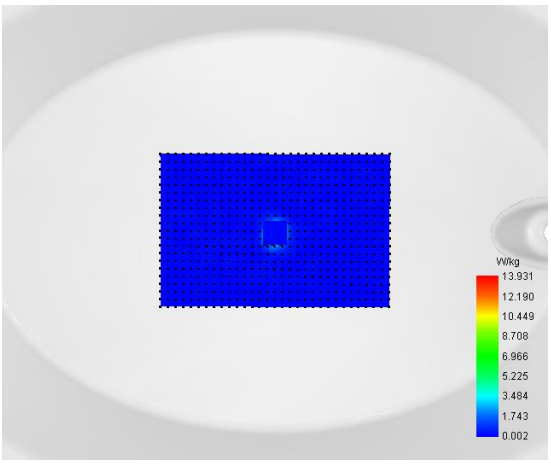
SURFACE	VOLUME SAR
	

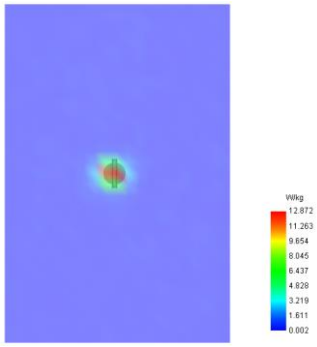
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 22.31 W/kg

SAR 10g (W/Kg)	2.310
SAR 1g (W/Kg)	8.110

Z Axis Scan


21.71
15.00
10.00
5.00
0.02
SAR (W/kg)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Z (mm)


W/kg
13.931
12.190
10.449
8.708
6.966
5.225
3.484
1.743
0.002

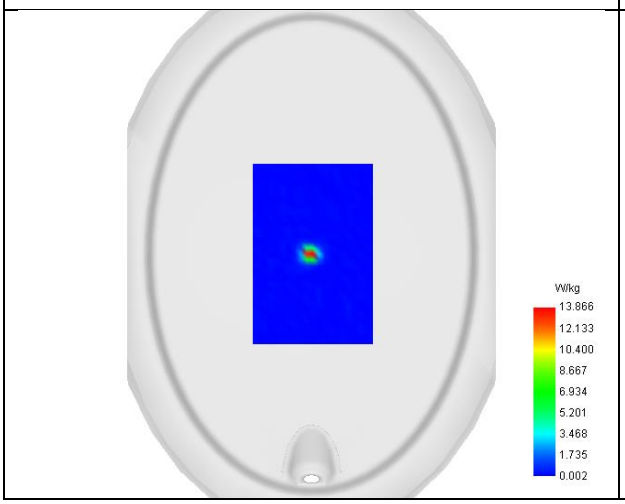
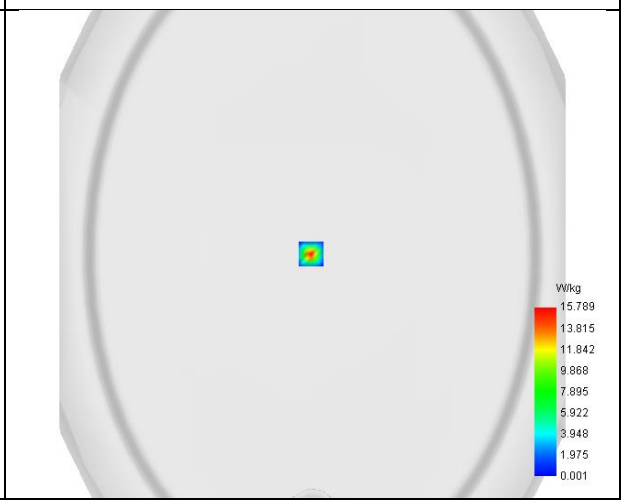

W/kg
12.872
11.263
9.654
8.045
6.437
4.828
3.219
1.611
0.002

System Performance Check Data (5400MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2025-03-27

Experimental conditions.

