SAR TEST REPORT

Product Name: Smartphone

Model Name: LIV 3S LTE

FCC ID：2APW4LIV3SL

Issued For : Bolt Modus Corp

Oficina N.33 Edificio Ofidepositos Central, Calidonia - Distrito Federal, Panama

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China

Report Number: LGT22J041HA01

Sample Received Date: October 28, 2022

Date of Test: October 28, 2022 –November 12, 2022

Date of Issue: November 14, 2022

Max. SAR (1g): Head: 0.835 W/kg

Body: 1.438W/kg

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Revision History

Rev.	Issue Date	Contents
00	November 14, 2022	Initial Issue

TEST REPORT CERTIFICATION

Applicant	Bolt Modus Corp
Address	Oficina N.33 EdificioOfidepositos Central, Calidonia - Distrito Federal, Panama
Manufacture	Bolt Modus Corp
Address	Oficina N.33 EdificioOfidepositos Central, Calidonia - Distrito Federal, Panama
Product Name	Smartphone
Trade Mark	YEZZ
Model Name	LIV 3S LTE
Sample Status:	Normal
Sample number:	LGT22010034

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC KDB 447498 D04 v01；FCC KDB 865664 D01 v01r04；FCC KDB 865664 D02 v01r02；FCC KDB 941225 D01 v03r01；FCC KDB 941225 D05 v02r05；FCC KDB 941225 D06 v02r01；FCC KDB 648474 D04 v01r03；FCC KDB 248227 D01 Wi-Fi SAR v02r02	PASS

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Manager

SHENZHEN LGT TEST SERVICE CO., LTD.
LGT
领冠检测

(1) The test report is effective only with both signature and specialized stamp.

(2) This report shall not be reproduced except in full without the written approval of the Laboratory.

(3) The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products.

1. General Information

1.1 EUT Description

Product Name	Smartphone		
Trademark	YEZZ		
Model Name	LIV 3S LTE		
Series Model	N/A		
Model Difference	N/A		
Hardware Version	TH1111V2.1		
Software Version	YEZZ_LIV_3S_LTE_EN_12_B202_HW1_V001_20221020		
Frequency Range	GSM 850: 824 ~ 849 MHz PCS 1900: 1850 ~ 1910 MHz WCDMA Band II: 1850 ~ 1910 MHz WCDMA Band V: 824 ~ 849 MHz LTE Band 2:1850 ~1910MHz LTE Band 4:1710 ~1755MHz LTE Band 7:2500 ~ 2570MHz LTE Band 17:704 ~ 716MHz WLAN 802.11b/g/n20: 2412 MHz ~ 2462 MHz WLAN 802.11n40: 2422 MHz ~ 2452 MHz Bluetooth: 2402 ~ 2480 MHz		
Max. Reported SAR(1g)	Mode	Head (W/ kg)	Body Worn and Hotspot(W/kg)
	GSM 850	0.398	0.447
	PCS 1900	0.288	0.674
	WCDMA Band II	0.618	0.964
	WCDMA Band V	0.298	0.335
	LTE Band 2	0.835	1.438
	LTE Band 4	0.706	1.212
	LTE Band 7	0.699	1.417
	LTE Band 17	0.250	0.362
	2.4G WLAN	0.106	0.058
	Bluetooth	0.074	0.034
	Limit	1.6 W/kg	
Battery	Rated Voltage:3.8V Charge Limit Voltage:4.35V Capacity: 2000mAh		
Description test modes	SIM 1 and SIM 2 is a chipset unit and tested as single chipset, SIM 1 is used to tested.		
Modulation Mode	GSM: GSM Voice; GPRS/EGPRS Class 12 WCDMA: RMC, HSDPA, HSUPA Release 6 LTE: QPSK, 16QAM 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 Bluetooth: GFSK +π/4DQPSK+8DPSK BLE: GFSK		
Antenna Specification	GSM/WCDMA/LTE: PIFA Antenna Bluetooth: PIFA Antenna WLAN: PIFA Antenna		
Operating Mode	Maximum continuous output		

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, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China
	FCC test Firm Registration No.: 746540 IC Registration No.: CN0136 A2LA Certificate No.: 6727.01

2. Test Standards and Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz 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 D04 v01	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 941225 D01 v03r01	SAR Measurement Procedures for 3G Devices
8	FCC KDB 941225 D05 v02r05	SAR for LTE Devices
9	FCC KDB 941225 D06 v02r01	Hotspot Mode SAR
10	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
11	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

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

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

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

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

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

Population/Uncontrolled Environments:

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

Occupational/Controlled Environments:

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

NOTE GENERAL POPULATION/UNCONTROLLED EXPOSURE PARTIAL BODY LIMIT 1.6 W/kg

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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

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

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

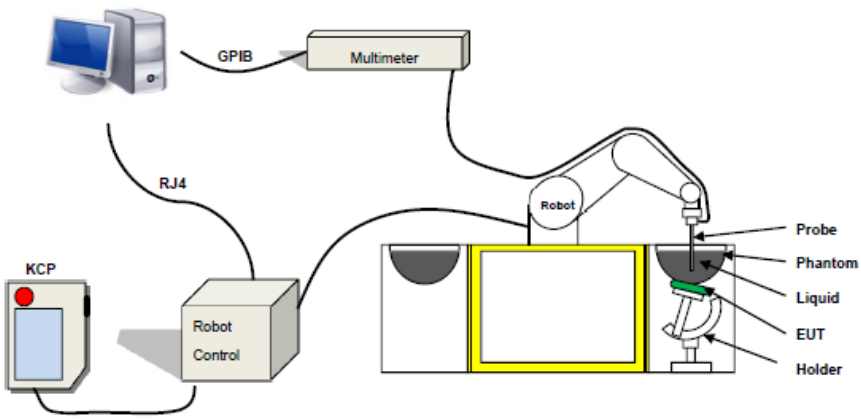
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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: 150 MHz to 6 GHz for head & body simulating liquid.
-Angle between probe axis (evaluation axis) and surface normal line: less than 30°

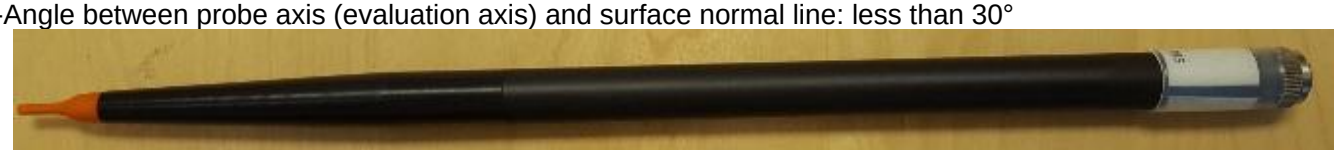


Figure 1-MVG COMOSAR Dosimetric E field Probe

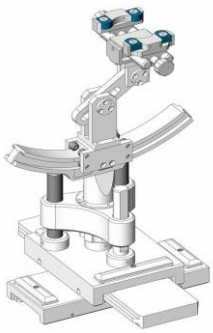
3.2.2 Phantom

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 1g S/m	
	Head	Body	Head	Body
300	45.3	45.3	0.87	0.87
450	43.5	43.5	0.87	0.87
900	41.5	41.5	0.97	0.97
1450	40.5	40.5	1.20	1.20
1800	40.0	40.0	1.40	1.40
2450	39.2	39.2	1.80	1.80
3000	38.5	38.5	2.40	2.40
5200	36.0	36.0	4.70	4.70

LIQUID MEASUREMENT RESULTS

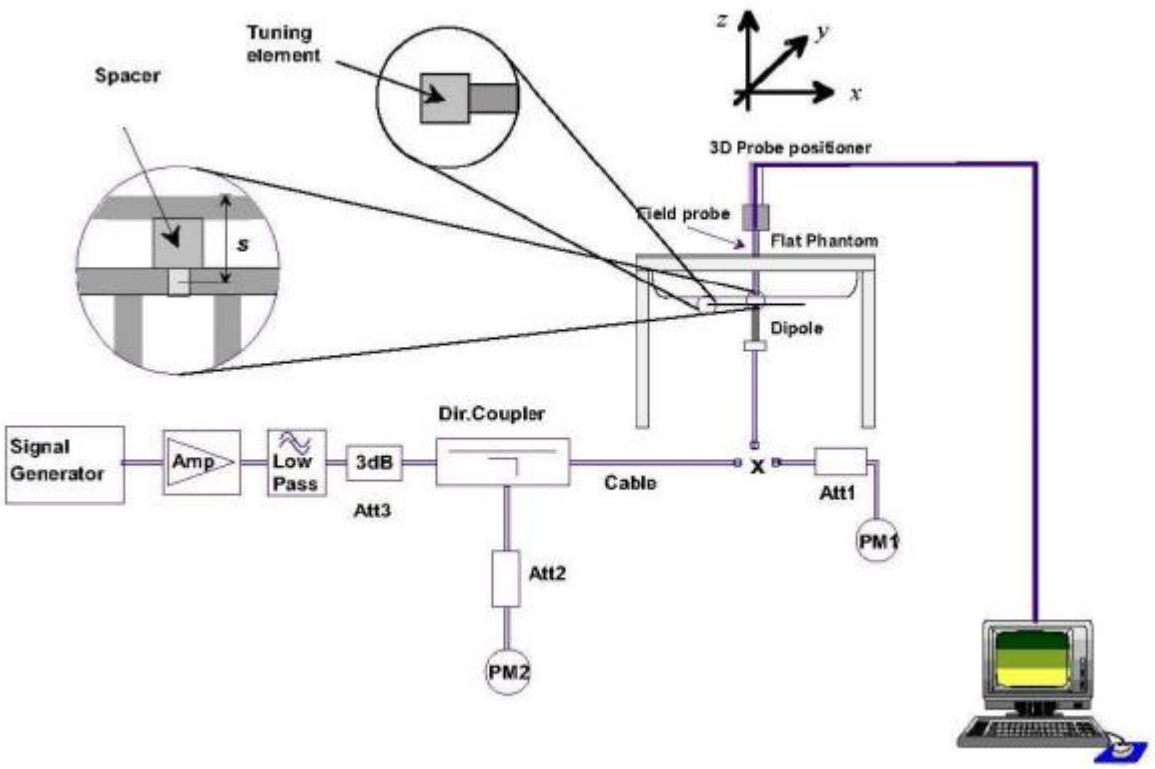
Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency(MHz)	Temp. [°C]					
2022.11.10	23.7	63	750 MHz	23.4	Permittivity	41.9	42.578	1.617	±5
					Conductivity	0.89	0.904	1.569	±5
2022.11.03	23.5	62	835 MHz	23.4	Permittivity	41.50	43.056	3.750	±5
					Conductivity	0.92	0.924	0.426	±5
2022.11.09	23.4	60	1800 MHz	23.6	Permittivity	40.00	39.365	-1.588	±5
					Conductivity	1.40	1.427	1.961	±5
2022.11.08	23.4	65	1900 MHz	23.8	Permittivity	40	41.391	3.478	±5
					Conductivity	1.4	1.419	1.373	±5
2022.11.10	23.7	63	2450MHz	23.6	Permittivity	39.2	38.494	-1.801	±5
					Conductivity	1.8	1.810	0.561	±5
2022.11.10	23.5	63	2600 MHz	23.4	Permittivity	39	39.721	1.850	±5
					Conductivity	1.96	1.951	-0.445	±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	Power drift	Tested Value	Normalized SAR	Target SAR	Tolerance
	(MHz)	(mW)	(%)	(W/Kg)	(W/kg)	1g(W/kg)	(%)
2022.11.10	750	100	-0.96	0.838	8.38	8.27	1.33
2022.11.03	835	100	-2.48	0.996	9.96	9.75	2.15
2022.11.09	1800	100	-1.73	3.917	39.17	39.06	0.28
2022.11.08	1900	100	-0.98	4.062	40.62	40.85	-0.56
2022.11.10	2450	100	3.27	5.449	54.49	54.28	0.39
2022.11.10	2600	100	2.96	5.656	56.56	56.58	-0.04

•

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 Test Position

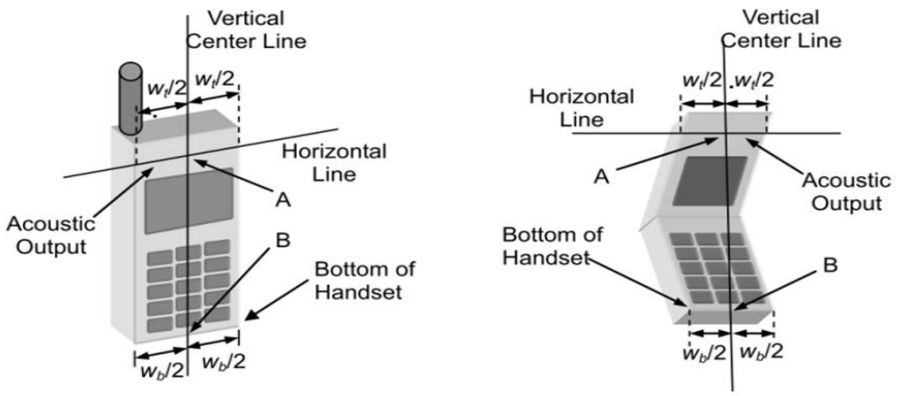
This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

Define Two Imaginary Lines On The Handset:

1)The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.

