FCC SAR REPORT

Applicant:	PAX Technology Limited
Address of Applicant:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong
Equipment Under Test (EUT)	
Product Name:	Integrated Smart Terminal
Model No.:	E600Mini
Trade mark	PAX
FCC ID:	V5PE600MINI
Applicable standards:	FCC 47 CFR Part 2.1093
Date of Test:	16 Dec., 2022~16 Dec., 2022
Test Result:	Maximum Reported10-g SAR (W/kg) Limb: 2.717

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*11 Jan., 2023*	*Original*

Tested by:	Zora . Huang	***Date:***	*11 Jan., 2023*
	Test Engineer		
Reviewed by:	Janet. Wei	***Date:***	*11 Jan., 2023*
	Project Engineer		

3 Contents

4 SAR Results Summary

This report was amended on FCC ID: V5PE600MINI follow FCC Class II Permissive Change. The original report: JYTSZB-R14-2100284, issued by JianYan Testing Group Shenzhen Co., Ltd. The differences between them as below: Change the shell, Change the layout of conductor, Change the voltage-level translator IC, add a conductive fabric, Change the horn position, Change the WIFI/BT/GPS antenna, so the SAR need to retest WIFI/BT.

The maximum results of Specific Absorption Rate (SAR) found during test as below:
<Highest Reported standalone SAR Summary>

Exposure Position	Frequency Band	Reported 10-g SAR(W/kg)	Equipment Class	Highest Reported 10-g SAR (W/kg)
Limb 10-g SAR (0 mm Gap)	WCDMA Band V	0.706	PCB	2.717
	WCDMA Band II	1.324		
	LTE Band 2	1.545		
	LTE Band 4	2.717		
	LTE Band 5	2.213		
	LTE Band 12&17	1.318		
	LTE Band 13	1.883		
	WLAN 2.4GHz	0.303	DTS	
	WLAN 5.2GHz	0.062	NII	
	WLAN 5.8GHz	0.076		
	Bluetooth	0.037	DSS	

<Highest Reported simultaneous SAR Summary>

Exposure Position	Frequency Band	Reported 10-g SAR (W/kg)	Equipment Class	Highest Reported Simultaneous Transmission 10-g SAR (W/kg)
Right	WWAN	2.717	PCB	2.717
	WLAN 2.4 GHz	0.000	DTS	

Note:

1. The highest simultaneous transmission is scalar summation of Reported standalone SAR per FCC KDB 690783 D01 v01r03, and scalar SAR summation of all possible simultaneous transmission scenarios are < 4.0W/kg.
2. This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (4.0 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2005, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013.
3. For FDD-LTE Band 17 is full covered by FDD-LTE Band 12, so only FDD-LTE Band 12 was tested.

5 General Information

5.1 Client Information

Applicant:	PAX Technology Limited
Address of Applicant:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong
Manufacturer:	PAX Computer Technology (Shenzhen) Co., Ltd.
Address of Manufacturer:	4/F, No.3 Building, Software Park, Second Central Science-Tech Road, High-Tech industrial Park, Shenzhen, Guangdong, P.R.C.

5.2 General Description of EUT

Product Name:	Integrated Smart Terminal			
Model No.:	E600Mini			
Category of device	Portable device			
Operation Frequency:	3G :	Band II: 1852.4~1907.6 MHz	Band V: 826.4~846.6 MHz	
	4G :	Band 2 :1850MHz~1910MHz	Band 4 :1710MHz~1755MHz	
		Band 5 :824MHz~849MHz	Band 12: 698MHz~716MHz	
		Band 13: 777MHz~787MHz	Band 17: 704MHz~716MHz	
	Wi-Fi:	2412MHz~2462MHz	5150MHz-5250MHz	
		5725MHz-5825MHz		
	Bluetooth: 2402 MHz ~ 2480 MHz			
Modulation technology:	3G:	☒RMC(QPSK)	☒HSUPA(QPSK)	☒HSDPA(QPSK,16QAM)
	4G:	☒QPSK	☒16QAM	☒64QAM
	Wi-Fi:	☒802.11b(DSSS)	☒802.11a/g/n/ac (OFDM)	
	Bluetooth:	☒BDR(GFSK)	☒ EDR(π/4-DQPSK, 8DPSK)	☒LE(GFSK)
Antenna Type:	Internal Antenna			
Antenna Gain:	WCDMA Band V: -2.20 dBi ;WCDMA Band II: 1.4 dBi LTE Band 2: 1.20 dBi ; LTE Band 4: 1.10 dBi ; LTE Band 5: -2.20 dBi ; LTE Band 12: -3.50 dBi ; LTE Band 13: -3.10 dBi ; LTE Band 17: -3.50 dBi ; 2.4G Wi-Fi: 1.50 dBi; 5G Wi-Fi: 1.50 dBi Bluetooth: 1.50dBi;			
Dimensions (L*W*H):	238mm (L)× 102mm (W)× 78mm (H)			
Accessories information:	Adapter: Model: TPD-71A120150UU01 Input: 100-240V, 50/60Hz, 0.6A Output: DC 3.6-6.0V, 3.0A, 18.0W DC 6.0-9.0V, 2.0A, 18.0W DC 9.0-12.0V, 1.5A, 18.0W	Battery: Rechargeable Li-ion Battery 3.8V/6100mAh		

5.3 Maximum RF Output Power

Mode	Average Power (dBm)	
	WCDMA Band V	WCDMA Band II
AMR 12.2 kbps	25.14	24.39
RMC 12.2 kbps	25.23	24.38
HSDPA Sub-test 1	21.53	22.99
HSDPA Sub-test 2	21.23	22.76
HSDPA Sub-test 3	20.85	22.36
HSDPA Sub-test 4	21.09	22.39
HSUPA Sub-test 1	19.54	21.98
HSUPA Sub-test 2	19.74	22.12
HSUPA Sub-test 3	19.76	22.06
HSUPA Sub-test 4	19.68	22.10
HSUPA Sub-test 5	21.43	22.95

Mode	Average Power (dBm)					
	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 12	LTE Band 13	LTE Band 17
BW/1.4 MHz	22.48	22.98	23.05	23.01	/	/
BW/3.0 MHz	22.46	22.96	23.10	23.03	/	/
BW/5.0 MHz	22.47	23.11	23.19	23.01	23.05	23.10
BW/10 MHz	22.53	22.93	23.12	22.85	23.00	22.83
BW/15 MHz	22.50	22.87	/	/	/	/
BW/20 MHz	22.65	22.95	/	/	/	/

WLAN 2.4 GHz Band Average Power (dBm)				
Mode/Band	b	g	n (HT-20)	n (HT-40)
WLAN 2.4GHz	16.93	17.58	17.43	17.51

WLAN 5.2 GHz Band Average Power (dBm)						
Mode/Band	a	ac 20	ac 40	ac 80	n 20	n 40
WLAN 5.2GHz	8.23	8.49	7.32	6.22	8.54	7.26

WLAN 5.8 GHz Band Average Power (dBm)						
Mode/Band	a	ac 20	ac 40	ac 80	n 20	n 40
WLAN 5.8GHz	8.93	8.72	9.00	8.60	8.86	9.05

Bluetooth Average Power (dBm)							
Mode/Band	1 Mbps (GFSK)	2 Mbps (π/4DQPSK)	3 Mbps (8DPSK)	BLE 1M	BLE 2M	BLE S=2	BLE S=8
Bluetooth	9.09	8.68	9.10	5.82	5.58	5.79	5.62

Please refer to FCC ID: V5PE600MINI, report No. JYTSZB-R14-2100284.

5.4 Environment of Test Site

Temperature:	18°C ~25°C
Humidity:	35%~75% RH
Atmospheric Pressure:	1010 mbar

5.5 Test Sample Plan

Sample Number	Used for Test Items
2#	SAR
***Remark**: JianYan Testing Group Shenzhen Co., Ltd. is only responsible for the test project data of the above samples, and will keep the above samples for a month.*	

5.6 Test Location

JianYan Testing Group Shenzhen Co., Ltd.
No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community,Xinqiao Street, Bao'an District, Shenzhen, Guangdong,People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://jyt.lets.com

6 Introduction

6.1 Introduction

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

6.2 SAR Definition

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

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

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

SAR measurement can be either related to the temperature elevation in tissue by

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

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or related to theelectrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

7 RF Exposure Limits

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurredby persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). Ingeneral, occupational/controlled exposure limits are applicable to situations in which persons are exposedas a consequence of their employment, who have been made fully aware of the potential for exposureand can exercise control over their exposure. This exposure category is also applicable when theexposure is of a transient nature due to incidental passage through a location where the exposure levelsmay be higher than the general population/uncontrolled limits, but the exposed person is fully aware ofthe potential for exposure and can exercise control over his or her exposure by leaving the area or bysome other appropriate means.