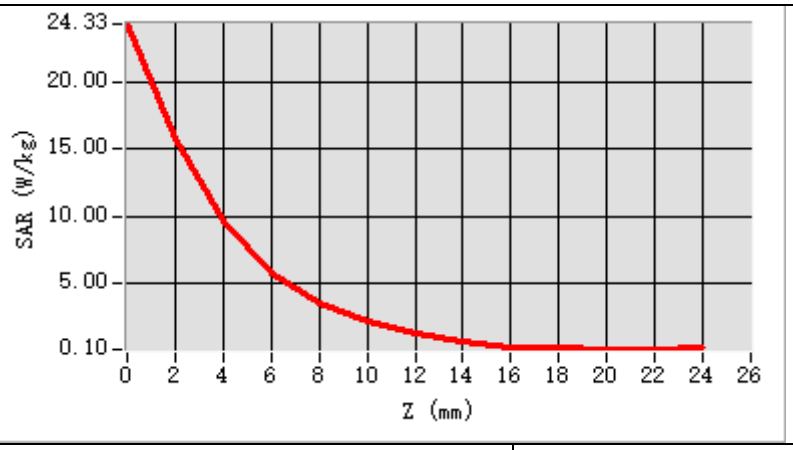
Phantom	Validation plane
Device Position	Dipole
Band	CW5400
Channels	Middle
Signal	CW
Frequency (MHz)	5400.000
Relative permittivity	36.20
Conductivity (S/m)	4.83
Probe	SN 04/22 EPGO364
ConvF	1.87
Crest factor:	1:1

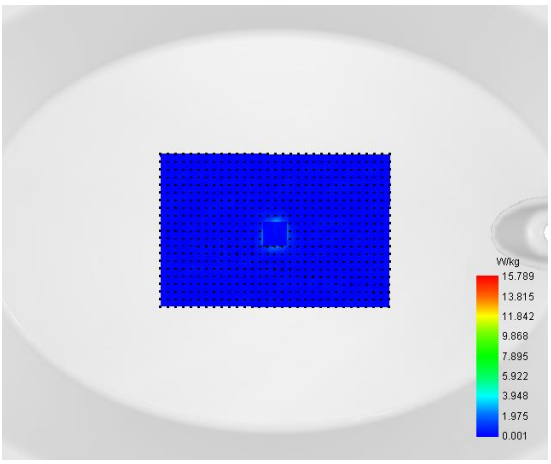
SURFACE	VOLUME SAR
	

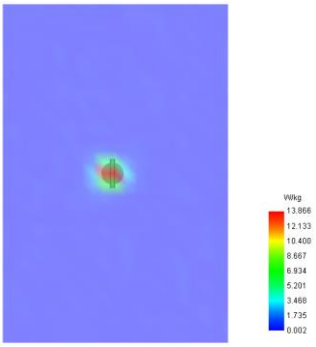
Maximum location: X=-1.00, Y=0.00 ; SAR Peak: 25.07 W/kg

SAR 10g (W/Kg)	2.439
SAR 1g (W/Kg)	8.475

Z Axis Scan


24.33
20.00
15.00
10.00
5.00
0.10
SAR (W/kg)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Z (mm)


W/kg
15.789
13.815
11.842
9.868
7.895
5.922
3.948
1.975
0.001

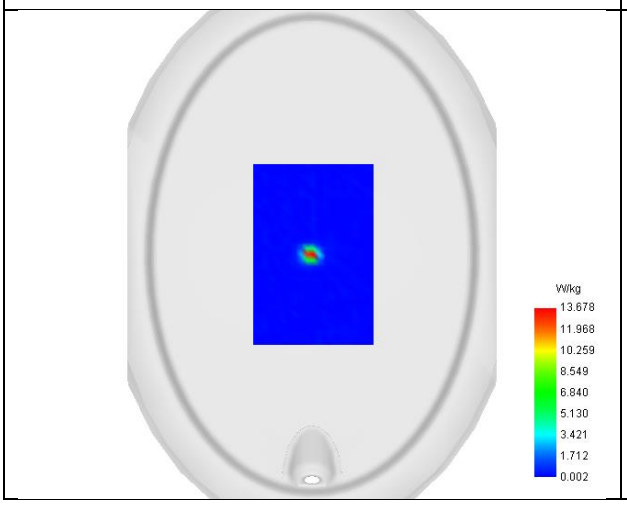
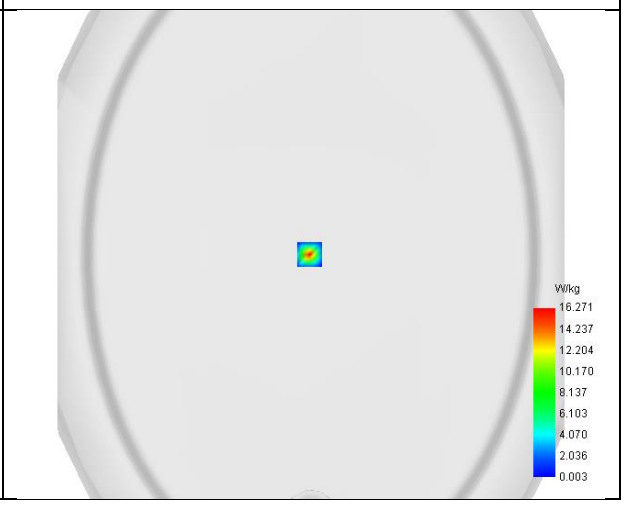