2)The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

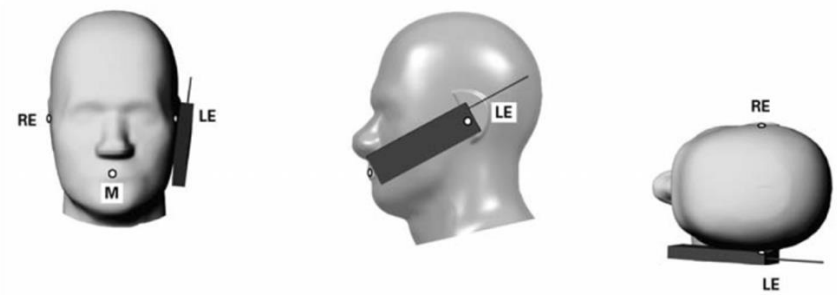
3)The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



7.1 Cheek Position

1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

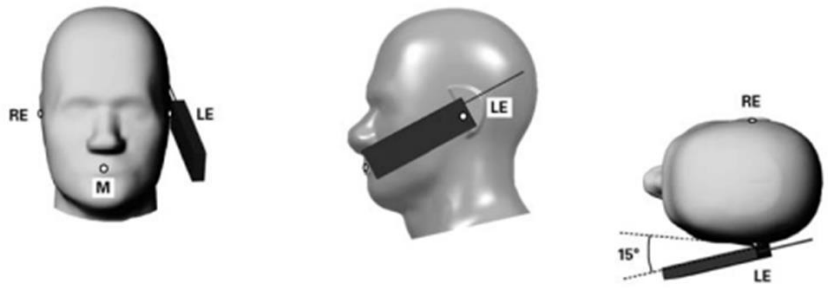
2) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost



7.2 Tilt Position

(1)To position the device in the “cheek” position described above.

(2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.

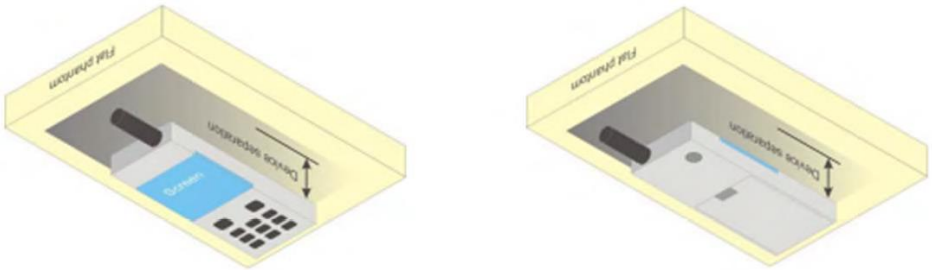


7.3 Body-worn Position Conditions

1) To position the EUT parallel to the phantom surface.

2) To adjust the EUT parallel to the flat phantom.

3) To adjust the distance between the EUT surface and the flat phantom to 10mm.



8. Measurement Uncertainty

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	$\sqrt{3}$	√0.5	√0.5	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	√0.5	√0.5	2.41	2.41	∞
Boundary effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	1.81	1.81	∞
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	∞
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	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	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				10.47	10.34	
Expanded Uncertainty (95% Confidence interval)		K				20.95	20.69	

8.1 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	

9. Conducted Power Measurement

Test Result:

Burst Average Power (dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM (GMSK, 1-Slot)	31.69	31.69	31.83	28.32	28.53	28.57
GPRS (GMSK, 1-Slot)	31.68	31.73	31.84	28.37	28.55	28.58
GPRS (GMSK, 2-Slot)	29.69	29.6	29.55	26.15	26.08	25.79
GPRS (GMSK, 3-Slot)	27.83	27.74	27.73	24.55	24.47	24.15
GPRS (GMSK, 4-Slot)	25.79	25.74	25.72	22.46	22.36	22.09
EGPRS(8PSK, 1-Slot)	24.35	24.25	24.3	24.56	25.23	25.52
EGPRS(8PSK, 2-Slot)	22.99	23.08	23.15	23.36	23.86	23.98
EGPRS(8PSK, 3-Slot)	20.5	20.49	20.44	21.07	21.9	21.9
EGPRS(8PSK, 4-Slot)	18.77	20.29	20.2	17.91	18.74	18.77
Remark: GPRS, CS4 coding scheme. EGPRS, MCS5 coding scheme. Multi-Slot Class 8, Support Max 4 downlink, 1 uplink, 5 working link Multi-Slot Class 10, Support Max 4 downlink, 2 uplink, 5 working link Multi-Slot Class 12, Support Max 4 downlink, 4 uplink, 5 working link						

Frame- Average Power(dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM (GMSK, 1-Slot)	22.66	22.66	22.80	19.29	19.50	19.54
GPRS (GMSK, 1-Slot)	22.65	22.70	22.81	19.34	19.52	19.55
GPRS (GMSK, 2-Slot)	23.67	23.58	23.53	20.13	20.06	19.77
GPRS (GMSK, 3-Slot)	23.57	23.48	23.47	20.29	20.21	19.89
GPRS (GMSK, 4-Slot)	22.78	22.73	22.71	19.45	19.35	19.08
EGPRS(8PSK, 1-Slot)	15.32	15.22	15.27	15.53	16.20	16.49
EGPRS(8PSK, 2-Slot)	16.97	17.06	17.13	17.34	17.84	17.96
EGPRS(8PSK, 3-Slot)	16.24	16.23	16.18	16.81	17.64	17.64
EGPRS(8PSK, 4-Slot)	15.76	17.28	17.19	14.90	15.73	15.76
Remark: 1. SAR testing was performed on the maximum frame-averaged power mode. 2. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum Burst - averaged power based on time slots. The calculated method is shown as below: Frame-averaged power = Burst averaged power (1 TX Slot) – 9.03 dB Frame-averaged power = Burst averaged power (2 TX Slots) – 6.02 dB Frame-averaged power = Burst averaged power (3 TX Slots) - 4.26 dB Frame-averaged power = Burst averaged power (4 TX Slots) – 3.01 dB						

WCDMA

Band	WCDMA Band 2			WCDMA Band 5		
Channel	9262	9400	9538	4132	4182	4233
Frequency (MHz)	1852.4	1880	1907.6	826.4	836.4	846.6
RMC 12.2Kbps	22.56	22.64	22.71	22.04	22.04	22.07
HSDPA Subtest-1	22.52	21.22	21.16	21.62	21.68	21.48
HSDPA Subtest-2	22.52	21.22	21.15	21.62	21.68	21.5
HSDPA Subtest-3	22.53	21.22	21.14	21.61	21.68	21.48
HSDPA Subtest-4	22.52	21.23	21.14	21.62	21.67	21.48
HSUPA Subtest-1	22.43	21.18	21.09	21.58	21.66	21.42
HSUPA Subtest-2	22.43	21.19	21.08	21.56	21.65	21.42
HSUPA Subtest-3	22.42	21.18	21.08	21.56	21.66	21.41
HSUPA Subtest-4	22.41	21.18	21.09	21.58	21.65	21.41
HSUPA Subtest-5	22.4	21.19	21.07	21.57	21.64	21.41

According to 3GPP 25.101 sub-clause 6.2.2, the maximum output power is allowed to be reduced by following the table.

Table 6.1A: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	0≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for βc/βd=12/15, βhs/ βc=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensation for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

WLAN (2.4G band)

a. The client supplied a special driver to program the EUT, allowing it to continually transmit the specified maximum power and change the channel frequency.
b. Maximum conducted power was measured by replacing the antenna with an adapter for conductive measurement.
c. The conducted power was measured at the high, middle and low channel frequency before and after the SAR measurement.
d. During SAR test, the highest output channel per band measured first, and then if necessary, the other channels were measured according to the normal procedures.

Output power (dBm):

2.4GWIFI				
Mode	Channel Number	Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11b	1	2412	9.04	8.02
	6	2437	8.29	6.75
	11	2462	10.55	11.35
802.11g	1	2412	9.65	9.23
	6	2437	9.01	7.96
	11	2462	10.37	10.89
802.11 n-HT20	1	2412	8.75	7.50
	6	2437	7.76	5.97
	11	2462	9.53	8.97

Bluetooth

BT				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	7.09	5.11
	39	2441	8.2	6.61
	78	2480	7.9	6.17
π/4-QPSK(2Mbps)	0	2402	9.47	8.85
	39	2441	9.82	9.59
	78	2480	8.37	6.87
8DPSK(3Mbps)	0	2402	9.63	9.18
	39	2441	10.01	10.02
	78	2480	8.56	7.18

BLE				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	-0.12	0.97
	19	2440	-1.05	0.79
	39	2480	-2.13	0.61

Tune Up Power:

Mode	GSM850(AVG)	GSM1900(AVG)
GSM/DCS	31±1dBm	28±1dBm
GPRS (1 Slot)	31±1dBm	28±1dBm
GPRS (2 Slot)	29±1dBm	25.5±1dBm
GPRS (3 Slot)	27±1dBm	24±1dBm
GPRS (4 Slot)	26±1dBm	21.5±1dBm
EGPRS(8PSK, 1-Slot)	23.5±1dBm	24.5±1dBm
EGPRS(8PSK, 2-Slot)	22.5±1dBm	23±1dBm
EGPRS(8PSK, 3-Slot)	19.5±1dBm	21±1dBm
EGPRS(8PSK, 4-Slot)	19.5±1dBm	18±1dBm

Mode	WCDMA Band 2	WCDMA Band 5
RMC 12.2Kbps	22±1dBm	21.5±1dBm
HSDPA Subtest-1	22±1dBm	21±1dBm
HSDPA Subtest-2	22±1dBm	21±1dBm
HSDPA Subtest-3	22±1dBm	21±1dBm
HSDPA Subtest-4	22±1dBm	21±1dBm
HSUPA Subtest-1	21.5±1dBm	21±1dBm
HSUPA Subtest-2	21.5±1dBm	21±1dBm
HSUPA Subtest-3	21.5±1dBm	21±1dBm
HSUPA Subtest-4	21.5±1dBm	21±1dBm
HSUPA Subtest-5	21.5±1dBm	21±1dBm

Mode	2.4G WLAN(AVG)
802.11b	10±1dBm
802.11g	9.5±1dBm
802.11n(HT 20)	9±1dBm

Mode	BT	
GFSK(1Mbps)	0	6.5±1dBm
	19	7.5±1dBm
	39	7±1dBm
π/4-QPSK(2Mbps)	0	8.5±1dBm
	19	9±1dBm
	39	7.5±1dBm
8DPSK(3Mbps)	0	9±1dBm
	19	9.5±1dBm
	39	8±1dBm

Mode	BLE	
GFSK(1Mbps)	0	0.5±1dBm
	19	-0.5±1dBm
	39	-1.5±1dBm

BW[MHz]	RB	Mode	Band 2	Band 4	Band 7	Band 17
1.4	1	QPSK	22±1dBm	19±1dBm	N/A	N/A
	3	QPSK	21±1dBm	19±1dBm	N/A	N/A
3	1	QPSK	22.5±1dBm	19.5±1dBm	N/A	N/A
	8	QPSK	21±1dBm	18±1dBm	N/A	N/A
5	1	QPSK	22±1dBm	19±1dBm	20±1dBm	22±1dBm
	12	QPSK	21±1dBm	18±1dBm	19±1dBm	21±1dBm
10	1	QPSK	22±1dBm	19±1dBm	20±1dBm	22±1dBm
	25	QPSK	20.5±1dBm	18±1dBm	19±1dBm	21±1dBm
15	1	QPSK	22±1dBm	19±1dBm	20.5±1dBm	N/A
	38	QPSK	22.5±1dBm	18±1dBm	19±1dBm	N/A
20	1	QPSK	22.1±1dBm	19±1dBm	20.1±1dBm	N/A
	50	QPSK	21±1dBm	18±1dBm	19±1dBm	N/A

LTE Conducted Power

General Note:

1. Anritsu CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ⩽ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ⩽ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ⩽ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

Band	Bandwidth(MHz)	UL Frequency(MHz)	Modulation	RB Size	RB Offset	Power (dBm)	Conclusion
Band2	1.4	1850.7	QPSK	6	LOW	21.34	Pass
Band2	1.4	1850.7	QPSK	3	LOW	22.78	Pass
Band2	1.4	1850.7	QPSK	3	MID	22.82	Pass
Band2	1.4	1850.7	QPSK	3	HIGH	22.91	Pass
Band2	1.4	1850.7	QPSK	1	LOW	22.71	Pass
Band2	1.4	1850.7	QPSK	1	MID	22.76	Pass
Band2	1.4	1850.7	QPSK	1	HIGH	22.72	Pass
Band2	1.4	1850.7	16QAM	6	LOW	20.72	Pass
Band2	1.4	1850.7	16QAM	3	LOW	21.72	Pass
Band2	1.4	1850.7	16QAM	3	MID	21.71	Pass
Band2	1.4	1850.7	16QAM	3	HIGH	21.73	Pass
Band2	1.4	1850.7	16QAM	1	LOW	22.28	Pass
Band2	1.4	1850.7	16QAM	1	MID	22.26	Pass
Band2	1.4	1850.7	16QAM	1	HIGH	22.3	Pass
Band2	1.4	1880	QPSK	6	LOW	20.49	Pass
Band2	1.4	1880	QPSK	3	LOW	21.63	Pass
Band2	1.4	1880	QPSK	3	MID	21.62	Pass
Band2	1.4	1880	QPSK	3	HIGH	21.6	Pass
Band2	1.4	1880	QPSK	1	LOW	21.71	Pass
Band2	1.4	1880	QPSK	1	MID	21.56	Pass
Band2	1.4	1880	QPSK	1	HIGH	21.7	Pass
Band2	1.4	1880	16QAM	6	LOW	19.76	Pass
Band2	1.4	1880	16QAM	3	LOW	20.84	Pass
Band2	1.4	1880	16QAM	3	MID	20.84	Pass
Band2	1.4	1880	16QAM	3	HIGH	20.93	Pass
Band2	1.4	1880	16QAM	1	LOW	20.95	Pass
Band2	1.4	1880	16QAM	1	MID	20.9	Pass
Band2	1.4	1880	16QAM	1	HIGH	20.92	Pass
Band2	1.4	1909.3	QPSK	6	LOW	20.56	Pass
Band2	1.4	1909.3	QPSK	3	LOW	21.65	Pass
Band2	1.4	1909.3	QPSK	3	MID	21.8	Pass
Band2	1.4	1909.3	QPSK	3	HIGH	21.74	Pass
Band2	1.4	1909.3	QPSK	1	LOW	21.55	Pass
Band2	1.4	1909.3	QPSK	1	MID	21.58	Pass
Band2	1.4	1909.3	QPSK	1	HIGH	21.53	Pass
Band2	1.4	1909.3	16QAM	6	LOW	20.01	Pass
Band2	1.4	1909.3	16QAM	3	LOW	20.9	Pass
Band2	1.4	1909.3	16QAM	3	MID	20.89	Pass
Band2	1.4	1909.3	16QAM	3	HIGH	20.8	Pass
Band2	1.4	1909.3	16QAM	1	LOW	20.77	Pass
Band2	1.4	1909.3	16QAM	1	MID	20.8	Pass
Band2	1.4	1909.3	16QAM	1	HIGH	20.83	Pass
Band2	3	1851.5	QPSK	15	LOW	21.48	Pass
Band2	3	1851.5	QPSK	8	LOW	21.51	Pass