7.3 RF Exposure Limits

SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (W/kg) or (mW/g)
SPATIAL PEAK SAR Brain	1.6	8.0
SPATIAL AVERAGE SAR Whole Body	0.08	0.4
SPATIAL PEAK SAR Hands, Feet, Ankles, Wrists	4.0	20

Note:

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube)and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of acube) and over the appropriate averaging time.

8 SAR Measurement System

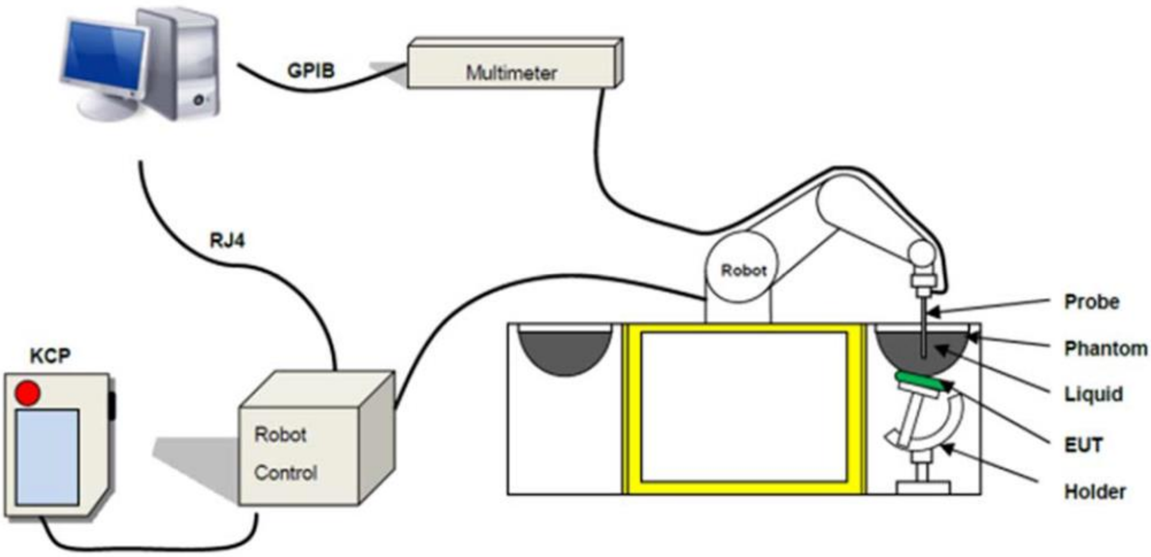


Fig.8.1 MVGCOMOSAR System Configurations

Thesemeasurements were performed with the automated near-field scanning system COMOSAR from MVG. The system is based on a high precision robot (working range: 850 mm), which positions the probes with a positional repeatability of better than ± 0.02 mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit.

The SAR measurements were conducted with dosimetric probe (manufactured by MVG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure described in SAR standard with accuracy of better than ±10%.The spherical isotropy was evaluated with the procedure described in SAR standard and found to be better than ±0.25 dB. The phantom used was the SAM Phantom as described in FCC supplement C, IEEE P1528.

The MVGCOMOSAR system for performance compliance tests is illustrated above graphically. This system consists of thefollowing items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

8.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by MVG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

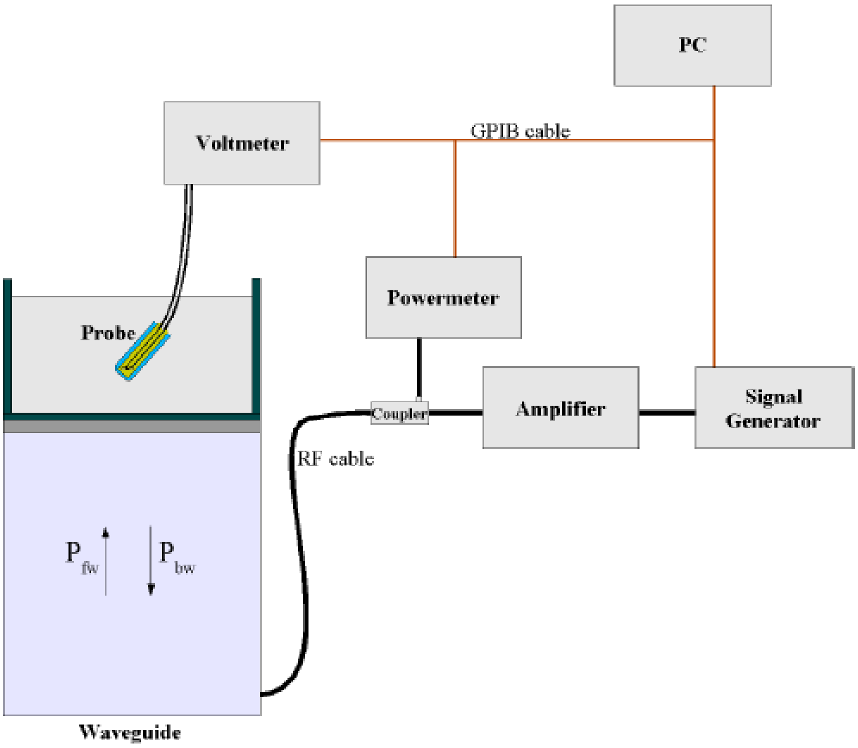
➢ **E-Field Probe Specification**

Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Model	SSE2
Frequency Range	150 MHz to 6 GHz
Dynamic Range	0.01W/kg to 100W/kg
Probe linearity	<0.25dB
Dimensions	Overall length: 330 mm Tip diameter: 2.5 mm Distance between dipoles / probe Limb: 1 mm

Fig. 8.2 Photo of E-Field Probe

➢ **E-Field Probe Calibration**

Probe calibration is realized, in compliance with EN/IEC 62209-1/-2 and IEEE 1528 std, with CALISAR, MVG proprietary calibration system. The calibration is performed with the technique using reference waveguide.



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

Where :

Pfw	=	Forward Power
Pbw	=	Backward Power
a and b	=	Waveguide Dimensions
ı	=	Skin Depth

Keithley configuration

Rate=Medium; Filter=ON; RDGS=10; FILTER TYPE=MOVING AVERAGE; RANGE AUTO

After each calibration, a SAR measurement performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

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

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

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

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

Where the DCP is the dipole compression point in mV

8.2 Robot

The COMOSAR system uses the high precision robots from KUKA. For the 6-axis controller system, the robot controller version (KUKA-KRC2sr) from KUKA is used. The KUKA robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; nobelt drives)
- Jerk-free straight movements
- Low ELF interference (motor control fields shielded via the closed metallic constructionshields)

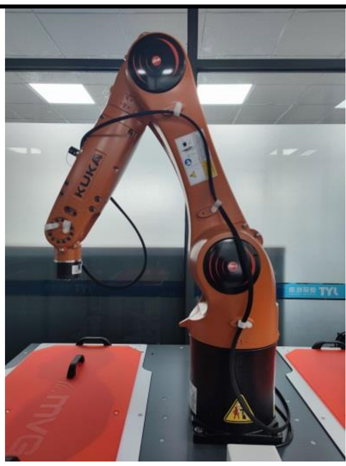


Fig. 8.4 Photo of Robot

8.3 Phantom

<SAM Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume Dimensions	Approx. 27 liters Length: 1000mm; Width: 500mm; Height: 200mm
Material	Fiberglass based
Relative permittivity	3-4
Loss tangent	0.02
Measurement Areas	Left Head, Right Head, Flat phantom

Fig. 8.7Photo of SAMPhantom

The phantom developed by MVG is produced in accordance with the specified in the standards. It has beendesigned to fit the COMOSAR phantom tables and is delivered with a plastic cover to prevent liquid evaporation.

8.4 Device Holder

The positioning system is made of an extremely stable material, which ensures easy handling andreproducible positioning. It also allows correct positioning of the dipoles referenced by the IEEE, ANSIand IEC.