System Performance Check Data (5600MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2025-03-27

Experimental conditions.

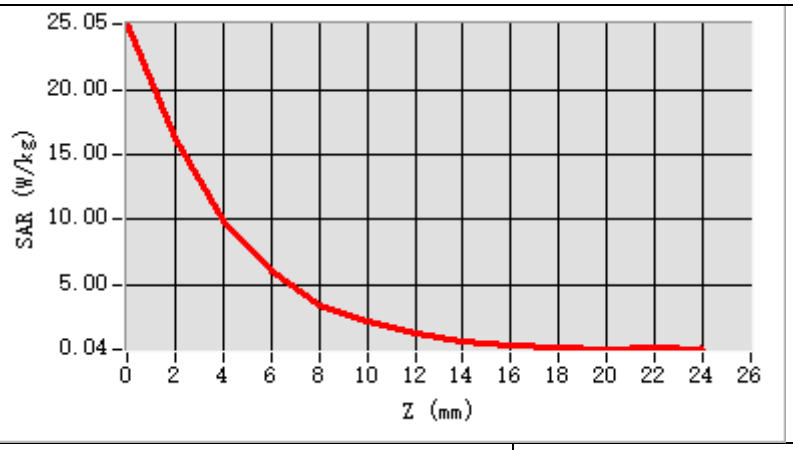
Phantom	Validation plane
Device Position	Dipole
Band	CW5600
Channels	Middle
Signal	CW
Frequency (MHz)	5600.000
Relative permittivity	37.02
Conductivity (S/m)	5.08
Probe	SN 04/22 EPGO364
ConvF	1.87
Crest factor:	1:1

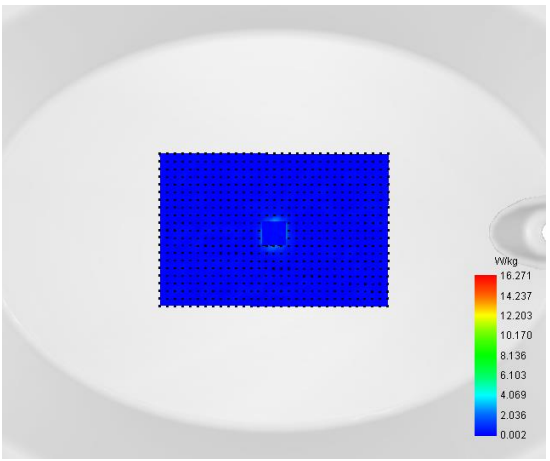
SURFACE	VOLUME SAR
	

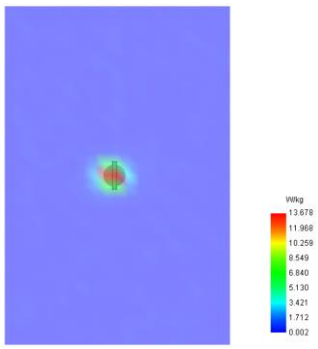
Maximum location: X=-1.00, Y=0.00 ; SAR Peak: 25.16 W/kg

SAR 10g (W/Kg)	2.367
SAR 1g (W/Kg)	8.077

Z Axis Scan


25.05
20.00
15.00
10.00
5.00
0.04
SAR (W/kg)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Z (mm)