Band2	3	1851.5	QPSK	8	MID	21.5	Pass
Band2	3	1851.5	QPSK	8	HIGH	21.53	Pass
Band2	3	1851.5	QPSK	1	LOW	23.02	Pass
Band2	3	1851.5	QPSK	1	MID	22.89	Pass
Band2	3	1851.5	QPSK	1	HIGH	22.54	Pass
Band2	3	1851.5	16QAM	15	LOW	20.66	Pass
Band2	3	1851.5	16QAM	8	LOW	20.75	Pass
Band2	3	1851.5	16QAM	8	MID	20.76	Pass
Band2	3	1851.5	16QAM	8	HIGH	20.8	Pass
Band2	3	1851.5	16QAM	1	LOW	21.86	Pass
Band2	3	1851.5	16QAM	1	MID	21.82	Pass
Band2	3	1851.5	16QAM	1	HIGH	22.06	Pass
Band2	3	1880	QPSK	15	LOW	20.55	Pass
Band2	3	1880	QPSK	8	LOW	20.58	Pass
Band2	3	1880	QPSK	8	MID	20.59	Pass
Band2	3	1880	QPSK	8	HIGH	20.56	Pass
Band2	3	1880	QPSK	1	LOW	21.55	Pass
Band2	3	1880	QPSK	1	MID	21.53	Pass
Band2	3	1880	QPSK	1	HIGH	21.61	Pass
Band2	3	1880	16QAM	15	LOW	19.74	Pass
Band2	3	1880	16QAM	8	LOW	19.92	Pass
Band2	3	1880	16QAM	8	MID	19.7	Pass
Band2	3	1880	16QAM	8	HIGH	19.76	Pass
Band2	3	1880	16QAM	1	LOW	21.15	Pass
Band2	3	1880	16QAM	1	MID	21.31	Pass
Band2	3	1880	16QAM	1	HIGH	21.08	Pass
Band2	3	1908.5	QPSK	15	LOW	20.63	Pass
Band2	3	1908.5	QPSK	8	LOW	20.62	Pass
Band2	3	1908.5	QPSK	8	MID	20.62	Pass
Band2	3	1908.5	QPSK	8	HIGH	20.66	Pass
Band2	3	1908.5	QPSK	1	LOW	21.66	Pass
Band2	3	1908.5	QPSK	1	MID	21.61	Pass
Band2	3	1908.5	QPSK	1	HIGH	21.63	Pass
Band2	3	1908.5	16QAM	15	LOW	19.93	Pass
Band2	3	1908.5	16QAM	8	LOW	19.98	Pass
Band2	3	1908.5	16QAM	8	MID	20	Pass
Band2	3	1908.5	16QAM	8	HIGH	19.92	Pass
Band2	3	1908.5	16QAM	1	LOW	20.76	Pass
Band2	3	1908.5	16QAM	1	MID	20.72	Pass
Band2	3	1908.5	16QAM	1	HIGH	20.8	Pass
Band2	5	1852.5	QPSK	25	LOW	21.44	Pass
Band2	5	1852.5	QPSK	12	LOW	21.6	Pass
Band2	5	1852.5	QPSK	12	MID	21.57	Pass
Band2	5	1852.5	QPSK	12	HIGH	21.6	Pass
Band2	5	1852.5	QPSK	1	LOW	22.92	Pass

Band2	5	1852.5	QPSK	1	MID	22.65	Pass
Band2	5	1852.5	QPSK	1	HIGH	22.6	Pass
Band2	5	1852.5	16QAM	25	LOW	20.45	Pass
Band2	5	1852.5	16QAM	12	LOW	20.59	Pass
Band2	5	1852.5	16QAM	12	MID	20.6	Pass
Band2	5	1852.5	16QAM	12	HIGH	20.52	Pass
Band2	5	1852.5	16QAM	1	LOW	21.37	Pass
Band2	5	1852.5	16QAM	1	MID	21.4	Pass
Band2	5	1852.5	16QAM	1	HIGH	21.27	Pass
Band2	5	1880	QPSK	25	LOW	20.54	Pass
Band2	5	1880	QPSK	12	LOW	20.59	Pass
Band2	5	1880	QPSK	12	MID	20.61	Pass
Band2	5	1880	QPSK	12	HIGH	20.57	Pass
Band2	5	1880	QPSK	1	LOW	21.54	Pass
Band2	5	1880	QPSK	1	MID	21.47	Pass
Band2	5	1880	QPSK	1	HIGH	21.6	Pass
Band2	5	1880	16QAM	25	LOW	19.8	Pass
Band2	5	1880	16QAM	12	LOW	19.71	Pass
Band2	5	1880	16QAM	12	MID	19.72	Pass
Band2	5	1880	16QAM	12	HIGH	19.68	Pass
Band2	5	1880	16QAM	1	LOW	19.97	Pass
Band2	5	1880	16QAM	1	MID	19.99	Pass
Band2	5	1880	16QAM	1	HIGH	19.99	Pass
Band2	5	1907.5	QPSK	25	LOW	20.6	Pass
Band2	5	1907.5	QPSK	12	LOW	20.69	Pass
Band2	5	1907.5	QPSK	12	MID	20.69	Pass
Band2	5	1907.5	QPSK	12	HIGH	20.64	Pass
Band2	5	1907.5	QPSK	1	LOW	21.82	Pass
Band2	5	1907.5	QPSK	1	MID	21.84	Pass
Band2	5	1907.5	QPSK	1	HIGH	21.88	Pass
Band2	5	1907.5	16QAM	25	LOW	19.77	Pass
Band2	5	1907.5	16QAM	12	LOW	19.72	Pass
Band2	5	1907.5	16QAM	12	MID	19.73	Pass
Band2	5	1907.5	16QAM	12	HIGH	19.77	Pass
Band2	5	1907.5	16QAM	1	LOW	21.18	Pass
Band2	5	1907.5	16QAM	1	MID	20.95	Pass
Band2	5	1907.5	16QAM	1	HIGH	20.87	Pass
Band2	10	1855	QPSK	50	LOW	21.51	Pass
Band2	10	1855	QPSK	25	LOW	21.5	Pass
Band2	10	1855	QPSK	25	MID	21.49	Pass
Band2	10	1855	QPSK	25	HIGH	21.5	Pass
Band2	10	1855	QPSK	1	LOW	22.87	Pass
Band2	10	1855	QPSK	1	MID	22.57	Pass
Band2	10	1855	QPSK	1	HIGH	22.66	Pass
Band2	10	1855	16QAM	50	LOW	20.68	Pass

Band2	10	1855	16QAM	25	LOW	20.58	Pass
Band2	10	1855	16QAM	25	MID	20.59	Pass
Band2	10	1855	16QAM	25	HIGH	20.61	Pass
Band2	10	1855	16QAM	1	LOW	21.89	Pass
Band2	10	1855	16QAM	1	MID	21.89	Pass
Band2	10	1855	16QAM	1	HIGH	21.84	Pass
Band2	10	1880	QPSK	50	LOW	20.62	Pass
Band2	10	1880	QPSK	25	LOW	20.58	Pass
Band2	10	1880	QPSK	25	MID	20.59	Pass
Band2	10	1880	QPSK	25	HIGH	20.64	Pass
Band2	10	1880	QPSK	1	LOW	21.78	Pass
Band2	10	1880	QPSK	1	MID	21.75	Pass
Band2	10	1880	QPSK	1	HIGH	21.78	Pass
Band2	10	1880	16QAM	50	LOW	19.85	Pass
Band2	10	1880	16QAM	25	LOW	19.85	Pass
Band2	10	1880	16QAM	25	MID	19.87	Pass
Band2	10	1880	16QAM	25	HIGH	19.89	Pass
Band2	10	1880	16QAM	1	LOW	20.85	Pass
Band2	10	1880	16QAM	1	MID	20.85	Pass
Band2	10	1880	16QAM	1	HIGH	20.87	Pass
Band2	10	1905	QPSK	50	LOW	20.58	Pass
Band2	10	1905	QPSK	25	LOW	20.71	Pass
Band2	10	1905	QPSK	25	MID	20.7	Pass
Band2	10	1905	QPSK	25	HIGH	20.72	Pass
Band2	10	1905	QPSK	1	LOW	21.81	Pass
Band2	10	1905	QPSK	1	MID	21.72	Pass
Band2	10	1905	QPSK	1	HIGH	21.82	Pass
Band2	10	1905	16QAM	50	LOW	19.72	Pass
Band2	10	1905	16QAM	25	LOW	19.97	Pass
Band2	10	1905	16QAM	25	MID	19.88	Pass
Band2	10	1905	16QAM	25	HIGH	19.88	Pass
Band2	10	1905	16QAM	1	LOW	20.54	Pass
Band2	10	1905	16QAM	1	MID	20.45	Pass
Band2	10	1905	16QAM	1	HIGH	20.42	Pass
Band2	15	1857.5	QPSK	75	LOW	21.38	Pass
Band2	15	1857.5	QPSK	38	LOW	21.39	Pass
Band2	15	1857.5	QPSK	38	MID	21.38	Pass
Band2	15	1857.5	QPSK	38	HIGH	21.38	Pass
Band2	15	1857.5	QPSK	1	LOW	22.83	Pass
Band2	15	1857.5	QPSK	1	MID	22.61	Pass
Band2	15	1857.5	QPSK	1	HIGH	21.6	Pass
Band2	15	1857.5	16QAM	75	LOW	20.62	Pass
Band2	15	1857.5	16QAM	38	LOW	20.69	Pass
Band2	15	1857.5	16QAM	38	MID	20.6	Pass
Band2	15	1857.5	16QAM	38	HIGH	20.61	Pass

Band2	15	1857.5	16QAM	1	LOW	22.17	Pass
Band2	15	1857.5	16QAM	1	MID	22.02	Pass
Band2	15	1857.5	16QAM	1	HIGH	21.16	Pass
Band2	15	1880	QPSK	75	LOW	20.59	Pass
Band2	15	1880	QPSK	38	LOW	20.61	Pass
Band2	15	1880	QPSK	38	MID	20.62	Pass
Band2	15	1880	QPSK	38	HIGH	20.63	Pass
Band2	15	1880	QPSK	1	LOW	21.78	Pass
Band2	15	1880	QPSK	1	MID	21.76	Pass
Band2	15	1880	QPSK	1	HIGH	21.94	Pass
Band2	15	1880	16QAM	75	LOW	19.82	Pass
Band2	15	1880	16QAM	38	LOW	19.73	Pass
Band2	15	1880	16QAM	38	MID	19.74	Pass
Band2	15	1880	16QAM	38	HIGH	19.75	Pass
Band2	15	1880	16QAM	1	LOW	20.8	Pass
Band2	15	1880	16QAM	1	MID	20.76	Pass
Band2	15	1880	16QAM	1	HIGH	20.92	Pass
Band2	15	1902.5	QPSK	75	LOW	20.6	Pass
Band2	15	1902.5	QPSK	38	LOW	20.66	Pass
Band2	15	1902.5	QPSK	38	MID	20.66	Pass
Band2	15	1902.5	QPSK	38	HIGH	20.66	Pass
Band2	15	1902.5	QPSK	1	LOW	21.74	Pass
Band2	15	1902.5	QPSK	1	MID	21.7	Pass
Band2	15	1902.5	QPSK	1	HIGH	21.64	Pass
Band2	15	1902.5	16QAM	75	LOW	19.76	Pass
Band2	15	1902.5	16QAM	38	LOW	19.72	Pass
Band2	15	1902.5	16QAM	38	MID	19.73	Pass
Band2	15	1902.5	16QAM	38	HIGH	19.74	Pass
Band2	15	1902.5	16QAM	1	LOW	21.12	Pass
Band2	15	1902.5	16QAM	1	MID	20.99	Pass
Band2	15	1902.5	16QAM	1	HIGH	21.03	Pass
Band2	20	1860	QPSK	100	LOW	21.44	Pass
Band2	20	1860	QPSK	50	LOW	21.51	Pass
Band2	20	1860	QPSK	50	MID	21.5	Pass
Band2	20	1860	QPSK	50	HIGH	20.69	Pass
Band2	20	1860	QPSK	1	LOW	23.06	Pass
Band2	20	1860	QPSK	1	MID	22.83	Pass
Band2	20	1860	QPSK	1	HIGH	22.03	Pass
Band2	20	1860	16QAM	100	LOW	20.62	Pass
Band2	20	1860	16QAM	50	LOW	20.82	Pass
Band2	20	1860	16QAM	50	MID	20.82	Pass
Band2	20	1860	16QAM	50	HIGH	19.93	Pass
Band2	20	1860	16QAM	1	LOW	21.89	Pass
Band2	20	1860	16QAM	1	MID	21.78	Pass
Band2	20	1860	16QAM	1	HIGH	20.92	Pass