<Device Holder for SAM Phantom>

Model	Handset Positioning System
Material properties	The positioning system is made ofPETP. This material offers a low permittivity of 3.2 and lowloss, with a loss tangent of 0.005 to minimize the influenceof the DUT on measurement results.
Mechanical properties	The positioning system developedby MVG allows a positioning resolution better than1 mm. The system is fixed on a bottom rail “x axis” sothat the positioning system can be quickly moved from theright to the left part of the phantom. In addition, it can be moved on a perpendicular “y axis”and the height can be adapted. The system is also composedof three rotation points for accurate positioning ofthe device’s acoustical output.
Accuracy and precision	A curved rail on the top partallows the fast switch from the cheek to the tilt position.The required 15° angle for the tilt position can be easilychecked thanks to a printed scale on the curved rail witha tolerance of ± 1°

Fig. 8.9 Photo of Device Holder

8.5 Test Equipment List

Manufacturer	Equipment Description	Model	Management Number	Cal. Information	
				Last Cal.	Due Date
MVG	COMOSAR DOSIMETRIC E FIELD PROBE	SSE2	WXJ076	06.30.2022	06.29.2023
MVG	COMOSAR 2450 MHz REFERENCE DIPOLE	SID2450	WXJ076-12	01.14.2021	01.13.2024
MVG	COMOSAR 5200-5800 MHz REFERENCE DIPOLE	SID5000	WXJ076-21	01.14.2021	01.13.2024
KEITHLEY	DIGIT MULTIMETER	DMM6500	WXJ076-1	10.17.2022	10.16.2025
MVG	MVG Measurement Software	OpenSAR	Version: V5_01_09	N.C.R	N.C.R
MVG	COMOSAR IEEE SAM PHANTOM	N/A	WXG009-2	N.C.R	N.C.R
MVG	COMOSAR IEEE SAM PHANTOM	N/A	WXG009-3	N.C.R	N.C.R
MVG	MOBILE PHONE POSITIONNING SYSTEM	N/A	WXG009-4	N.C.R	N.C.R
KUKA	Robot	KR 6 R900 sixx	WXG009-1	N.C.R	N.C.R
KEYSIGHT	Network Analyzer	E5071C	WXJ091	03.30.2022	03.29.2023
KEYSIGHT	EPM Series Power Meter	N1914A	WXJ075	06.29.2022	06.28.2023
KEYSIGHT	E-Series Power Sensor	E9300H	WXJ075-1	06.29.2022	06.28.2023
KEYSIGHT	E-Series Power Sensor	E9300H	WXJ075-2	06.29.2022	06.28.2023
KEYSIGHT	Signal Generator	N5173B	WXJ006-3	06.29.2022	06.28.2023
Huber Suhner	RF Cable	SUCOFLEX	WXG008-13	See Note 3	
Huber Suhner	RF Cable	SUCOFLEX	WXG008-14	See Note 3	
Huber Suhner	RF Cable	SUCOFLEX	WXG008-15	See Note 3	
Weinschel	Attenuator	23-3-34	WXG008-16	See Note 3	
Anritsu	Directional Coupler	MP654A	WXG008-17	See Note 3	
MVG	LIMESAR DIELECTRIC PROBE	SCLMP	WXG009-5	See Note 4	
TXC	Broadband Amplifier	BBA018000	WXG008-11	See Note 5	

Note:

1. The calibration certificate of MVG can be referred to appendix C of this report.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. Thedipoles are also not physically damaged, or repaired during the interval.
3. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the networkanalyzer and compensated during system check.
4. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in purewater) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure andcalibration kit are provided by MVG.
5. In system check we need to monitor the level on the spectrum analyzer, and adjust the power amplifier level to haveprecise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not criticallyrequired for correct measurement; the spectrumanalyzer is critical and we do have calibration for it
6. Attenuator insertion loss is calibrated by the network Analyzer, which the calibration is valid, before systemcheck.
7. N.C.R means No Calibration Requirement.

9 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 9.1, for body SAR testing, the liquid height from the center of the flat phantom to liquid top surface is larger than 15 cm, which is shown in Fig. 9.2.

Fig. 9.1 Photo of Liquid Height for Head SAR (depth>15cm)

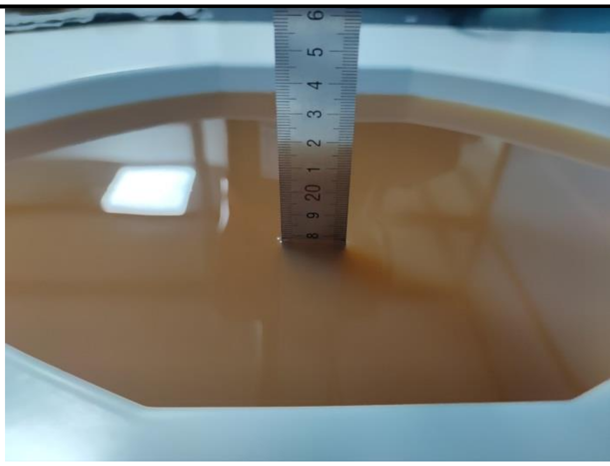


Fig. 9.2 Photo of Liquid Height for Body SAR (depth>15cm)

The relative permittivity and conductivity of the tissue material should be within±5% of the values given in the table below recommended by the FCC OET 65supplement C and RSS 102 Issue 5.

Target Frequency	Head	
(MHz)	εr	σ(S/m)
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
915	41.5	0.98
1450	40.5	1.20
1610	40.3	1.29
1800-2000	40.0	1.40
2450	39.2	1.80
3000	38.5	2.40
5800	35.3	5.27

(εr = relative permittivity, σ = conductivity and ρ = 1000 kg/m

The dielectric parameters of liquids were verified prior to the SAR evaluation using a MVG Liquid measurement Kit and an Agilent Network Analyzer.
The following table shows the measuring results for simulating liquid.

Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (εr)	Conductivity Target(σ)	Permittivity Target(εr)	Delta (σ)%	Delta (εr)%	Limit (%)	Date (mm/dd/yy)
2450	22.3	1.82	39.57	1.80	39.20	1.11	0.94	±5	12.16.2022
5200	22.3	4.69	36.38	4.66	36.00	0.64	1.06	±5	12.16.2022
5800	22.3	5.37	35.96	5.27	35.30	1.90	1.87	±5	12.16.2022

10 SAR System Verification

Each ComoSARsystemis equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the OpenSAR software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

- **Purpose of System Performance check**

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

- **System Setup**

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

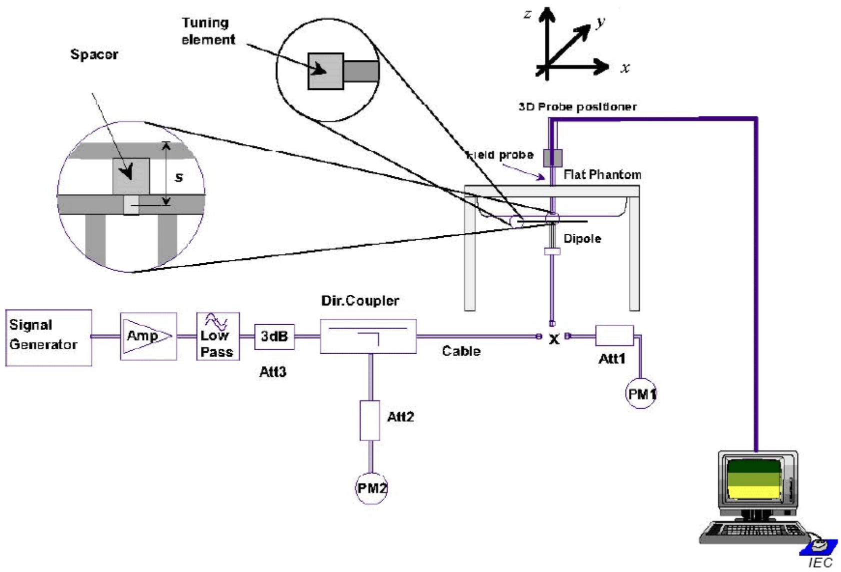


Fig.10.1 System Verification Setup Diagram

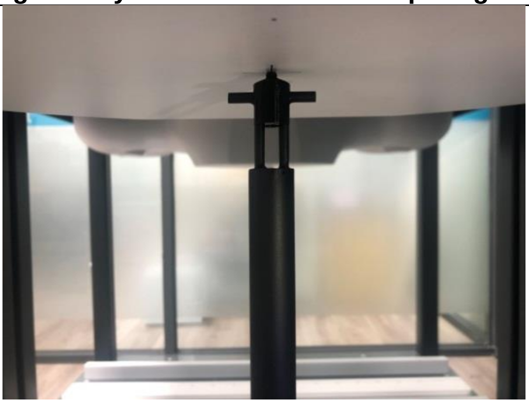


Fig.10.2 Photo of Dipole setup

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- **System Verification Results**
  Comparing to the original SAR value provided by MVG, the verification data should be within its specification of 10%. The table as below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix C of this report.