W/kg
16.271
14.237
12.203
10.170
8.136
6.103
4.069
2.036
0.002

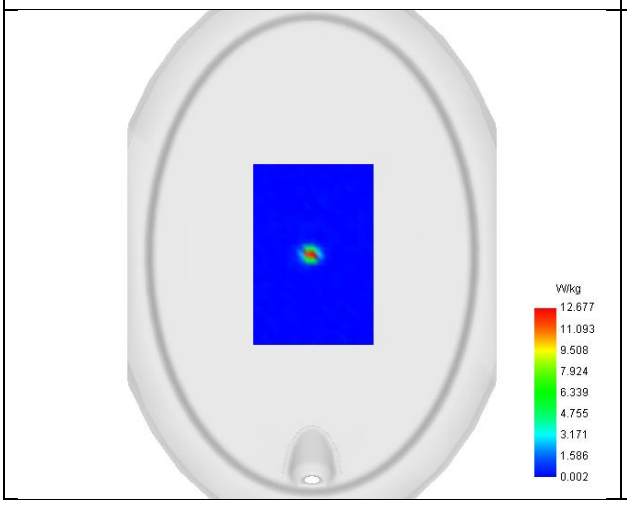
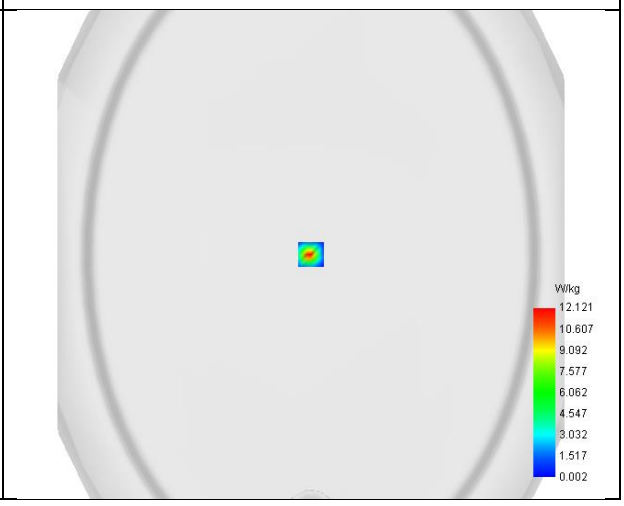

W/kg
13.678
11.968
10.259
8.549
6.840
5.130
3.421
1.712
0.002

System Performance Check Data (5800MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2025-03-27

Experimental conditions.

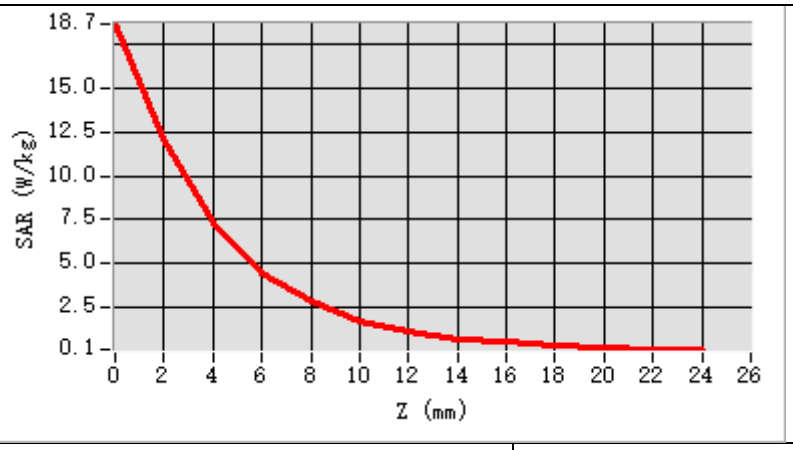
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW
Frequency (MHz)	5800.000
Relative permittivity	35.96
Conductivity (S/m)	5.23
Probe	SN 04/22 EPGO364
ConvF	1.70
Crest factor:	1:1