Band2	20	1880	QPSK	100	LOW	20.63	Pass
Band2	20	1880	QPSK	50	LOW	20.65	Pass
Band2	20	1880	QPSK	50	MID	20.65	Pass
Band2	20	1880	QPSK	50	HIGH	20.58	Pass
Band2	20	1880	QPSK	1	LOW	22.02	Pass
Band2	20	1880	QPSK	1	MID	21.87	Pass
Band2	20	1880	QPSK	1	HIGH	22.13	Pass
Band2	20	1880	16QAM	100	LOW	19.63	Pass
Band2	20	1880	16QAM	50	LOW	19.79	Pass
Band2	20	1880	16QAM	50	MID	19.8	Pass
Band2	20	1880	16QAM	50	HIGH	19.72	Pass
Band2	20	1880	16QAM	1	LOW	20.69	Pass
Band2	20	1880	16QAM	1	MID	20.62	Pass
Band2	20	1880	16QAM	1	HIGH	20.72	Pass
Band2	20	1900	QPSK	100	LOW	20.58	Pass
Band2	20	1900	QPSK	50	LOW	20.76	Pass
Band2	20	1900	QPSK	50	MID	20.77	Pass
Band2	20	1900	QPSK	50	HIGH	20.68	Pass
Band2	20	1900	QPSK	1	LOW	21.74	Pass
Band2	20	1900	QPSK	1	MID	22.01	Pass
Band2	20	1900	QPSK	1	HIGH	21.75	Pass
Band2	20	1900	16QAM	100	LOW	19.9	Pass
Band2	20	1900	16QAM	50	LOW	19.84	Pass
Band2	20	1900	16QAM	50	MID	19.85	Pass
Band2	20	1900	16QAM	50	HIGH	19.76	Pass
Band2	20	1900	16QAM	1	LOW	21.58	Pass
Band2	20	1900	16QAM	1	MID	21.43	Pass
Band2	20	1900	16QAM	1	HIGH	21.54	Pass

Band	Bandwidth(MHz)	UL Frequency(MHz)	Modulation	RB Size	RB Offset	Power (dBm)	Conclusion
Band4	1.4	1710.7	QPSK	6	LOW	18.53	Pass
Band4	1.4	1710.7	QPSK	3	LOW	19.7	Pass
Band4	1.4	1710.7	QPSK	3	MID	19.66	Pass
Band4	1.4	1710.7	QPSK	3	HIGH	19.72	Pass
Band4	1.4	1710.7	QPSK	1	LOW	19.62	Pass
Band4	1.4	1710.7	QPSK	1	MID	19.66	Pass
Band4	1.4	1710.7	QPSK	1	HIGH	19.6	Pass
Band4	1.4	1710.7	16QAM	6	LOW	18.06	Pass
Band4	1.4	1710.7	16QAM	3	LOW	18.83	Pass
Band4	1.4	1710.7	16QAM	3	MID	18.82	Pass
Band4	1.4	1710.7	16QAM	3	HIGH	18.91	Pass
Band4	1.4	1710.7	16QAM	1	LOW	19.62	Pass
Band4	1.4	1710.7	16QAM	1	MID	19.65	Pass
Band4	1.4	1710.7	16QAM	1	HIGH	19.65	Pass
Band4	1.4	1732.5	QPSK	6	LOW	18.62	Pass
Band4	1.4	1732.5	QPSK	3	LOW	19.63	Pass
Band4	1.4	1732.5	QPSK	3	MID	19.63	Pass
Band4	1.4	1732.5	QPSK	3	HIGH	19.55	Pass
Band4	1.4	1732.5	QPSK	1	LOW	19.74	Pass
Band4	1.4	1732.5	QPSK	1	MID	19.91	Pass
Band4	1.4	1732.5	QPSK	1	HIGH	19.97	Pass
Band4	1.4	1732.5	16QAM	6	LOW	17.85	Pass
Band4	1.4	1732.5	16QAM	3	LOW	18.85	Pass
Band4	1.4	1732.5	16QAM	3	MID	18.86	Pass
Band4	1.4	1732.5	16QAM	3	HIGH	18.92	Pass
Band4	1.4	1732.5	16QAM	1	LOW	18.95	Pass
Band4	1.4	1732.5	16QAM	1	MID	18.98	Pass
Band4	1.4	1732.5	16QAM	1	HIGH	18.89	Pass
Band4	1.4	1754.3	QPSK	6	LOW	18.8	Pass
Band4	1.4	1754.3	QPSK	3	LOW	19.81	Pass
Band4	1.4	1754.3	QPSK	3	MID	19.79	Pass
Band4	1.4	1754.3	QPSK	3	HIGH	19.9	Pass
Band4	1.4	1754.3	QPSK	1	LOW	19.88	Pass
Band4	1.4	1754.3	QPSK	1	MID	19.94	Pass
Band4	1.4	1754.3	QPSK	1	HIGH	19.97	Pass
Band4	1.4	1754.3	16QAM	6	LOW	18.08	Pass
Band4	1.4	1754.3	16QAM	3	LOW	18.74	Pass
Band4	1.4	1754.3	16QAM	3	MID	18.74	Pass
Band4	1.4	1754.3	16QAM	3	HIGH	18.64	Pass
Band4	1.4	1754.3	16QAM	1	LOW	18.87	Pass
Band4	1.4	1754.3	16QAM	1	MID	18.79	Pass
Band4	1.4	1754.3	16QAM	1	HIGH	18.84	Pass
Band4	3	1711.5	QPSK	15	LOW	18.63	Pass
Band4	3	1711.5	QPSK	8	LOW	18.66	Pass
Band4	3	1711.5	QPSK	8	MID	18.66	Pass

Band4	3	1711.5	QPSK	8	HIGH	18.59	Pass
Band4	3	1711.5	QPSK	1	LOW	19.57	Pass
Band4	3	1711.5	QPSK	1	MID	19.6	Pass
Band4	3	1711.5	QPSK	1	HIGH	19.53	Pass
Band4	3	1711.5	16QAM	15	LOW	17.94	Pass
Band4	3	1711.5	16QAM	8	LOW	18.14	Pass
Band4	3	1711.5	16QAM	8	MID	18.03	Pass
Band4	3	1711.5	16QAM	8	HIGH	18.06	Pass
Band4	3	1711.5	16QAM	1	LOW	19.23	Pass
Band4	3	1711.5	16QAM	1	MID	19.28	Pass
Band4	3	1711.5	16QAM	1	HIGH	19.16	Pass
Band4	3	1732.5	QPSK	15	LOW	18.54	Pass
Band4	3	1732.5	QPSK	8	LOW	18.6	Pass
Band4	3	1732.5	QPSK	8	MID	18.51	Pass
Band4	3	1732.5	QPSK	8	HIGH	18.53	Pass
Band4	3	1732.5	QPSK	1	LOW	19.67	Pass
Band4	3	1732.5	QPSK	1	MID	19.67	Pass
Band4	3	1732.5	QPSK	1	HIGH	19.77	Pass
Band4	3	1732.5	16QAM	15	LOW	17.75	Pass
Band4	3	1732.5	16QAM	8	LOW	17.8	Pass
Band4	3	1732.5	16QAM	8	MID	17.83	Pass
Band4	3	1732.5	16QAM	8	HIGH	17.8	Pass
Band4	3	1732.5	16QAM	1	LOW	19.39	Pass
Band4	3	1732.5	16QAM	1	MID	19.42	Pass
Band4	3	1732.5	16QAM	1	HIGH	19.36	Pass
Band4	3	1753.5	QPSK	15	LOW	18.79	Pass
Band4	3	1753.5	QPSK	8	LOW	18.97	Pass
Band4	3	1753.5	QPSK	8	MID	18.85	Pass
Band4	3	1753.5	QPSK	8	HIGH	18.76	Pass
Band4	3	1753.5	QPSK	1	LOW	19.98	Pass
Band4	3	1753.5	QPSK	1	MID	19.98	Pass
Band4	3	1753.5	QPSK	1	HIGH	20.16	Pass
Band4	3	1753.5	16QAM	15	LOW	18.02	Pass
Band4	3	1753.5	16QAM	8	LOW	18.2	Pass
Band4	3	1753.5	16QAM	8	MID	18.08	Pass
Band4	3	1753.5	16QAM	8	HIGH	18.17	Pass
Band4	3	1753.5	16QAM	1	LOW	19.08	Pass
Band4	3	1753.5	16QAM	1	MID	19.08	Pass
Band4	3	1753.5	16QAM	1	HIGH	19.19	Pass
Band4	5	1712.5	QPSK	25	LOW	18.64	Pass
Band4	5	1712.5	QPSK	12	LOW	18.54	Pass
Band4	5	1712.5	QPSK	12	MID	18.53	Pass
Band4	5	1712.5	QPSK	12	HIGH	18.63	Pass
Band4	5	1712.5	QPSK	1	LOW	19.71	Pass
Band4	5	1712.5	QPSK	1	MID	19.77	Pass
Band4	5	1712.5	QPSK	1	HIGH	19.6	Pass

Band4	5	1712.5	16QAM	25	LOW	17.79	Pass
Band4	5	1712.5	16QAM	12	LOW	17.86	Pass
Band4	5	1712.5	16QAM	12	MID	17.86	Pass
Band4	5	1712.5	16QAM	12	HIGH	17.74	Pass
Band4	5	1712.5	16QAM	1	LOW	18.12	Pass
Band4	5	1712.5	16QAM	1	MID	18.01	Pass
Band4	5	1712.5	16QAM	1	HIGH	17.86	Pass
Band4	5	1732.5	QPSK	25	LOW	18.54	Pass
Band4	5	1732.5	QPSK	12	LOW	18.48	Pass
Band4	5	1732.5	QPSK	12	MID	18.51	Pass
Band4	5	1732.5	QPSK	12	HIGH	18.63	Pass
Band4	5	1732.5	QPSK	1	LOW	19.85	Pass
Band4	5	1732.5	QPSK	1	MID	19.71	Pass
Band4	5	1732.5	QPSK	1	HIGH	19.77	Pass
Band4	5	1732.5	16QAM	25	LOW	17.62	Pass
Band4	5	1732.5	16QAM	12	LOW	17.59	Pass
Band4	5	1732.5	16QAM	12	MID	17.63	Pass
Band4	5	1732.5	16QAM	12	HIGH	17.57	Pass
Band4	5	1732.5	16QAM	1	LOW	18.68	Pass
Band4	5	1732.5	16QAM	1	MID	18.68	Pass
Band4	5	1732.5	16QAM	1	HIGH	18.7	Pass
Band4	5	1752.5	QPSK	25	LOW	18.8	Pass
Band4	5	1752.5	QPSK	12	LOW	18.76	Pass
Band4	5	1752.5	QPSK	12	MID	18.74	Pass
Band4	5	1752.5	QPSK	12	HIGH	18.86	Pass
Band4	5	1752.5	QPSK	1	LOW	19.71	Pass
Band4	5	1752.5	QPSK	1	MID	19.7	Pass
Band4	5	1752.5	QPSK	1	HIGH	19.74	Pass
Band4	5	1752.5	16QAM	25	LOW	17.76	Pass
Band4	5	1752.5	16QAM	12	LOW	17.69	Pass
Band4	5	1752.5	16QAM	12	MID	17.81	Pass
Band4	5	1752.5	16QAM	12	HIGH	17.85	Pass
Band4	5	1752.5	16QAM	1	LOW	18.42	Pass
Band4	5	1752.5	16QAM	1	MID	18.43	Pass
Band4	5	1752.5	16QAM	1	HIGH	18.4	Pass
Band4	10	1715	QPSK	50	LOW	18.64	Pass
Band4	10	1715	QPSK	25	LOW	18.58	Pass
Band4	10	1715	QPSK	25	MID	18.66	Pass
Band4	10	1715	QPSK	25	HIGH	18.63	Pass
Band4	10	1715	QPSK	1	LOW	19.49	Pass
Band4	10	1715	QPSK	1	MID	19.44	Pass
Band4	10	1715	QPSK	1	HIGH	19.61	Pass
Band4	10	1715	16QAM	50	LOW	17.78	Pass
Band4	10	1715	16QAM	25	LOW	17.71	Pass
Band4	10	1715	16QAM	25	MID	17.71	Pass
Band4	10	1715	16QAM	25	HIGH	17.72	Pass