Date (mm/dd/yy)	Frequency (MHz)	Power fed onto dipole (mW)	Measured 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Target 10g SAR (W/kg)	Deviation (%)
12.16.2022	2450	40	0.987	24.68	23.68	4.20
12.16.2022	5200	40	0.953	23.83	22.60	5.42
12.16.2022	5800	40	0.966	24.15	22.93	5.32

11 EUT Testing Position

This EUT was tested in two different positions. They are Front/Left of the EUT with phantom 0 mm gap, as illustrated below, please refer to Appendix B for the test setup photos.

11.1 Limb Configurations

- To position the device parallel to the phantom surface with either keypad up or down.
- To adjust the device parallel to the flat phantom.
- To adjust the distance between the device surface and the flat phantom to 0 mm or holster surface and the flat phantom to 0 mm.

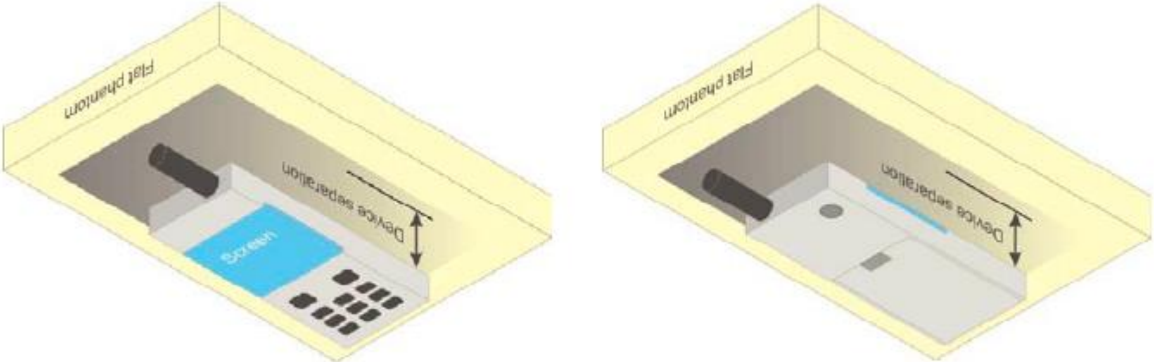


Fig.11.1 Illustration for Limb Position

12 Measurement Procedures

The measurement procedures are as below:

<Conducted power measurement>

- For WWAN power measurement, use base station simulator to configure EUT WWAN transition in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- Read the WWAN RF power level from the base station simulator.
- For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band.
- Connect EUT RF port through RF cable to the power meter or spectrum analyzer, and measure WLAN/BT output power.

<Conducted power measurement>

- Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- Place the EUT in positions as Appendix B demonstrates.
- Set scan area, grid size and other setting on the OpenSAR software.
- Measure SAR results for the highest power channel on each testing position.
- Find out the largest SAR result on these testing positions of each band.
- Measure SAR results for other channels in worst SAR testing position if the Reported SAR or highest power channel is larger than 0.8 W/kg.

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

- Power reference measurement
- Area scan
- Zoom scan
- Power drift measurement

12.1 Spatial Peak SAR Evaluation

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

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

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

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

12.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurement are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

12.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below.

<table>
<tr><th colspan="3"></th><th>$\leq$ 3 GHz</th><th>> 3 GHz</th></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 ± 1 mm</td><td>½·δ·ln(2) ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>$\leq$ 2 GHz: $\leq$ 15 mm
2 – 3 GHz: $\leq$ 12 mm</td><td>3 – 4 GHz: $\leq$ 12 mm
4 – 6 GHz: $\leq$ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>$\leq$ 2 GHz: $\leq$ 8 mm
2 – 3 GHz: $\leq$ 5 mm*</td><td>3 – 4 GHz: $\leq$ 5 mm*
4 – 6 GHz: $\leq$ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>$\leq$ 5 mm</td><td>3 – 4 GHz: $\leq$ 4 mm
4 – 5 GHz: $\leq$ 3 mm
5 – 6 GHz: $\leq$ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>$\leq$ 4 mm</td><td>3 – 4 GHz: $\leq$ 3 mm
4 – 5 GHz: $\leq$ 2.5 mm
5 – 6 GHz: $\leq$ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>$\geq$ 30 mm</td><td>3 – 4 GHz: $\geq$ 28 mm
4 – 5 GHz: $\geq$ 25 mm
5 – 6 GHz: $\geq$ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
* When zoom scan is required and the <u>*reported*</u> SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is $\leq$ 1.4 W/kg, $\leq$ 8 mm, $\leq$ 7 mm and $\leq$ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

12.4 Volume Scan Procedures

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

12.5 SAR Averaged Methods

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

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

12.6 Power Drift Monitoring

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

13 Conducted RF Output Power

Please refer to FCC ID: V5PE600MINI, report No. JYTSZB-R14-2100284.

14 Exposure Positions Consideration

14.1 EUT Antenna Locations

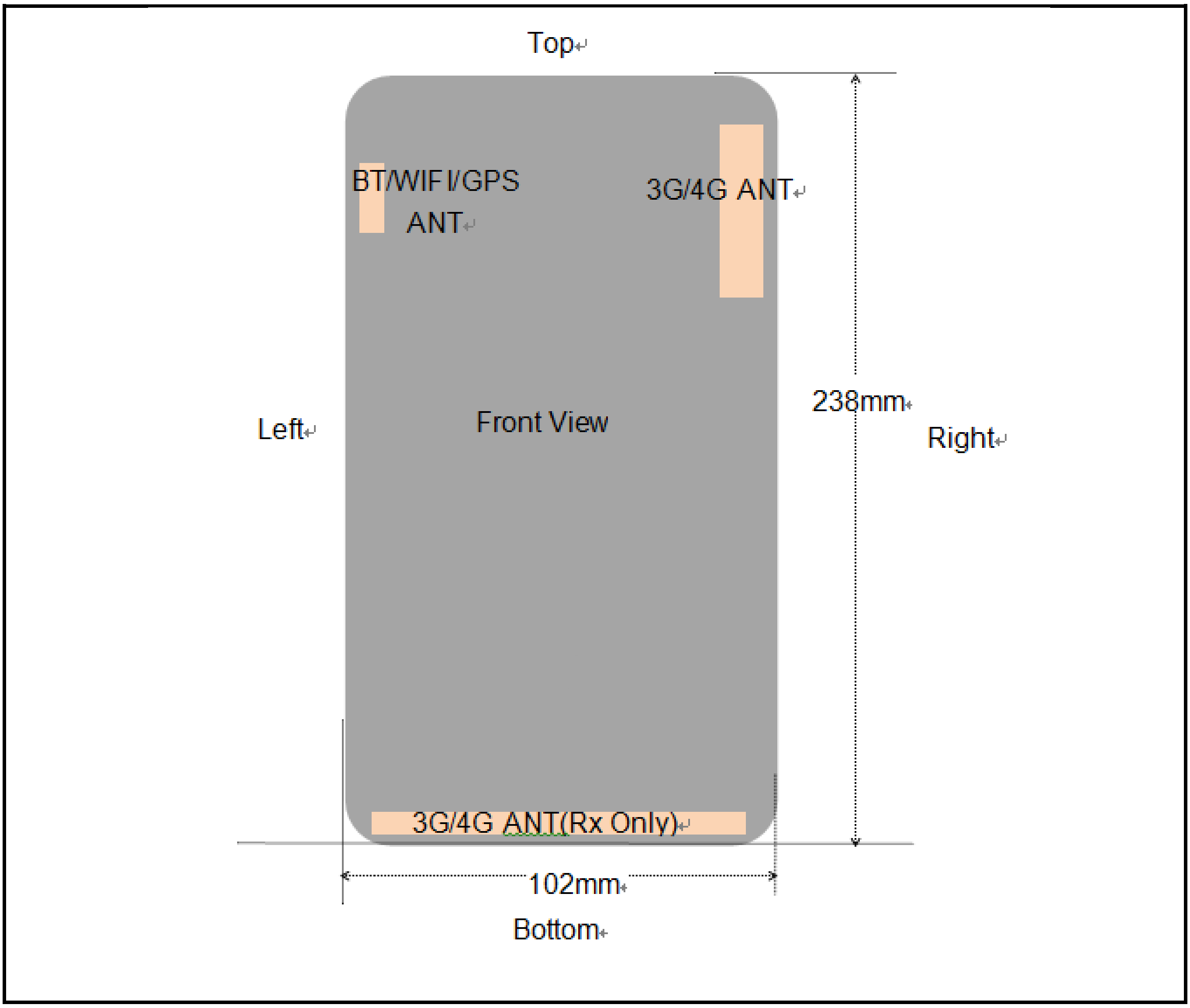


Fig.14.1 EUT Antenna Locations

Note: This antenna diagram is only used as a reference for the distance from the antenna to each edge. For the specific shape of the antenna, please refer to the physical photo.