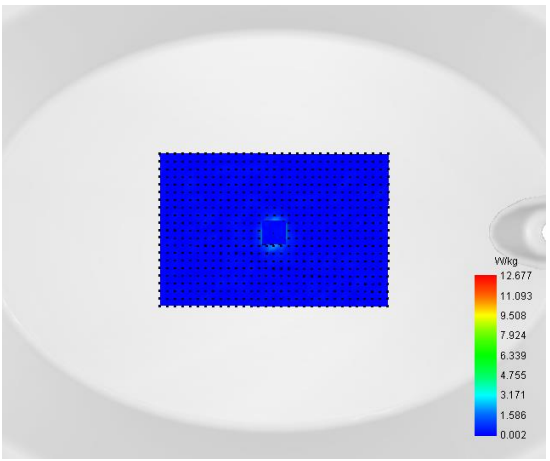
SURFACE	VOLUME SAR
	

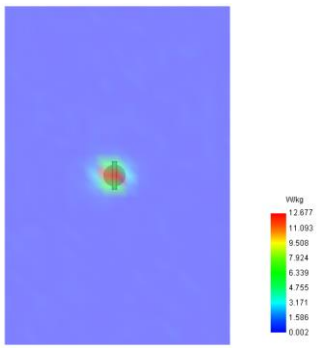
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 19.84 W/kg

SAR 10g (W/Kg)	2.371
SAR 1g (W/Kg)	8.134

Z Axis Scan


18.7
15.0
12.5
10.0
7.5
5.0
2.5
0.1
SAR (W/kg)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Z (mm)


W/kg
12.677
11.093
9.508
7.924
6.339
4.755
3.171
1.586
0.002


W/kg
12.677
11.093
9.508
7.924
6.339
4.755
3.171
1.586
0.002

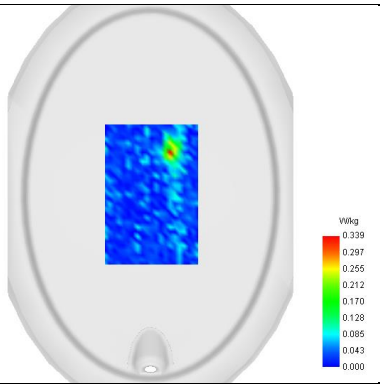
Appendix B. SAR Test Plots

Plot 1:

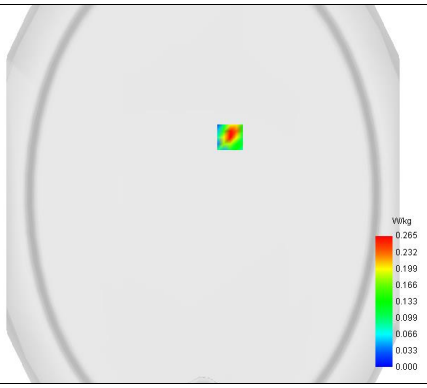
Test Date	2025-03-28
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	ELLI
Device Position	Back Side
Band	ISM
Signal	IEEE 802.11b
Frequency	2462
SAR 10g (W/Kg)	0.134
SAR 1g (W/Kg)	0.261
ConvF	2.33
Relative permittivity	40.14
Conductivity (S/m)	1.78