Band4	10	1715	16QAM	1	LOW	19.06	Pass
Band4	10	1715	16QAM	1	MID	18.94	Pass
Band4	10	1715	16QAM	1	HIGH	18.99	Pass
Band4	10	1732.5	QPSK	50	LOW	18.52	Pass
Band4	10	1732.5	QPSK	25	LOW	18.51	Pass
Band4	10	1732.5	QPSK	25	MID	18.54	Pass
Band4	10	1732.5	QPSK	25	HIGH	18.58	Pass
Band4	10	1732.5	QPSK	1	LOW	19.86	Pass
Band4	10	1732.5	QPSK	1	MID	19.82	Pass
Band4	10	1732.5	QPSK	1	HIGH	19.82	Pass
Band4	10	1732.5	16QAM	50	LOW	17.82	Pass
Band4	10	1732.5	16QAM	25	LOW	17.76	Pass
Band4	10	1732.5	16QAM	25	MID	17.8	Pass
Band4	10	1732.5	16QAM	25	HIGH	17.73	Pass
Band4	10	1732.5	16QAM	1	LOW	19.4	Pass
Band4	10	1732.5	16QAM	1	MID	19.43	Pass
Band4	10	1732.5	16QAM	1	HIGH	19.42	Pass
Band4	10	1750	QPSK	50	LOW	18.76	Pass
Band4	10	1750	QPSK	25	LOW	18.72	Pass
Band4	10	1750	QPSK	25	MID	18.69	Pass
Band4	10	1750	QPSK	25	HIGH	18.84	Pass
Band4	10	1750	QPSK	1	LOW	19.79	Pass
Band4	10	1750	QPSK	1	MID	19.94	Pass
Band4	10	1750	QPSK	1	HIGH	20.05	Pass
Band4	10	1750	16QAM	50	LOW	17.85	Pass
Band4	10	1750	16QAM	25	LOW	17.98	Pass
Band4	10	1750	16QAM	25	MID	17.97	Pass
Band4	10	1750	16QAM	25	HIGH	18.06	Pass
Band4	10	1750	16QAM	1	LOW	18.51	Pass
Band4	10	1750	16QAM	1	MID	18.7	Pass
Band4	10	1750	16QAM	1	HIGH	18.69	Pass
Band4	15	1717.5	QPSK	75	LOW	18.6	Pass
Band4	15	1717.5	QPSK	38	LOW	18.69	Pass
Band4	15	1717.5	QPSK	38	MID	18.69	Pass
Band4	15	1717.5	QPSK	38	HIGH	18.7	Pass
Band4	15	1717.5	QPSK	1	LOW	19.59	Pass
Band4	15	1717.5	QPSK	1	MID	19.63	Pass
Band4	15	1717.5	QPSK	1	HIGH	19.74	Pass
Band4	15	1717.5	16QAM	75	LOW	17.73	Pass
Band4	15	1717.5	16QAM	38	LOW	17.65	Pass
Band4	15	1717.5	16QAM	38	MID	17.66	Pass
Band4	15	1717.5	16QAM	38	HIGH	17.66	Pass
Band4	15	1717.5	16QAM	1	LOW	19.22	Pass
Band4	15	1717.5	16QAM	1	MID	19.27	Pass
Band4	15	1717.5	16QAM	1	HIGH	19.21	Pass
Band4	15	1732.5	QPSK	75	LOW	18.58	Pass

Band4	15	1732.5	QPSK	38	LOW	18.56	Pass
Band4	15	1732.5	QPSK	38	MID	18.56	Pass
Band4	15	1732.5	QPSK	38	HIGH	18.57	Pass
Band4	15	1732.5	QPSK	1	LOW	19.77	Pass
Band4	15	1732.5	QPSK	1	MID	19.82	Pass
Band4	15	1732.5	QPSK	1	HIGH	19.84	Pass
Band4	15	1732.5	16QAM	75	LOW	17.77	Pass
Band4	15	1732.5	16QAM	38	LOW	17.66	Pass
Band4	15	1732.5	16QAM	38	MID	17.68	Pass
Band4	15	1732.5	16QAM	38	HIGH	17.7	Pass
Band4	15	1732.5	16QAM	1	LOW	18.88	Pass
Band4	15	1732.5	16QAM	1	MID	18.96	Pass
Band4	15	1732.5	16QAM	1	HIGH	18.93	Pass
Band4	15	1747.5	QPSK	75	LOW	18.64	Pass
Band4	15	1747.5	QPSK	38	LOW	18.75	Pass
Band4	15	1747.5	QPSK	38	MID	18.74	Pass
Band4	15	1747.5	QPSK	38	HIGH	18.73	Pass
Band4	15	1747.5	QPSK	1	LOW	19.7	Pass
Band4	15	1747.5	QPSK	1	MID	19.74	Pass
Band4	15	1747.5	QPSK	1	HIGH	19.91	Pass
Band4	15	1747.5	16QAM	75	LOW	17.88	Pass
Band4	15	1747.5	16QAM	38	LOW	17.87	Pass
Band4	15	1747.5	16QAM	38	MID	17.87	Pass
Band4	15	1747.5	16QAM	38	HIGH	17.88	Pass
Band4	15	1747.5	16QAM	1	LOW	19.32	Pass
Band4	15	1747.5	16QAM	1	MID	19.3	Pass
Band4	15	1747.5	16QAM	1	HIGH	19.35	Pass
Band4	20	1720	QPSK	100	LOW	18.52	Pass
Band4	20	1720	QPSK	50	LOW	18.52	Pass
Band4	20	1720	QPSK	50	MID	18.62	Pass
Band4	20	1720	QPSK	50	HIGH	18.69	Pass
Band4	20	1720	QPSK	1	LOW	19.81	Pass
Band4	20	1720	QPSK	1	MID	19.78	Pass
Band4	20	1720	QPSK	1	HIGH	19.92	Pass
Band4	20	1720	16QAM	100	LOW	17.94	Pass
Band4	20	1720	16QAM	50	LOW	17.83	Pass
Band4	20	1720	16QAM	50	MID	17.82	Pass
Band4	20	1720	16QAM	50	HIGH	17.75	Pass
Band4	20	1720	16QAM	1	LOW	19	Pass
Band4	20	1720	16QAM	1	MID	19.02	Pass
Band4	20	1720	16QAM	1	HIGH	18.95	Pass
Band4	20	1732.5	QPSK	100	LOW	18.66	Pass
Band4	20	1732.5	QPSK	50	LOW	18.67	Pass
Band4	20	1732.5	QPSK	50	MID	18.7	Pass
Band4	20	1732.5	QPSK	50	HIGH	18.63	Pass
Band4	20	1732.5	QPSK	1	LOW	19.88	Pass

Band4	20	1732.5	QPSK	1	MID	19.99	Pass
Band4	20	1732.5	QPSK	1	HIGH	19.79	Pass
Band4	20	1732.5	16QAM	100	LOW	17.73	Pass
Band4	20	1732.5	16QAM	50	LOW	17.76	Pass
Band4	20	1732.5	16QAM	50	MID	17.69	Pass
Band4	20	1732.5	16QAM	50	HIGH	17.76	Pass
Band4	20	1732.5	16QAM	1	LOW	18.85	Pass
Band4	20	1732.5	16QAM	1	MID	18.72	Pass
Band4	20	1732.5	16QAM	1	HIGH	18.85	Pass
Band4	20	1745	QPSK	100	LOW	18.61	Pass
Band4	20	1745	QPSK	50	LOW	18.75	Pass
Band4	20	1745	QPSK	50	MID	18.73	Pass
Band4	20	1745	QPSK	50	HIGH	18.8	Pass
Band4	20	1745	QPSK	1	LOW	19.79	Pass
Band4	20	1745	QPSK	1	MID	19.88	Pass
Band4	20	1745	QPSK	1	HIGH	20	Pass
Band4	20	1745	16QAM	100	LOW	17.87	Pass
Band4	20	1745	16QAM	50	LOW	17.87	Pass
Band4	20	1745	16QAM	50	MID	17.86	Pass
Band4	20	1745	16QAM	50	HIGH	17.91	Pass
Band4	20	1745	16QAM	1	LOW	19.27	Pass
Band4	20	1745	16QAM	1	MID	19.49	Pass
Band4	20	1745	16QAM	1	HIGH	19.63	Pass

Band	Bandwidth(MHz)	UL Frequency(MHz)	Modulation	RB Size	RB Offset	Power (dBm)	Conclusion
Band7	5	2502.5	QPSK	25	LOW	19.81	Pass
Band7	5	2502.5	QPSK	12	LOW	19.89	Pass
Band7	5	2502.5	QPSK	12	MID	19.88	Pass
Band7	5	2502.5	QPSK	12	HIGH	19.83	Pass
Band7	5	2502.5	QPSK	1	LOW	20.85	Pass
Band7	5	2502.5	QPSK	1	MID	20.86	Pass
Band7	5	2502.5	QPSK	1	HIGH	20.89	Pass
Band7	5	2502.5	16QAM	25	LOW	19.18	Pass
Band7	5	2502.5	16QAM	12	LOW	18.81	Pass
Band7	5	2502.5	16QAM	12	MID	18.82	Pass
Band7	5	2502.5	16QAM	12	HIGH	19.15	Pass
Band7	5	2502.5	16QAM	1	LOW	19.13	Pass
Band7	5	2502.5	16QAM	1	MID	19.17	Pass
Band7	5	2502.5	16QAM	1	HIGH	19.1	Pass
Band7	5	2535	QPSK	25	LOW	19.41	Pass
Band7	5	2535	QPSK	12	LOW	19.38	Pass
Band7	5	2535	QPSK	12	MID	19.53	Pass
Band7	5	2535	QPSK	12	HIGH	19.67	Pass
Band7	5	2535	QPSK	1	LOW	20.43	Pass
Band7	5	2535	QPSK	1	MID	20.48	Pass
Band7	5	2535	QPSK	1	HIGH	20.52	Pass
Band7	5	2535	16QAM	25	LOW	18.9	Pass
Band7	5	2535	16QAM	12	LOW	18.67	Pass
Band7	5	2535	16QAM	12	MID	18.69	Pass
Band7	5	2535	16QAM	12	HIGH	19.04	Pass
Band7	5	2535	16QAM	1	LOW	19.7	Pass
Band7	5	2535	16QAM	1	MID	19.7	Pass
Band7	5	2535	16QAM	1	HIGH	20.01	Pass
Band7	5	2567.5	QPSK	25	LOW	19.55	Pass
Band7	5	2567.5	QPSK	12	LOW	19.51	Pass
Band7	5	2567.5	QPSK	12	MID	19.66	Pass
Band7	5	2567.5	QPSK	12	HIGH	19.56	Pass
Band7	5	2567.5	QPSK	1	LOW	20.54	Pass
Band7	5	2567.5	QPSK	1	MID	20.54	Pass
Band7	5	2567.5	QPSK	1	HIGH	20.56	Pass
Band7	5	2567.5	16QAM	25	LOW	18.82	Pass
Band7	5	2567.5	16QAM	12	LOW	18.58	Pass
Band7	5	2567.5	16QAM	12	MID	18.41	Pass
Band7	5	2567.5	16QAM	12	HIGH	18.91	Pass
Band7	5	2567.5	16QAM	1	LOW	19.19	Pass
Band7	5	2567.5	16QAM	1	MID	19.02	Pass
Band7	5	2567.5	16QAM	1	HIGH	19.11	Pass
Band7	10	2505	QPSK	50	LOW	19.7	Pass
Band7	10	2505	QPSK	25	LOW	19.77	Pass
Band7	10	2505	QPSK	25	MID	19.76	Pass
Band7	10	2505	QPSK	25	HIGH	19.83	Pass

Band7	10	2505	QPSK	1	LOW	20.75	Pass
Band7	10	2505	QPSK	1	MID	20.74	Pass
Band7	10	2505	QPSK	1	HIGH	20.62	Pass
Band7	10	2505	16QAM	50	LOW	18.95	Pass
Band7	10	2505	16QAM	25	LOW	19.14	Pass
Band7	10	2505	16QAM	25	MID	19.23	Pass
Band7	10	2505	16QAM	25	HIGH	18.87	Pass
Band7	10	2505	16QAM	1	LOW	20.3	Pass
Band7	10	2505	16QAM	1	MID	20.3	Pass
Band7	10	2505	16QAM	1	HIGH	20.32	Pass
Band7	10	2535	QPSK	50	LOW	19.88	Pass
Band7	10	2535	QPSK	25	LOW	19.49	Pass
Band7	10	2535	QPSK	25	MID	19.47	Pass
Band7	10	2535	QPSK	25	HIGH	19.39	Pass
Band7	10	2535	QPSK	1	LOW	20.89	Pass
Band7	10	2535	QPSK	1	MID	20.67	Pass
Band7	10	2535	QPSK	1	HIGH	20.55	Pass
Band7	10	2535	16QAM	50	LOW	19.22	Pass
Band7	10	2535	16QAM	25	LOW	18.71	Pass
Band7	10	2535	16QAM	25	MID	18.73	Pass
Band7	10	2535	16QAM	25	HIGH	19.18	Pass
Band7	10	2535	16QAM	1	LOW	19.83	Pass
Band7	10	2535	16QAM	1	MID	19.81	Pass
Band7	10	2535	16QAM	1	HIGH	19.72	Pass
Band7	10	2565	QPSK	50	LOW	19.45	Pass
Band7	10	2565	QPSK	25	LOW	19.61	Pass
Band7	10	2565	QPSK	25	MID	19.61	Pass
Band7	10	2565	QPSK	25	HIGH	19.57	Pass
Band7	10	2565	QPSK	1	LOW	20.42	Pass
Band7	10	2565	QPSK	1	MID	20.61	Pass
Band7	10	2565	QPSK	1	HIGH	20.57	Pass
Band7	10	2565	16QAM	50	LOW	18.88	Pass
Band7	10	2565	16QAM	25	LOW	18.93	Pass
Band7	10	2565	16QAM	25	MID	19.12	Pass
Band7	10	2565	16QAM	25	HIGH	18.79	Pass
Band7	10	2565	16QAM	1	LOW	19.52	Pass
Band7	10	2565	16QAM	1	MID	19.52	Pass
Band7	10	2565	16QAM	1	HIGH	19.47	Pass
Band7	15	2507.5	QPSK	75	LOW	19.71	Pass
Band7	15	2507.5	QPSK	38	LOW	19.84	Pass
Band7	15	2507.5	QPSK	38	MID	19.84	Pass
Band7	15	2507.5	QPSK	38	HIGH	19.84	Pass
Band7	15	2507.5	QPSK	1	LOW	20.89	Pass
Band7	15	2507.5	QPSK	1	MID	20.83	Pass
Band7	15	2507.5	QPSK	1	HIGH	20.88	Pass
Band7	15	2507.5	16QAM	75	LOW	18.93	Pass
Band7	15	2507.5	16QAM	38	LOW	18.84	Pass