14.2 Test Positions Consideration

SAR exclusion calculations for antenna																
Antennas	Freq. (MHz)	Max. tune-up Power		Distance of Antennas to EUT edge/surface (mm)						exclusion thresholds (mW)						
		dBm	mW	Front	Back	Left	Right	Top	Bot.	Front	Back	Left	Right	Top	Bot.
2.4G WIFI	2437	17.5	56.2	10	50	5	90	19	150	25.73	548.45	6.90	1676.55	87.15	4427.50
5.2G WIFI	5180	9.0	7.9	10	50	5	90	19	150	15.75	437.08	3.78	1471.08	59.28	4223.75
5.8G WIFI	5745	9.5	8.9	10	50	5	90	19	150	14.73	423.68	3.48	1444.90	56.23	4196.50
Bluetooth	2402	9.5	8.9	10	50	5	90	19	150	25.98	550.85	6.98	1680.78	87.80	4431.50

Test Positions						
Antennas	Front	Back	Left	Right	Top	Bottom
2.4G WIFI	Yes	No	Yes	No	No	No
5.2G WIFI	No	No	Yes	No	No	No
5.8G WIFI	No	No	Yes	No	No	No
Bluetooth	No	No	Yes	No	No	No

Note:

1. Limb (hands) SAR mode SAR assessments is required.
2. Per KDB 447498 D04v01, for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user, which is 0 mm for Limb SAR.

15 SAR Test Results Summary

WCDMA/LTE please refer to FCC ID: V5PE600MINI, report No. JYTSZB-R14-2100284.

15.1 Limb SAR Data

➢ WLAN 2.4GHz Limb SAR

Plot No.	Band/Mode	Test Position	CH.	Freq. (MHz)	Ave. Power (dBm)	Variation (%)	Tune-Up Limit (dBm)	Meas. SAR_{10g} (W/kg)	Scaling Factor	D.C Factor	Reported SAR_{10g} (W/kg)
	2.4GHz/802.11b	Front	6	2437	16.93	-2.27	17.5	0.111	1.140	1.000	0.127
1	2.4GHz/802.11b	Left	6	2437	16.93	0.82	17.5	**0.266**	1.140	1.000	0.303
ANSI / IEEE C95.1 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**4.0 W/kg (mW/g) Averaged over 10g**						

➢ WLAN 5.2GHz Limb SAR

Plot No.	Band/Mode	Test Position	CH.	Freq. (MHz)	Ave. Power (dBm)	Variation (%)	Tune-Up Limit (dBm)	Meas. SAR_{10g} (W/kg)	Scaling Factor	D.C Factor	Reported SAR_{10g} (W/kg)
2	5.2GHz/802.11a	Left	36	5180	8.23	-0.19	9.0	**0.052**	1.194	1.000	0.062
ANSI / IEEE C95.1 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**4.0 W/kg (mW/g) Averaged over 10g**						

➢ WLAN 5.8GHz Limb SAR

Plot No.	Band/Mode	Test Position	CH.	Freq. (MHz)	Ave. Power (dBm)	Variation (%)	Tune-Up Limit (dBm)	Meas. SAR_{10g} (W/kg)	Scaling Factor	D.C Factor	Reported SAR_{10g} (W/kg)
3	5.8GHz/802.11a	Left	149	5745.0	8.93	-0.54	9.5	**0.067**	1.140	1.000	0.076
ANSI / IEEE C95.1 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**4.0 W/kg (mW/g) Averaged over 10g**						

➢ Bluetooth Limb SAR

Plot No.	Band/Mode	Test Position	CH.	Freq. (MHz)	Ave. Power (dBm)	Variation (%)	Tune-Up Limit (dBm)	Meas. SAR_{10g} (W/kg)	Scaling Factor	D.C Factor	Reported SAR_{10g} (W/kg)
4	BT/8DPSK	Left	0	2402	9.10	-0.01	9.5	**0.034**	1.096	1.000	0.037
ANSI / IEEE C95.1 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**4.0 W/kg (mW/g) Averaged over 10g**						

Note:

1. Limb SAR testing was performed at 0mm separation.
2. Per KDB 447498 D04v01, for each exposure position, if the highest output channel Reported SAR ≤ 2.0W/kg, other channels SAR testing is not necessary.
3. Per KDB 248227 D01v02r02, for 802.11b DSSS , when the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 2.0 W/kg, no further SAR testing is required in that exposure configuration.
4. Per KDB 248227 D01v02r02, OFDM SAR is not required 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 ≤ 3.0 W/kg. Cuz the maximum output power specified for OFDM and DSSS are 63.10mW(18.0dBm) and 56.23mW(17.5dBm), the scaled SAR would be 0.303×(63.10/56.23)=0.340W/Kg<3.0 W/kg, therefore, SAR is not required for OFDM.
5. According to KDB 865664 D02v01r02, SAR plot is required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.

15.2 Repeated SAR measurement

Please refer to FCC ID: V5PE600MINI, report No. JYTSZB-R14-2100284.

15.3 Multi-Band Simultaneous Transmission Considerations

➢ **Simultaneous Transmission Capabilities**

According to FCC KDB Publication 447498 D04v01, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the EUT are shown in below Figure and are color-coded to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.

Path 1	Path 2	Path 3
WCDMA/LTE	Bluetooth/WLAN	NFC

Fig.15.1 Simultaneous Transmission Paths

➢ **Simultaneous Transmission Procedures**

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D04v01, simultaneous transmission SAR test exclusion may be applied when the sum of the 10-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤ 4.0 W/kg. When standalone SAR is not required to be measured, per FCC KDB 447498 D04v01 Appendix E, E.1), the following equation must be used to estimate the standalone 10g SAR for simultaneous transmission assessment involving that transmitter.

$$SAR_{est} = 4.0 \cdot P_{ant}/P_{th}[\mathrm{W/kg}]$$

Mode	Max. Power (dBm)	Max. Power (mW)	Exposure Position	Limb
NFC	-33.38	0.0005	Estimated SAR (W/kg)	0.00

Note:

1. Per KDB 447498 D04v01 section 2.1.2: 1-mW Test Exemption, P_{th} =1mW.

➢ **Multi-Band simultaneous Transmission Consideration**

➢ Simultaneous ➢ Transmission ➢ Consideration	Position	Applicable Combination
	Limb	WWAN (Data) + WLAN 2.4 GHz+NFC
		WWAN (Data) + WLAN 5.2GHz/5.8GHz+NFC
		WWAN (Data) + Bluetooth+NFC

Note:

1. WLAN 2.4GHz Band, WLAN 5.2GHz Band, WLAN 5.8GHz Band and Bluetooth share the same antenna, and cannot transmit simultaneously.
2. WCDMA/LTE shares the same antenna, and cannot transmit simultaneously.
3. The Report SAR summation is calculated based on the same configuration and test position.
4. Per KDB 447498 D04v01, simultaneous transmission SAR is compliant if,
   i. Scalar SAR summation < 4.0 W/kg.
   ii. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*), and the peak separation distance is determined from the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary
   iii. Simultaneously transmission SAR measurement, and the Reported multi-band SAR < 4.0 W/kg

15.4 SAR Simultaneous Transmission Analysis

➢ **Limb Simultaneous Transmission**

Position		Standalone SAR(W/kg)				-	Σ SAR_{1g} (W/kg)		
		1	2	3	4	5	1+2+5	1+3+5	1+4+5
		WWAN	2.4G WLAN	5G WLAN	BT	NFC			
Limb	Front	1.805	0.127	0.000	0.000	0.00	1.932	1.805	1.805
	Back	0.257	0.000	0.000	0.000	0.00	0.257	0.257	0.257
	Left	0.000	0.303	0.076	0.037	0.00	0.303	0.076	0.037
	Right	2.717	0.000	0.000	0.000	0.00	2.717	2.717	2.717
	Top	0.663	0.000	0.000	0.000	0.00	0.663	0.663	0.663
	Bottom	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000

➢ **Simultaneous Transmission Conclusion**

The above numerical summed SAR results for all the case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D04v01.