Maximum location: X=34.00, Y=71.00 ; SAR Peak: 0.48 W/kg

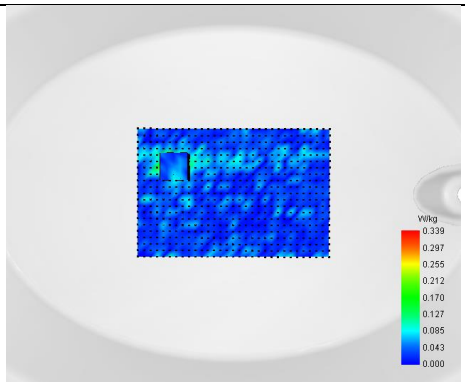
SURFACE SAR



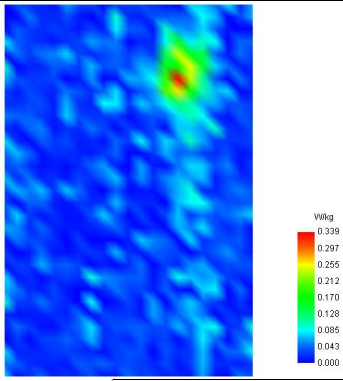
VOLUME SAR

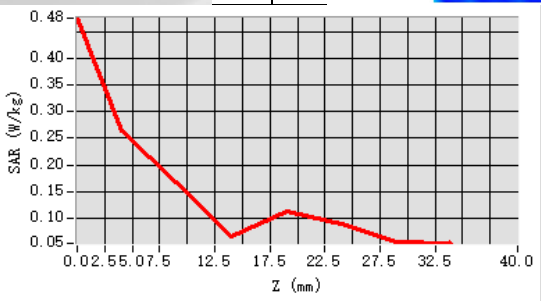


3D screen shot



Hot spot position

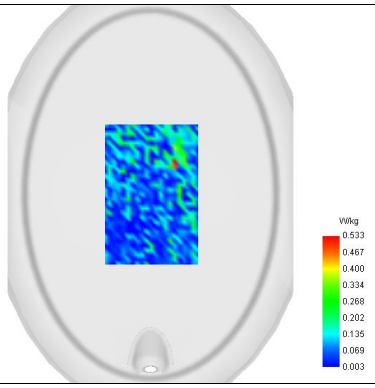
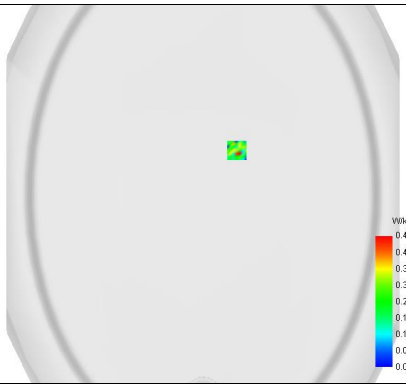
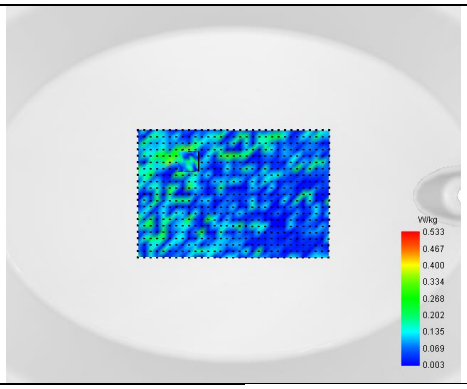
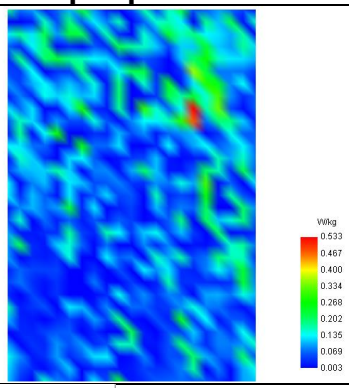
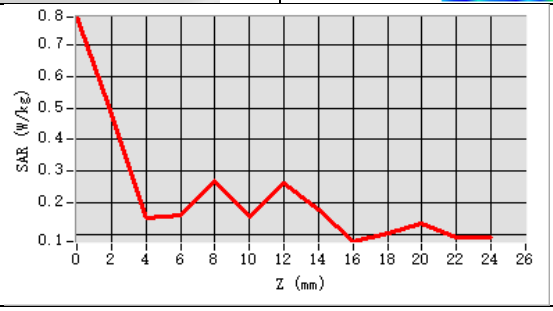




Plot 2:

Test Date	2025-03-27
Area Scan	dx=8mm dy=8mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	ELLI
Device Position	Back Side
Band	U-NII-1
Signal	IEEE 802.11ac
Frequency	5230
SAR 10g (W/Kg)	0.121
SAR 1g (W/Kg)	0.233
ConvF	1.99
Relative permittivity	36.93
Conductivity (S/m)	4.62