Band7	15	2507.5	16QAM	38	MID	18.85	Pass
Band7	15	2507.5	16QAM	38	HIGH	18.86	Pass
Band7	15	2507.5	16QAM	1	LOW	20.19	Pass
Band7	15	2507.5	16QAM	1	MID	20.33	Pass
Band7	15	2507.5	16QAM	1	HIGH	20.25	Pass
Band7	15	2535	QPSK	75	LOW	19.56	Pass
Band7	15	2535	QPSK	38	LOW	19.44	Pass
Band7	15	2535	QPSK	38	MID	19.78	Pass
Band7	15	2535	QPSK	38	HIGH	19.78	Pass
Band7	15	2535	QPSK	1	LOW	20.74	Pass
Band7	15	2535	QPSK	1	MID	20.61	Pass
Band7	15	2535	QPSK	1	HIGH	20.69	Pass
Band7	15	2535	16QAM	75	LOW	18.97	Pass
Band7	15	2535	16QAM	38	LOW	19.11	Pass
Band7	15	2535	16QAM	38	MID	19.12	Pass
Band7	15	2535	16QAM	38	HIGH	19.34	Pass
Band7	15	2535	16QAM	1	LOW	20.55	Pass
Band7	15	2535	16QAM	1	MID	20.49	Pass
Band7	15	2535	16QAM	1	HIGH	20.45	Pass
Band7	15	2562.5	QPSK	75	LOW	19.55	Pass
Band7	15	2562.5	QPSK	38	LOW	19.61	Pass
Band7	15	2562.5	QPSK	38	MID	19.61	Pass
Band7	15	2562.5	QPSK	38	HIGH	19.61	Pass
Band7	15	2562.5	QPSK	1	LOW	20.58	Pass
Band7	15	2562.5	QPSK	1	MID	20.57	Pass
Band7	15	2562.5	QPSK	1	HIGH	20.66	Pass
Band7	15	2562.5	16QAM	75	LOW	18.78	Pass
Band7	15	2562.5	16QAM	38	LOW	18.69	Pass
Band7	15	2562.5	16QAM	38	MID	18.74	Pass
Band7	15	2562.5	16QAM	38	HIGH	18.71	Pass
Band7	15	2562.5	16QAM	1	LOW	20.01	Pass
Band7	15	2562.5	16QAM	1	MID	20.03	Pass
Band7	15	2562.5	16QAM	1	HIGH	20.1	Pass
Band7	20	2510	QPSK	100	LOW	19.71	Pass
Band7	20	2510	QPSK	50	LOW	19.88	Pass
Band7	20	2510	QPSK	50	MID	19.88	Pass
Band7	20	2510	QPSK	50	HIGH	19.74	Pass
Band7	20	2510	QPSK	1	LOW	21.08	Pass
Band7	20	2510	QPSK	1	MID	20.95	Pass
Band7	20	2510	QPSK	1	HIGH	20.91	Pass
Band7	20	2510	16QAM	100	LOW	19.1	Pass
Band7	20	2510	16QAM	50	LOW	19.02	Pass
Band7	20	2510	16QAM	50	MID	19.02	Pass
Band7	20	2510	16QAM	50	HIGH	19.03	Pass
Band7	20	2510	16QAM	1	LOW	19.86	Pass
Band7	20	2510	16QAM	1	MID	19.92	Pass
Band7	20	2510	16QAM	1	HIGH	19.81	Pass

Band7	20	2535	QPSK	100	LOW	19.52	Pass
Band7	20	2535	QPSK	50	LOW	19.62	Pass
Band7	20	2535	QPSK	50	MID	19.58	Pass
Band7	20	2535	QPSK	50	HIGH	19.51	Pass
Band7	20	2535	QPSK	1	LOW	20.97	Pass
Band7	20	2535	QPSK	1	MID	20.84	Pass
Band7	20	2535	QPSK	1	HIGH	20.84	Pass
Band7	20	2535	16QAM	100	LOW	18.87	Pass
Band7	20	2535	16QAM	50	LOW	19.18	Pass
Band7	20	2535	16QAM	50	MID	19.18	Pass
Band7	20	2535	16QAM	50	HIGH	18.86	Pass
Band7	20	2535	16QAM	1	LOW	20.15	Pass
Band7	20	2535	16QAM	1	MID	20.05	Pass
Band7	20	2535	16QAM	1	HIGH	19.95	Pass
Band7	20	2560	QPSK	100	LOW	19.45	Pass
Band7	20	2560	QPSK	50	LOW	19.69	Pass
Band7	20	2560	QPSK	50	MID	19.6	Pass
Band7	20	2560	QPSK	50	HIGH	19.56	Pass
Band7	20	2560	QPSK	1	LOW	20.65	Pass
Band7	20	2560	QPSK	1	MID	21.09	Pass
Band7	20	2560	QPSK	1	HIGH	20.7	Pass
Band7	20	2560	16QAM	100	LOW	18.77	Pass
Band7	20	2560	16QAM	50	LOW	18.97	Pass
Band7	20	2560	16QAM	50	MID	18.68	Pass
Band7	20	2560	16QAM	50	HIGH	18.57	Pass
Band7	20	2560	16QAM	1	LOW	20.36	Pass
Band7	20	2560	16QAM	1	MID	20.34	Pass
Band7	20	2560	16QAM	1	HIGH	20.29	Pass

Band	Bandwidth(MHz)	UL Frequency(MHz)	Modulation	RB Size	RB Offset	Power (dBm)	Conclusion
Band17	5	706.5	QPSK	25	LOW	21.47	Pass
Band17	5	706.5	QPSK	12	LOW	21.56	Pass
Band17	5	706.5	QPSK	12	MID	21.67	Pass
Band17	5	706.5	QPSK	12	HIGH	21.45	Pass
Band17	5	706.5	QPSK	1	LOW	22.51	Pass
Band17	5	706.5	QPSK	1	MID	22.4	Pass
Band17	5	706.5	QPSK	1	HIGH	22.49	Pass
Band17	5	706.5	16QAM	25	LOW	20.72	Pass
Band17	5	706.5	16QAM	12	LOW	20.4	Pass
Band17	5	706.5	16QAM	12	MID	20.41	Pass
Band17	5	706.5	16QAM	12	HIGH	20.44	Pass
Band17	5	706.5	16QAM	1	LOW	20.73	Pass
Band17	5	706.5	16QAM	1	MID	20.92	Pass
Band17	5	706.5	16QAM	1	HIGH	20.78	Pass
Band17	5	710	QPSK	25	LOW	21.45	Pass
Band17	5	710	QPSK	12	LOW	21.39	Pass
Band17	5	710	QPSK	12	MID	21.39	Pass
Band17	5	710	QPSK	12	HIGH	21.45	Pass
Band17	5	710	QPSK	1	LOW	22.5	Pass
Band17	5	710	QPSK	1	MID	22.82	Pass
Band17	5	710	QPSK	1	HIGH	22.7	Pass
Band17	5	710	16QAM	25	LOW	20.85	Pass
Band17	5	710	16QAM	12	LOW	20.6	Pass
Band17	5	710	16QAM	12	MID	20.61	Pass
Band17	5	710	16QAM	12	HIGH	20.8	Pass
Band17	5	710	16QAM	1	LOW	21.32	Pass
Band17	5	710	16QAM	1	MID	21.71	Pass
Band17	5	710	16QAM	1	HIGH	21.36	Pass
Band17	5	713.5	QPSK	25	LOW	21.22	Pass
Band17	5	713.5	QPSK	12	LOW	21.45	Pass
Band17	5	713.5	QPSK	12	MID	21.45	Pass
Band17	5	713.5	QPSK	12	HIGH	21.46	Pass
Band17	5	713.5	QPSK	1	LOW	22.46	Pass
Band17	5	713.5	QPSK	1	MID	22.28	Pass
Band17	5	713.5	QPSK	1	HIGH	22.55	Pass
Band17	5	713.5	16QAM	25	LOW	20.78	Pass
Band17	5	713.5	16QAM	12	LOW	20.73	Pass
Band17	5	713.5	16QAM	12	MID	20.73	Pass
Band17	5	713.5	16QAM	12	HIGH	20.39	Pass
Band17	5	713.5	16QAM	1	LOW	20.94	Pass
Band17	5	713.5	16QAM	1	MID	20.88	Pass
Band17	5	713.5	16QAM	1	HIGH	21.1	Pass
Band17	10	709	QPSK	50	LOW	21.23	Pass
Band17	10	709	QPSK	25	LOW	21.52	Pass
Band17	10	709	QPSK	25	MID	21.6	Pass
Band17	10	709	QPSK	25	HIGH	21.52	Pass

Band17	10	709	QPSK	1	LOW	22.41	Pass
Band17	10	709	QPSK	1	MID	22.34	Pass
Band17	10	709	QPSK	1	HIGH	22.3	Pass
Band17	10	709	16QAM	50	LOW	20.72	Pass
Band17	10	709	16QAM	25	LOW	20.58	Pass
Band17	10	709	16QAM	25	MID	20.58	Pass
Band17	10	709	16QAM	25	HIGH	20.85	Pass
Band17	10	709	16QAM	1	LOW	21.53	Pass
Band17	10	709	16QAM	1	MID	21.59	Pass
Band17	10	709	16QAM	1	HIGH	21.48	Pass
Band17	10	710	QPSK	50	LOW	21.59	Pass
Band17	10	710	QPSK	25	LOW	21.41	Pass
Band17	10	710	QPSK	25	MID	21.44	Pass
Band17	10	710	QPSK	25	HIGH	21.44	Pass
Band17	10	710	QPSK	1	LOW	22.69	Pass
Band17	10	710	QPSK	1	MID	22.71	Pass
Band17	10	710	QPSK	1	HIGH	22.65	Pass
Band17	10	710	16QAM	50	LOW	20.97	Pass
Band17	10	710	16QAM	25	LOW	20.53	Pass
Band17	10	710	16QAM	25	MID	20.44	Pass
Band17	10	710	16QAM	25	HIGH	20.82	Pass
Band17	10	710	16QAM	1	LOW	22.05	Pass
Band17	10	710	16QAM	1	MID	22.23	Pass
Band17	10	710	16QAM	1	HIGH	22.13	Pass
Band17	10	711	QPSK	50	LOW	21.48	Pass
Band17	10	711	QPSK	25	LOW	21.54	Pass
Band17	10	711	QPSK	25	MID	21.44	Pass
Band17	10	711	QPSK	25	HIGH	21.39	Pass
Band17	10	711	QPSK	1	LOW	22.59	Pass
Band17	10	711	QPSK	1	MID	22.78	Pass
Band17	10	711	QPSK	1	HIGH	22.68	Pass
Band17	10	711	16QAM	50	LOW	20.79	Pass
Band17	10	711	16QAM	25	LOW	20.59	Pass
Band17	10	711	16QAM	25	MID	20.48	Pass
Band17	10	711	16QAM	25	HIGH	20.81	Pass
Band17	10	711	16QAM	1	LOW	21.19	Pass
Band17	10	711	16QAM	1	MID	21.31	Pass
Band17	10	711	16QAM	1	HIGH	21.08	Pass