15.5 Measurement Uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

15.6 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Industry Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested. Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

16 Reference

[1]. FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules andRegulations”

[2]. ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposureto Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3]. IEEE Std. 1528-2013, “Recommended Practice for Determining the Peak Spatial-AverageSpecific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices:Measurement Techniques”, September2013

[4]. OpenSAR V5 Software User Manual

[5]. FCC KDB 248227 D01 v02r02, “SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS”, October 2015

[6]. FCC KDB 447498 D04 v01, “RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES”, November 2021

[7]. FCC KDB 648474 D04 v01r03, “SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS”, October 2015

[8]. FCC KDB 941225 D06 v02r01, "SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES", October 2015

[9]. FCC KDB 865664 D01 v01r04, “SAR MEASUREMENT REQUIREMENTS FOR 100 MHz TO 6 GHz”, August2015

Appendix A: Plots of SAR System Check

System check at 2450 MHz

Date of measurement: 16/12/2022

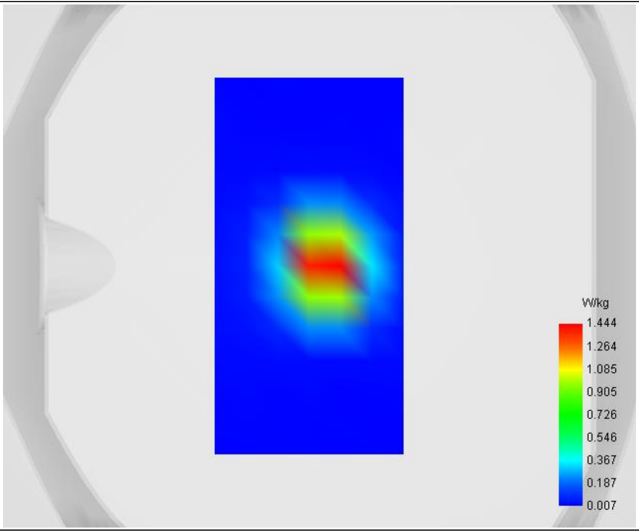
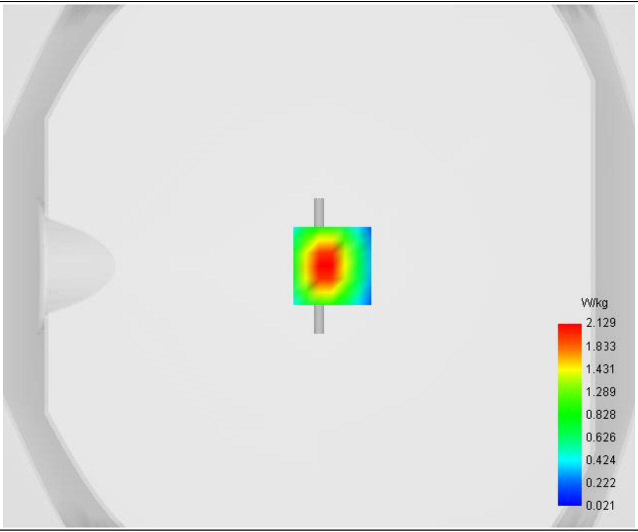
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	2.46
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	2450.000000
Relative permitivity (real part)	39.570000
Conductivity (S/m)	1.820154

C. SAR Surface and Volume

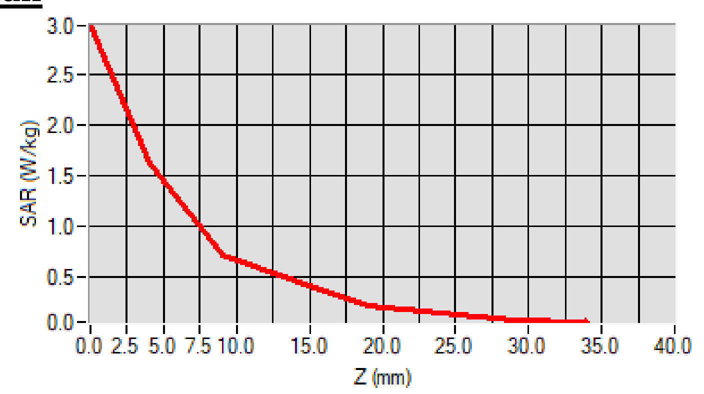
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=0.00 ; SAR Peak: 2.67 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.987282
SAR 1g (W/Kg)	2.190020
Variation (%)	0.120000

E. Z Axis Scan



System check at 5200 MHz

Date of measurement: 16/12/2022

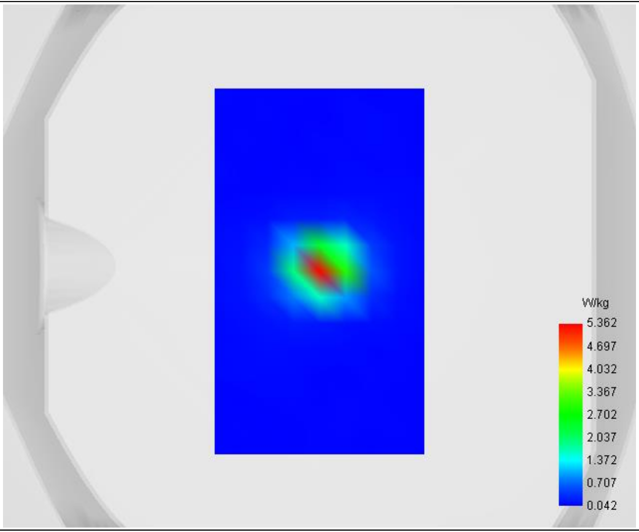
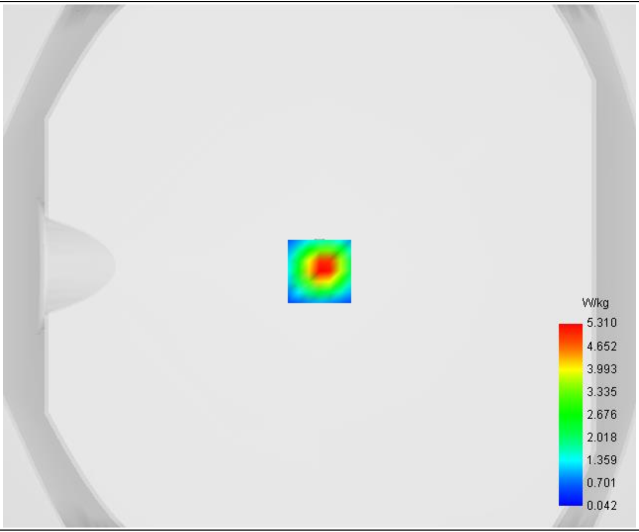
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	1.71
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.380000
Conductivity (S/m)	4.691238

C. SAR Surface and Volume

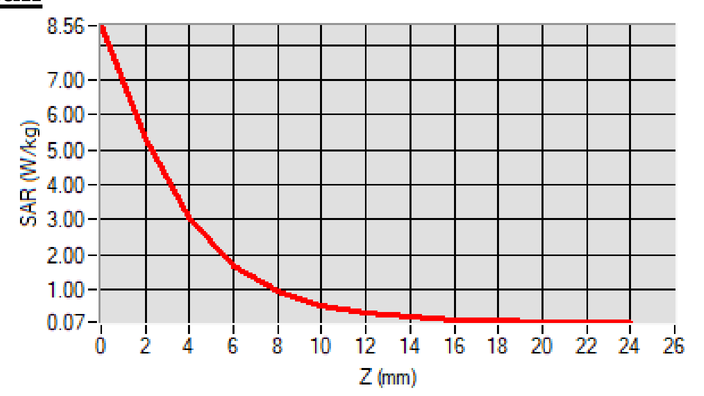
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-2.00 ; SAR Peak: 9.16 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.953208
SAR 1g (W/Kg)	3.156132
Variation (%)	1.390000