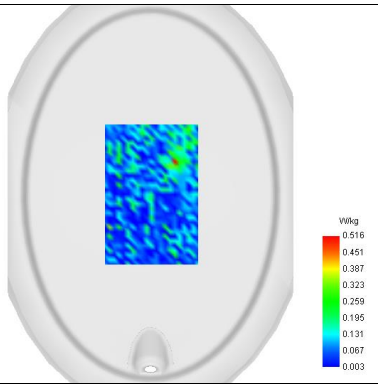
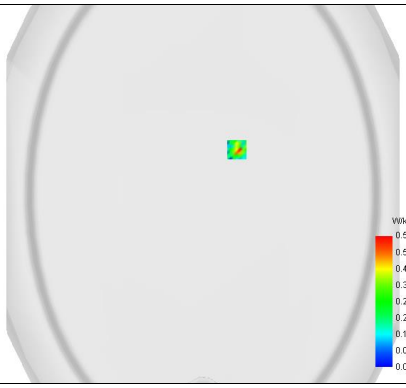
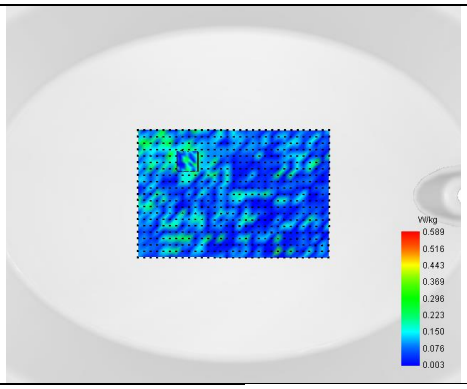
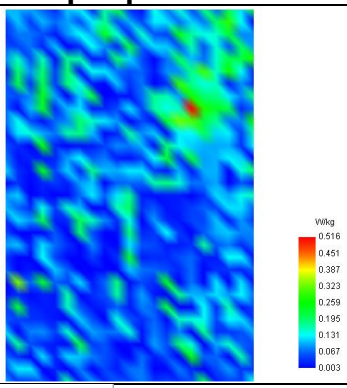
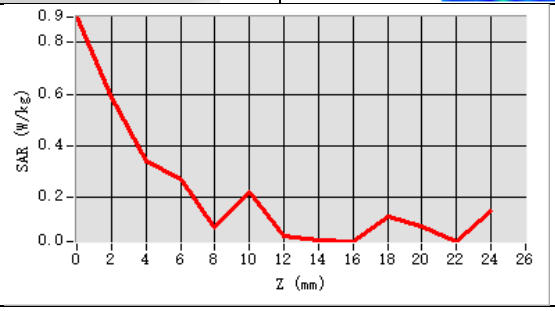
Maximum location: X=42.00, Y=55.00 ; SAR Peak: 1.14 W/kg

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 3:

Test Date	2025-03-27
Area Scan	dx=8mm dy=8mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	ELLI
Device Position	Back Side
Band	U-NII-2a
Signal	IEEE 802.11n
Frequency	5270
SAR 10g (W/Kg)	0.136
SAR 1g (W/Kg)	0.323
ConvF	1.87
Relative permittivity	36.20
Conductivity (S/m)	4.83

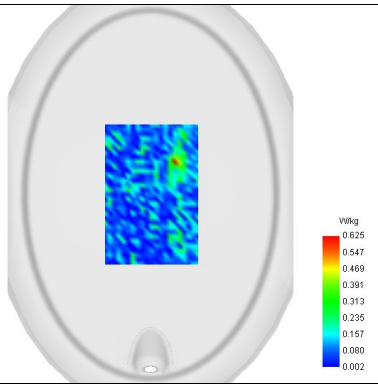
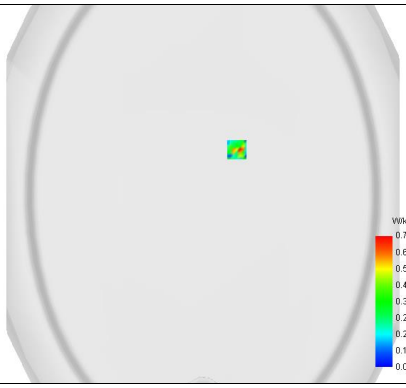
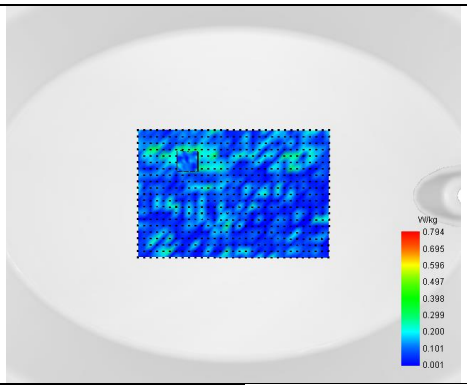
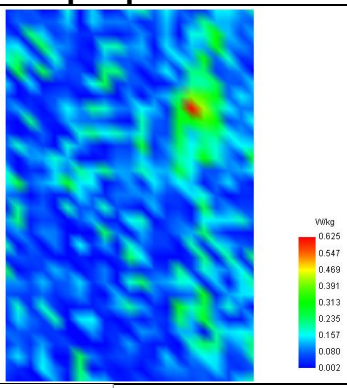
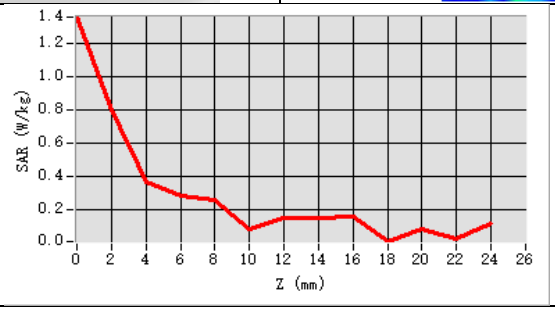
Maximum location: X=42.00, Y=56.00 ; SAR Peak: 1.68 W/kg