10. Test Photos and Results

10.1 EUT Photos

Front side

Back side

Right Edge

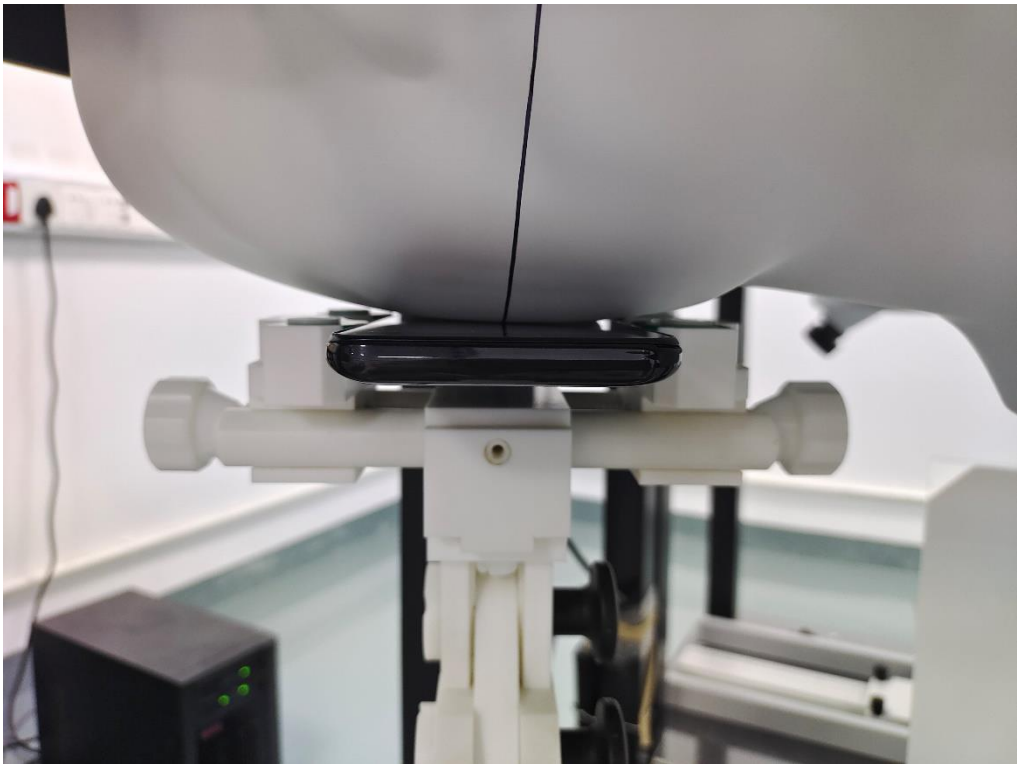
Left Edge

Top Edge

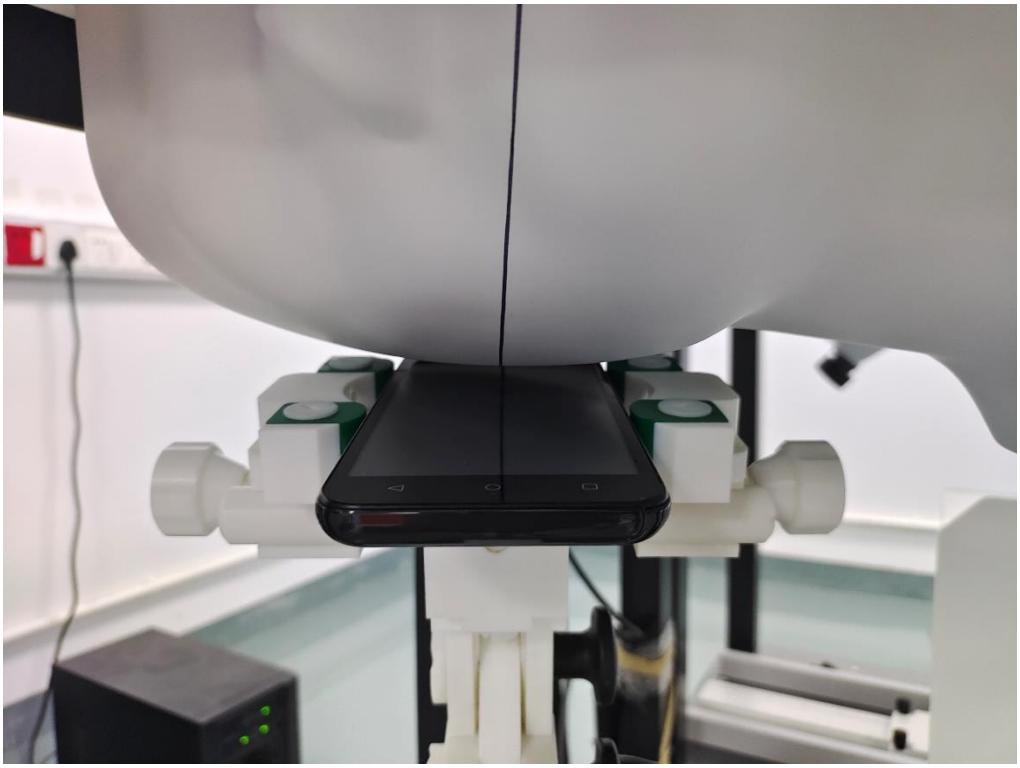
Bottom Edge

10.2 Setup Photos

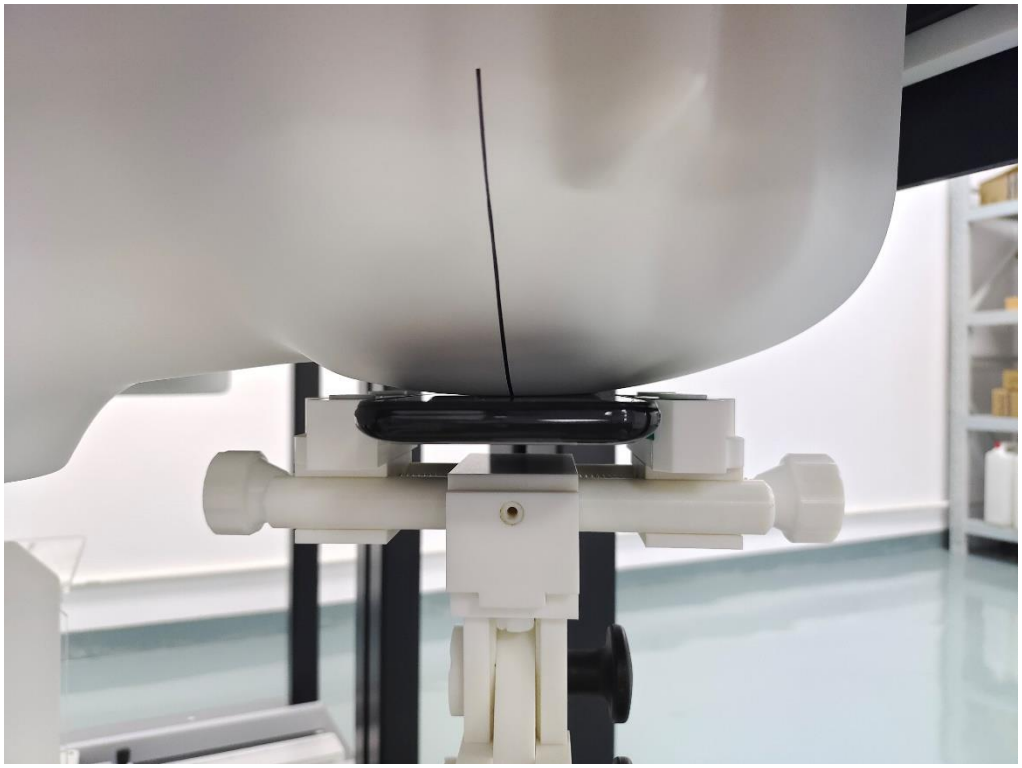
Right Touch



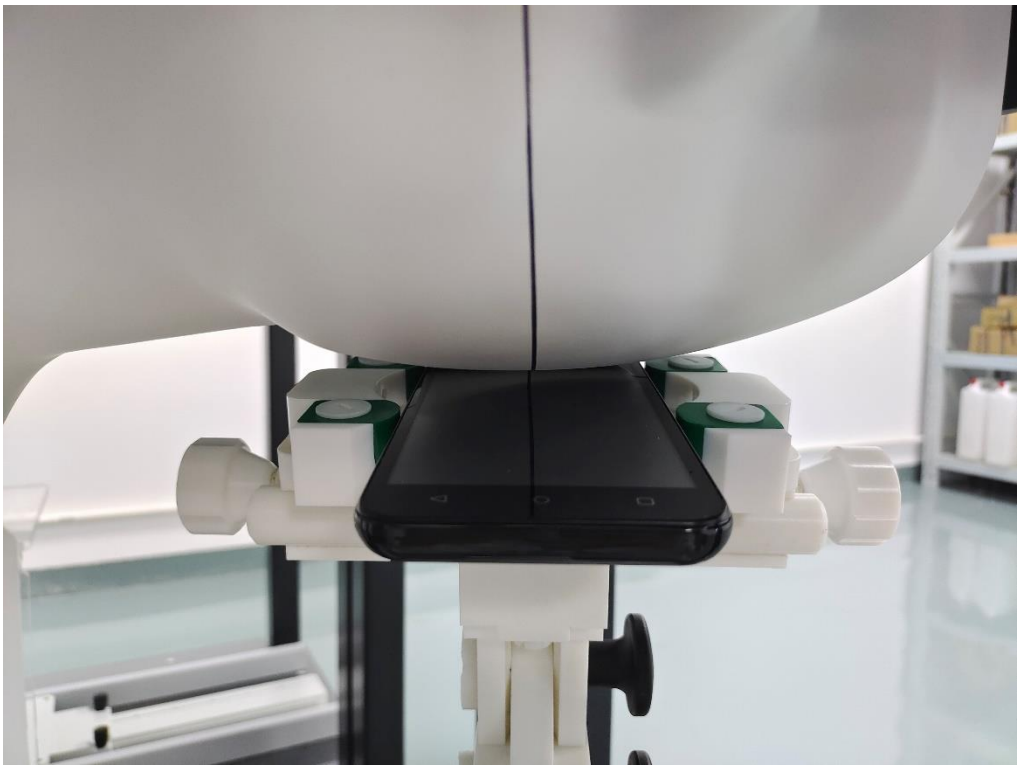
Right Tilt



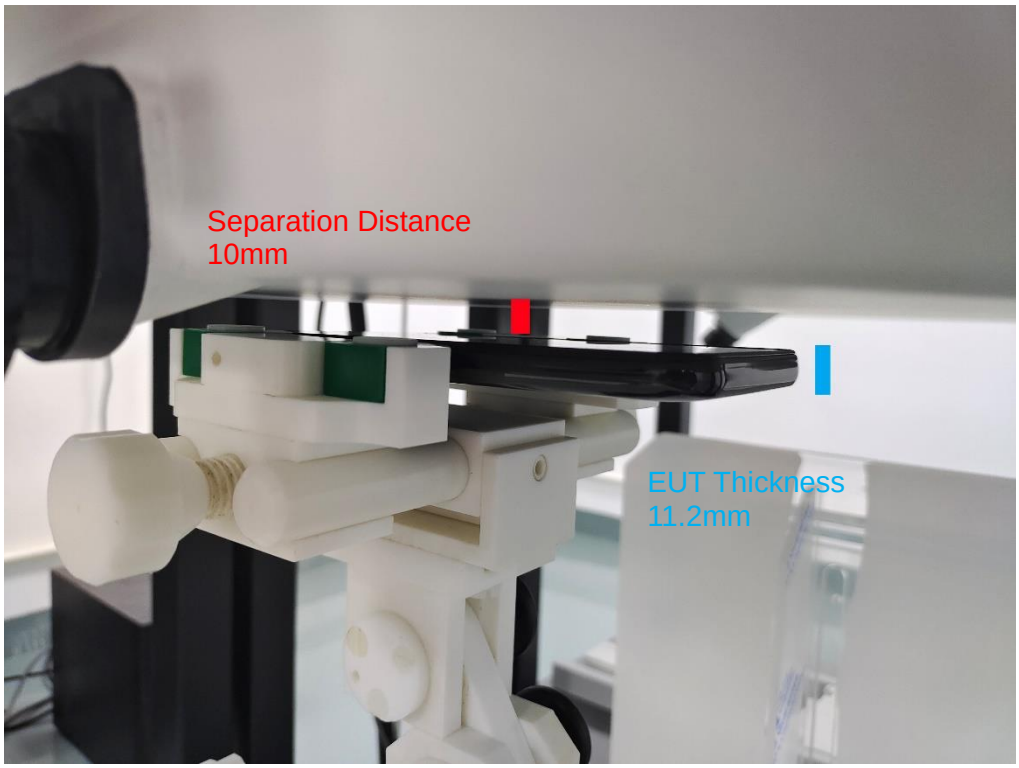
Left Touch



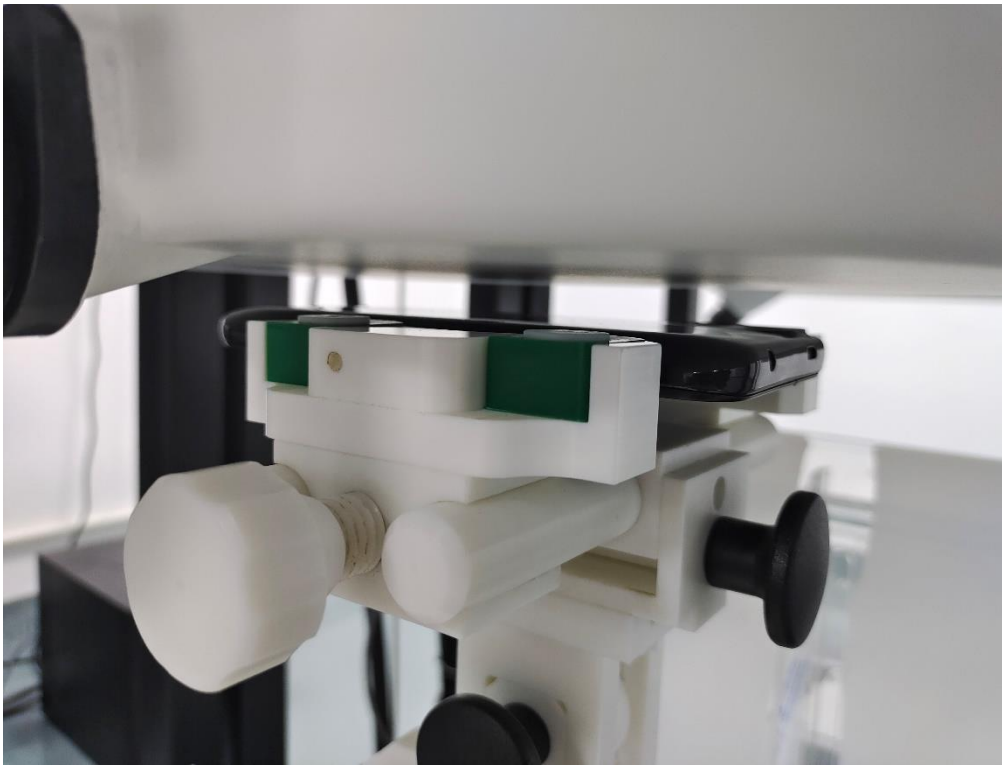
Left Tilt



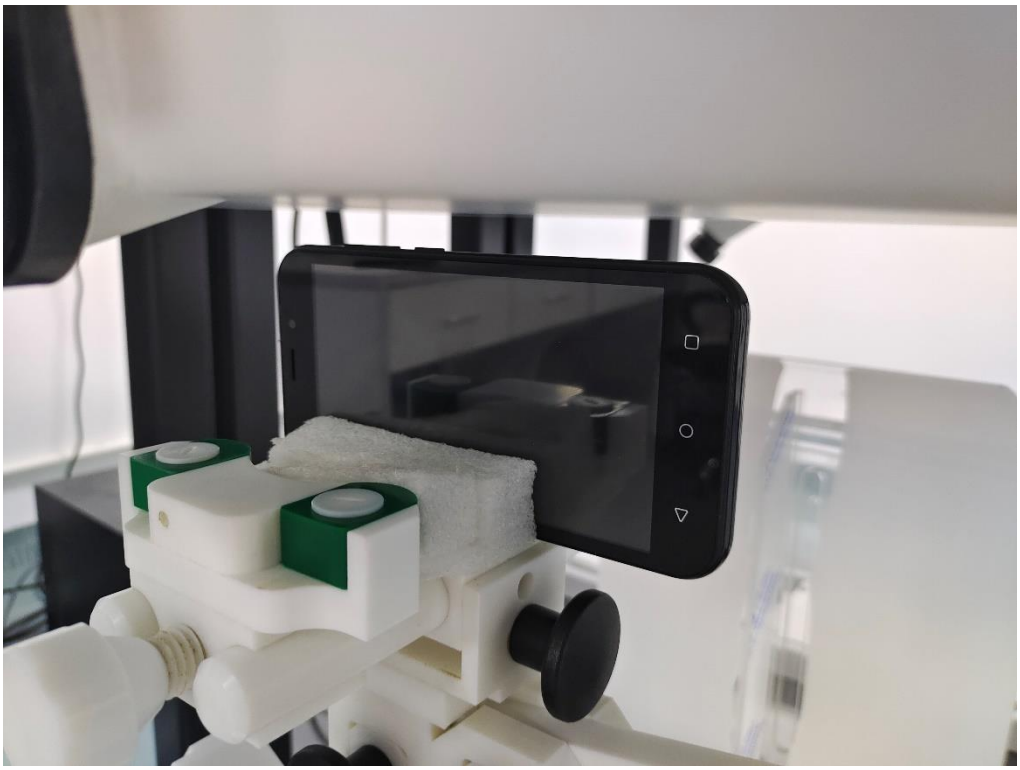
Body Front side



Body Back side

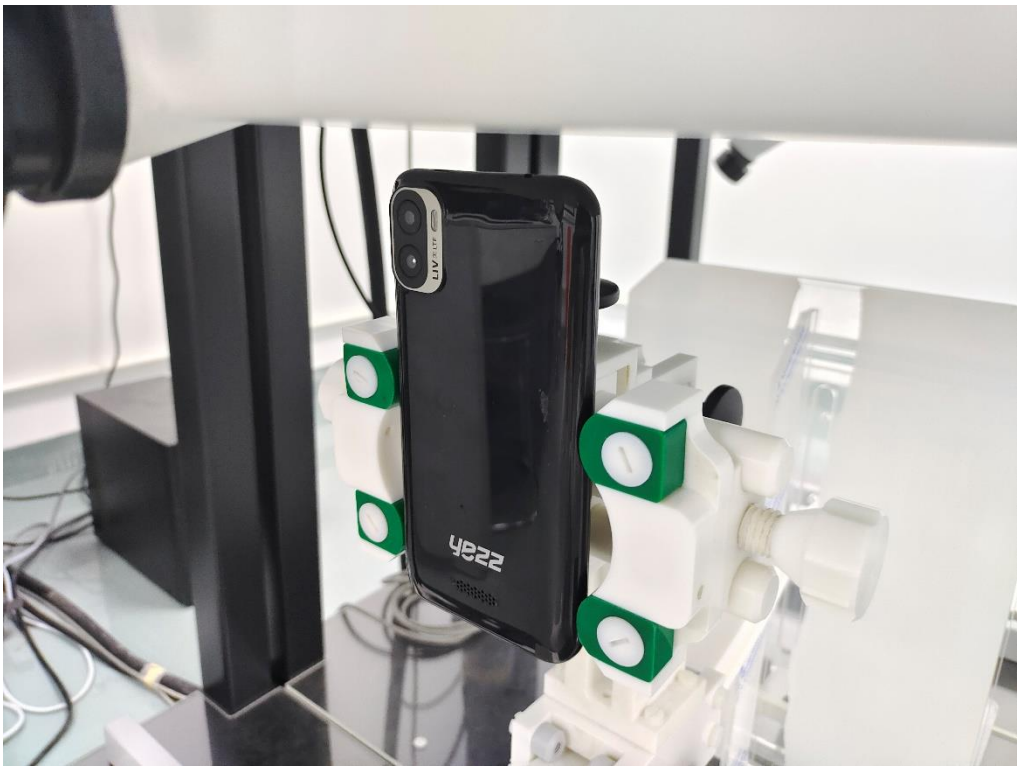


Body Right side

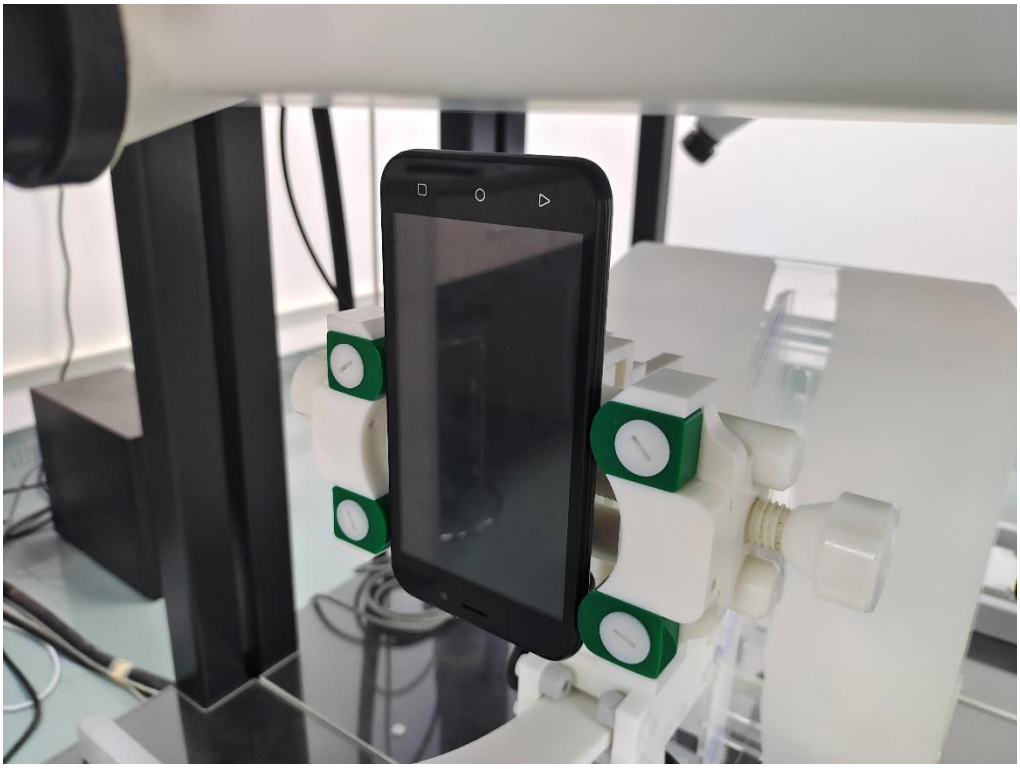


Body Left side

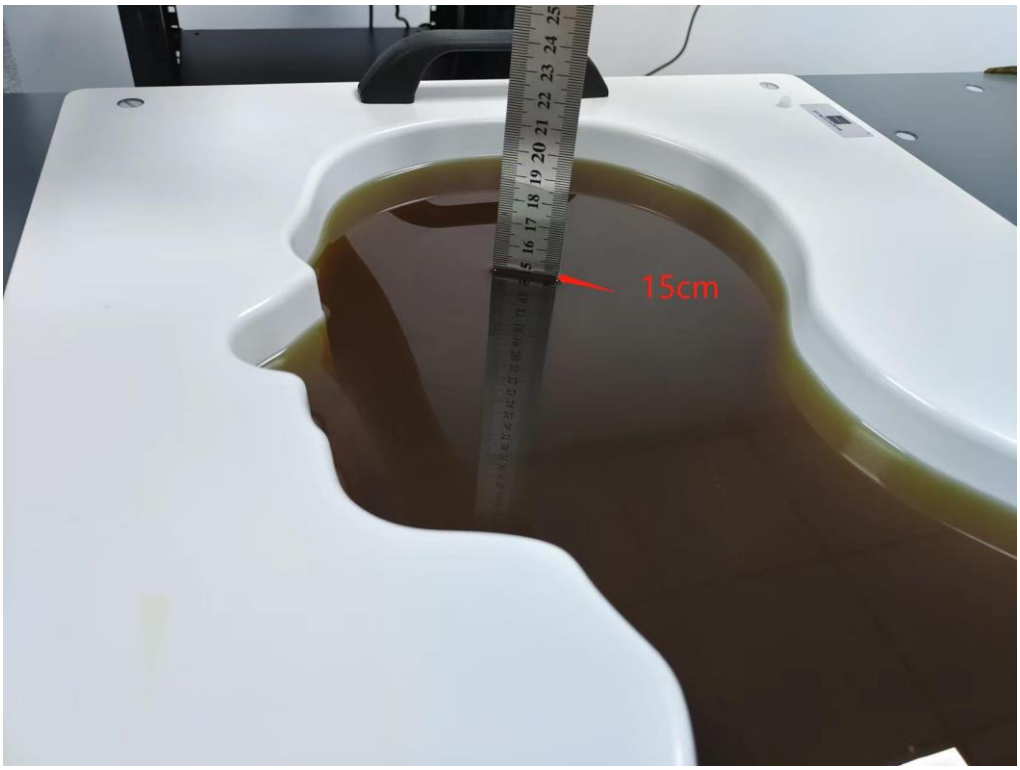
Top Edge



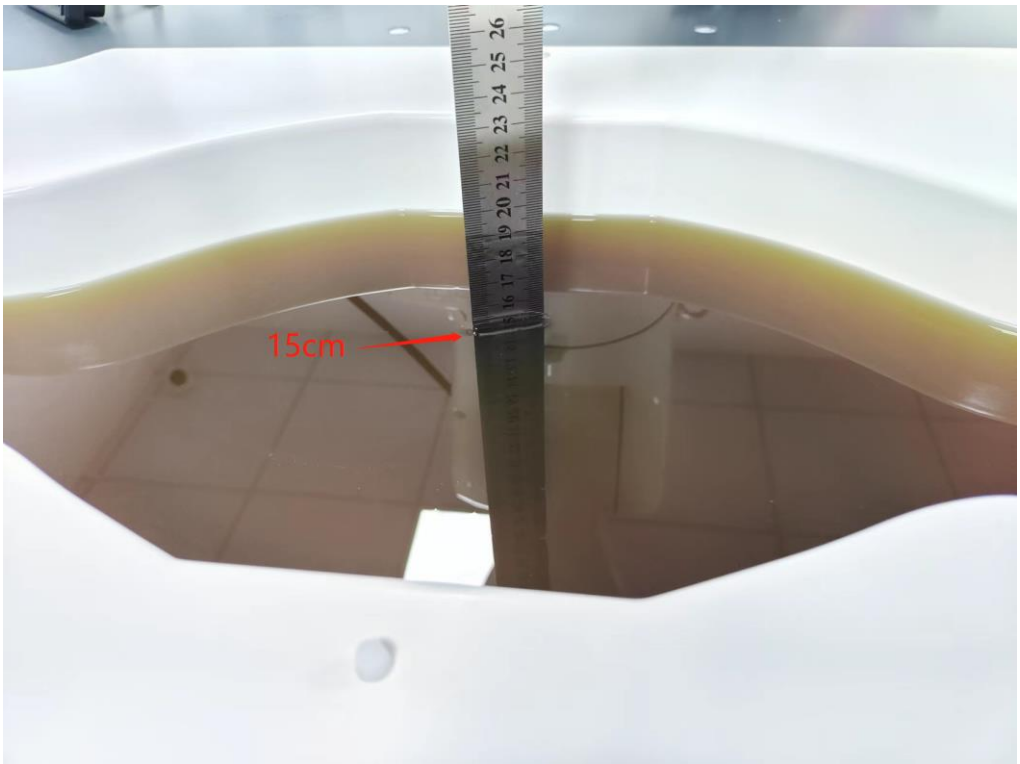
Bottom Edge



Liquid depth (15 cm)



Liquid depth (15 cm)



11. SAR Result Summary

HEAD SAR-GSM/WCDMA

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
GSM850	Voice	Right Cheek	848.8	0.349	3.43	31.83	32	0.363	/
		Right Tilt	848.8	0.266	0.94	31.83	32	0.277	/
		Left Cheek	824.2	0.371	-0.34	31.69	32	0.398	1
		Left Cheek	836.6	0.36	-3.68	31.72	32	0.384	/
		Left Cheek	848.8	0.333	4.88	31.83	32	0.346	/
		Left Tilt	848.8	0.273	-4.26	31.83	32	0.284	/