E. Z Axis Scan



System check at 5800 MHz

Date of measurement: 16/12/2022

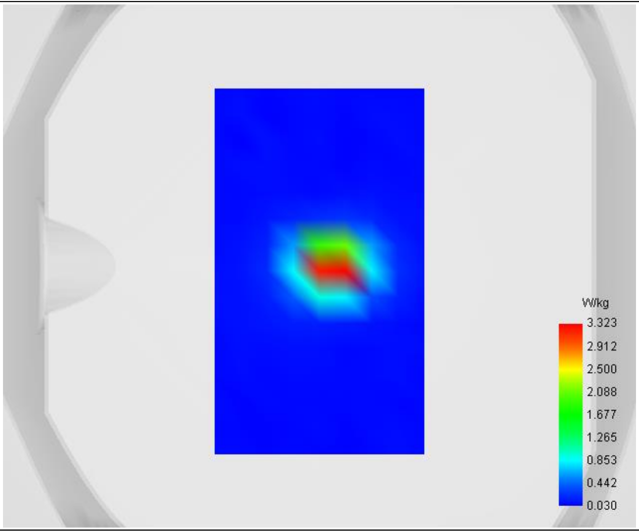
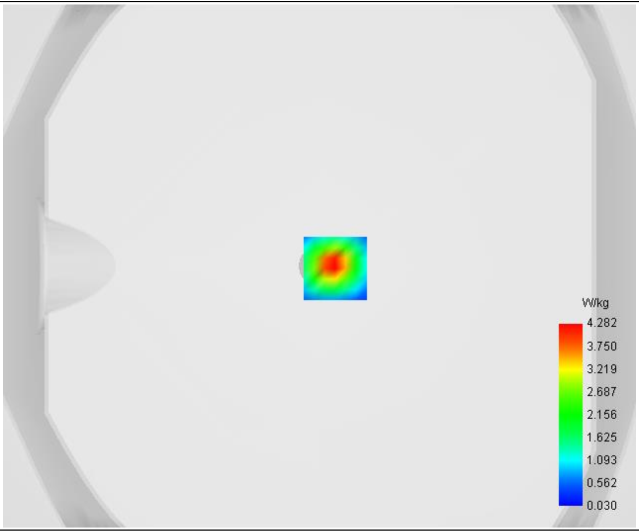
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	1.94
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	5800.000000
Relative permitivity (real part)	35.960275
Conductivity (S/m)	5.371023

C. SAR Surface and Volume

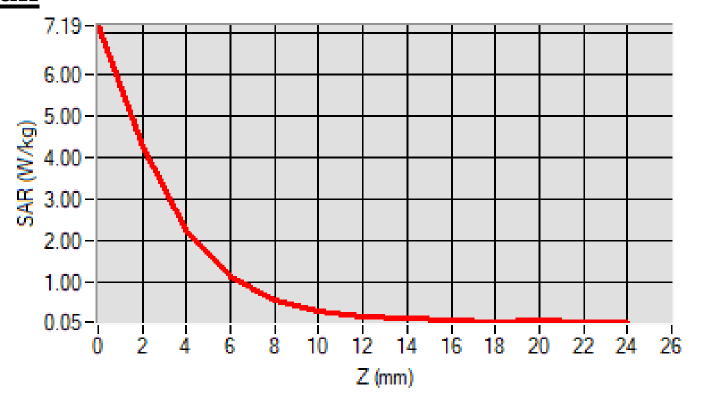
SURFACE SAR	VOLUME SAR
	

Maximum location: X=6.00, Y=-1.00 ; SAR Peak: 7.66 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.966031
SAR 1g (W/Kg)	3.187322
Variation (%)	0.120000

E. Z Axis Scan



Appendix B: Plots of SAR Test Data

SAR Measurement at IEEE 802.11b ISM (Body, Validation Plane)

Date of measurement: 16/12/2022

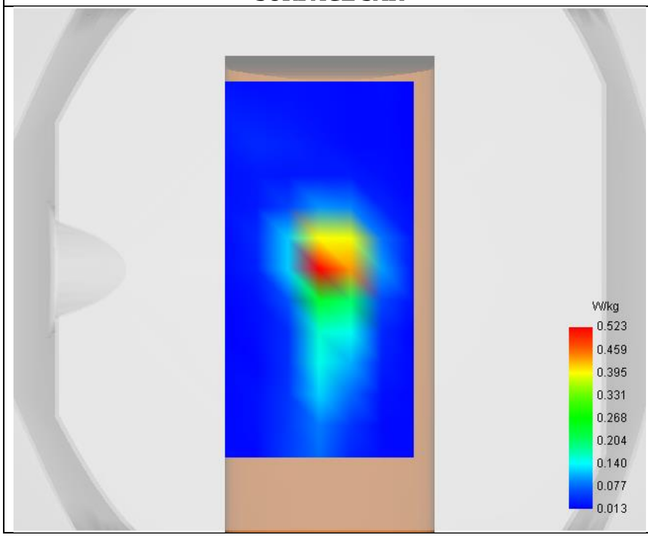
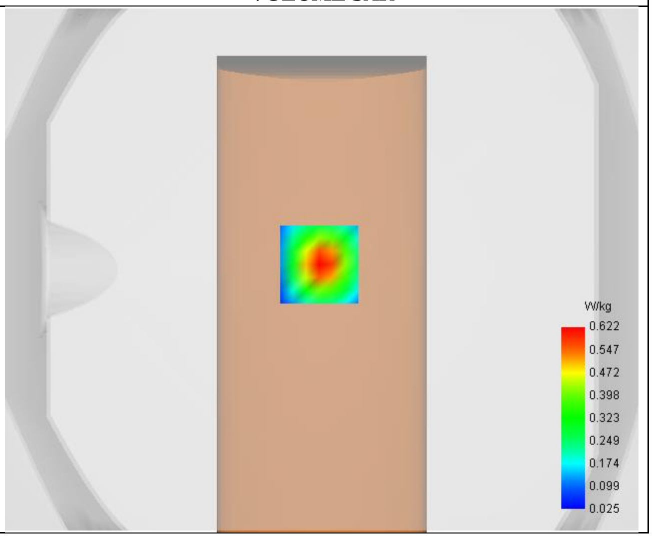
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	2.46
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Middle
Signal	IEEE802.b (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	2437.000000
Relative permitivity (real part)	39.560002
Conductivity (S/m)	1.819081

C. SAR Surface and Volume

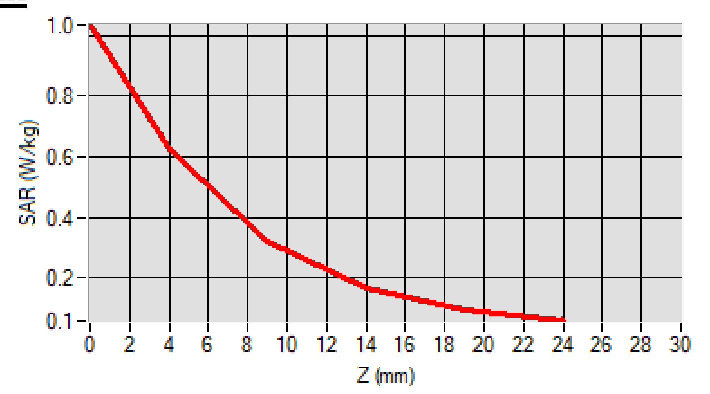
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-1.00, Y=2.00 ; SAR Peak: 1.04 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.266037
SAR 1g (W/Kg)	0.556809
Variation (%)	0.820000

E. Z Axis Scan



SAR Measurement at CUSTOM (5.2GHz_802.11a) (Body, Validation Plane)

Date of measurement: 16/12/2022

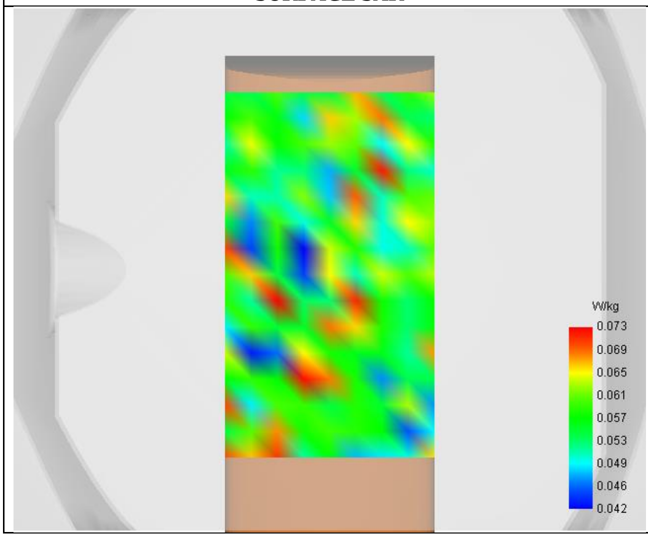
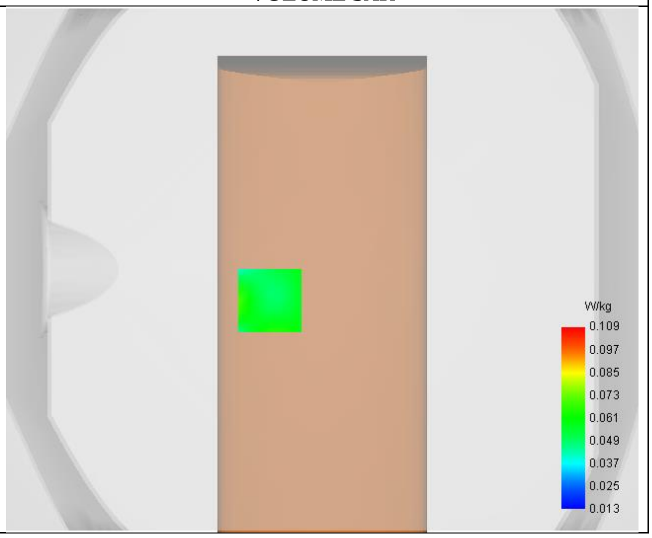
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	1.71
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11a
Channels	Low
Signal	IEEE802.a (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	5180.000000
Relative permittivity (real part)	36.020100
Conductivity (S/m)	4.680110