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 4:

Test Date	2025-03-27
Area Scan	dx=8mm dy=8mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	ELLI
Device Position	Back Side
Band	U-NII-2c
Signal	IEEE 802.11ac
Frequency	5510
SAR 10g (W/Kg)	0.157
SAR 1g (W/Kg)	0.427
ConvF	1.87
Relative permittivity	37.02
Conductivity (S/m)	5.08

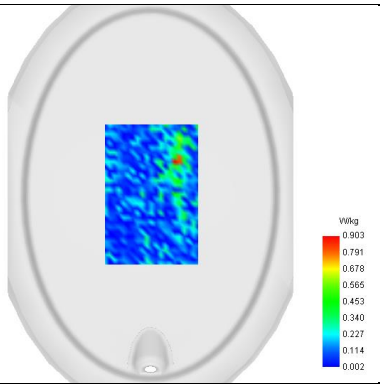
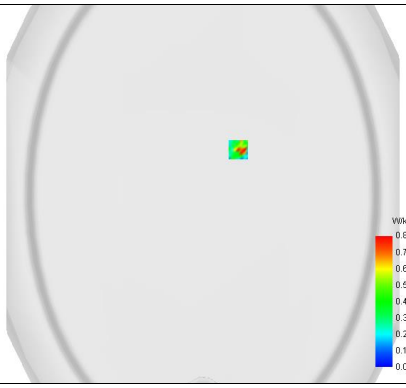
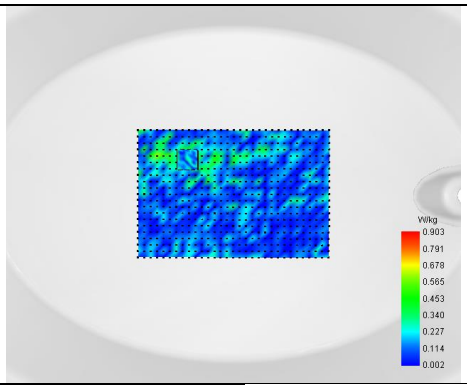
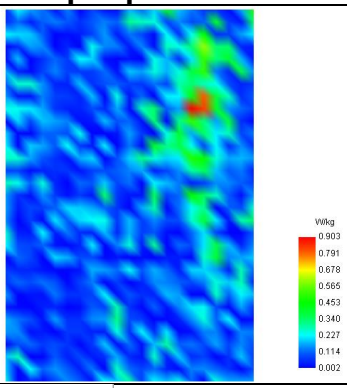
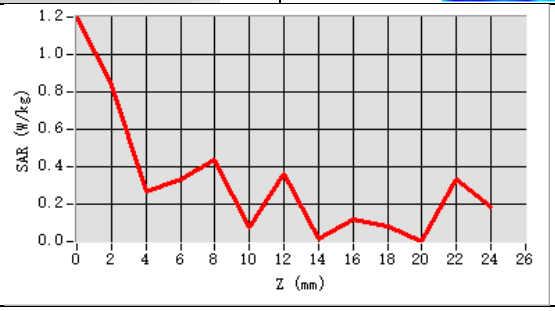
Maximum location: X=42.00, Y=56.00 ; SAR Peak: 1.99 W/kg

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 5:

Test Date	2025-03-27
Area Scan	dx=8mm dy=8mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	ELLI
Device Position	Back Side
Band	U-NII-3
Signal	IEEE 802.11ac
Frequency	5775
SAR 10g (W/Kg)	0.182
SAR 1g (W/Kg)	0.453
ConvF	1.70
Relative permittivity	35.96
Conductivity (S/m)	5.23

Maximum location: X=44.00, Y=56.00 ; SAR Peak: 1.95 W/kg

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Appendix C. Probe Calibration and Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※