C. SAR Surface and Volume

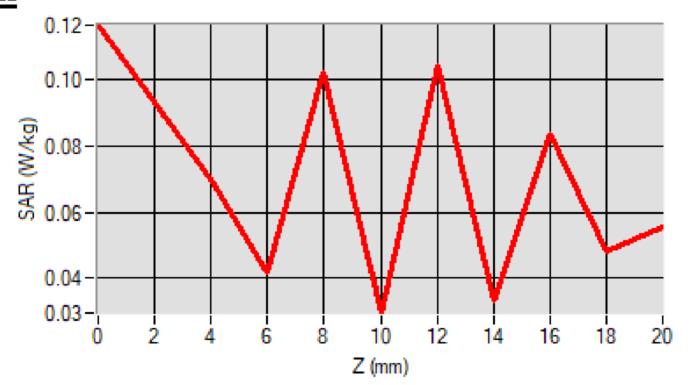
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-20.00, Y=-12.00 ; SAR Peak: 0.09 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.051811
SAR 1g (W/Kg)	0.057777
Variation (%)	-0.190000

E. Z Axis Scan



SAR Measurement at CUSTOM (5.8GHz_802.11a) (Body, Validation Plane)

Date of measurement: 16/12/2022

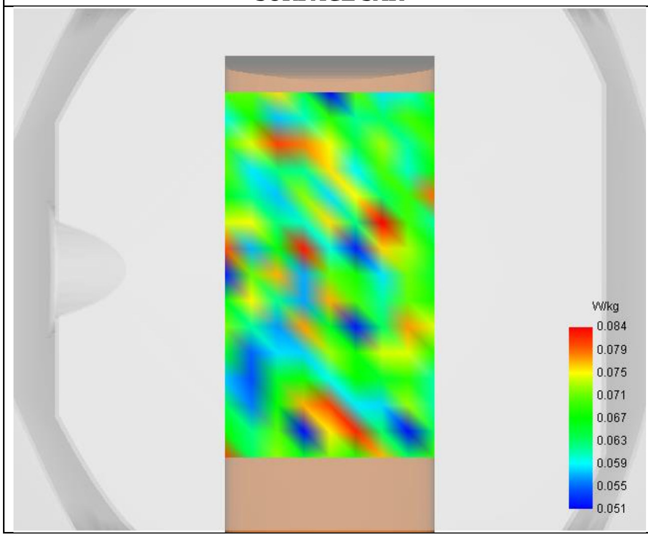
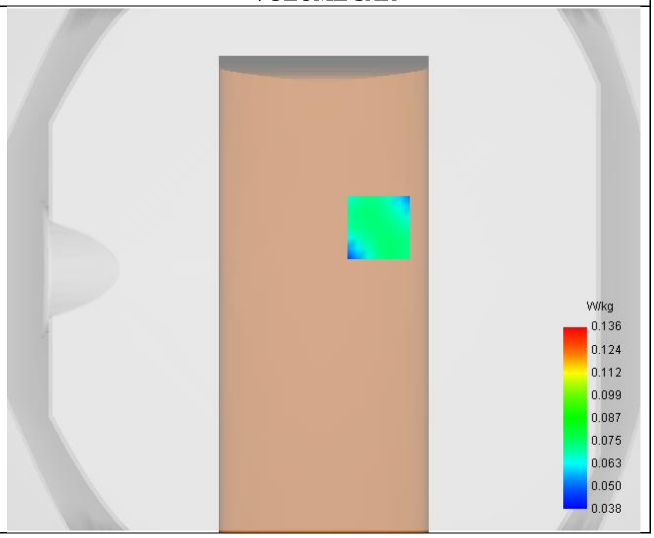
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	1.94
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11a
Channels	Low
Signal	IEEE802.a (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	5745.000000
Relative permittivity (real part)	35.331000
Conductivity (S/m)	5.360300

C. SAR Surface and Volume

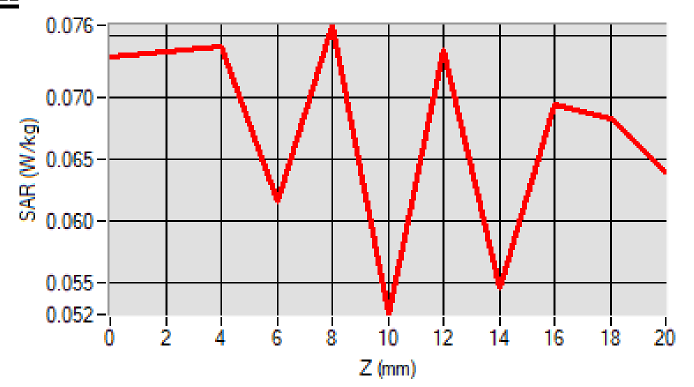
SURFACE SAR	VOLUME SAR
	

Maximum location: X=21.00, Y=16.00 ; SAR Peak: 0.11 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.066859
SAR 1g (W/Kg)	0.077312
Variation (%)	-0.540000

E. Z Axis Scan



SAR Measurement at Bluetooth (Body, Validation Plane)

Date of measurement: 16/12/2022

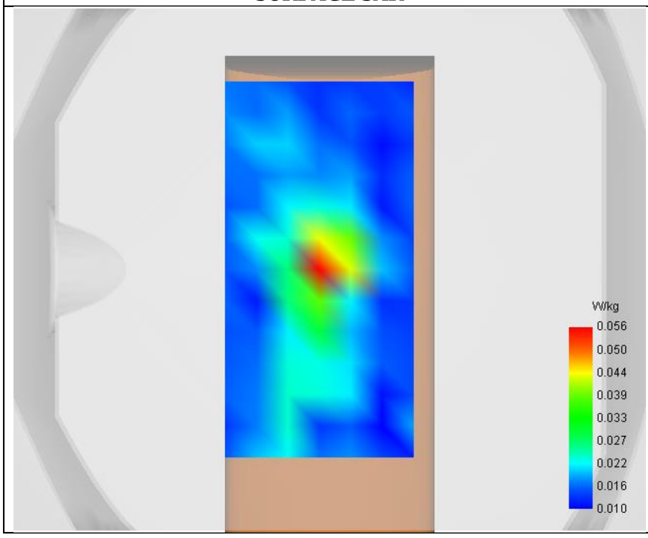
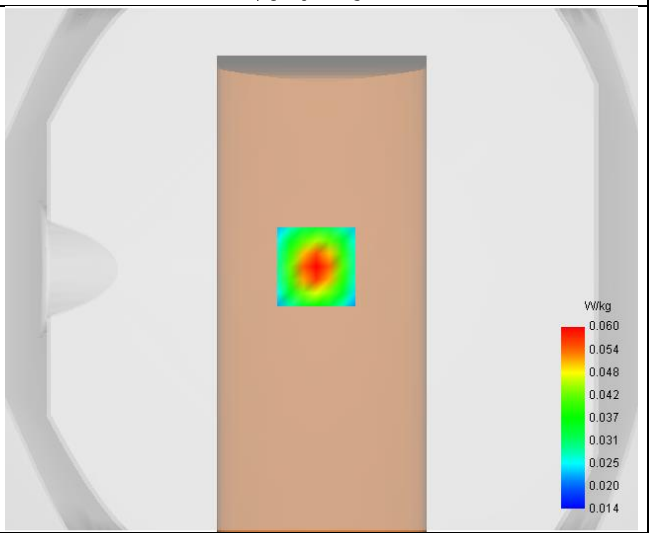
A. Experimental conditions.

Probe	SN 18/21 EPGO354
ConvF	2.46
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Bluetooth
Channels	Low
Signal	Bluetooth (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	2402.000000
Relative permitivity (real part)	39.260011
Conductivity (S/m)	1.817330

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-2.00, Y=1.00 ; SAR Peak: 0.09 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.034293
SAR 1g (W/Kg)	0.054608
Variation (%)	-0.010000

E. Z Axis Scan