GSM1900	Voice	Right Cheek	1909.8	0.248	-2.19	28.57	29	0.274	/
		Right Tilt	1909.8	0.148	-4.63	28.57	29	0.163	/
		Left Cheek	1909.8	0.261	2.69	28.57	29	0.288	3
		Left Tilt	1909.8	0.171	1.67	28.57	29	0.189	/
WCDMA Band 2	RMC	Right Cheek	1907.6	0.446	1.33	22.71	23	0.477	/
		Right Tilt	1907.6	0.135	-1.33	22.71	23	0.144	/
		Left Cheek	1852.4	0.501	3.76	25.68	23	0.270	/
		Left Cheek	1880	0.642	-3.42	25.65	23	0.349	/
		Left Cheek	1907.6	0.578	-2.80	22.71	23	0.618	5
		Left Tilt	1907.6	0.206	1.16	22.71	23	0.220	/
WCDMA Band 5	RMC	Right Cheek	846.6	0.236	1.52	22.07	22.5	0.261	/
		Right Tilt	846.6	0.167	-1.59	22.07	22.5	0.184	/
		Left Cheek	846.6	0.270	-1.96	22.07	22.5	0.298	7
		Left Tilt	846.6	0.184	2.12	22.07	22.5	0.203	/

HEAD SAR-LTE

Band	Model	RB	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
LTE Band 2	20MHz QPSK	1	Right Cheek	1873.7	0.385	-3.21	22.13	23.1	0.481	/
		1	Right Tilt	1873.7	0.198	1.42	22.13	23.1	0.248	/
		1	Left Cheek	1873.7	0.668	3.76	22.13	23.1	0.835	9
		1	Left Tilt	1873.7	0.212	-2.81	22.13	23.1	0.265	/
		50	Right Cheek	1873.7	0.287	3.82	20.65	22	0.392	/
		50	Right Tilt	1873.7	0.139	0.62	20.65	22	0.190	/
		50	Left Cheek	1873.7	0.501	2.53	20.65	22	0.684	/
		50	Left Tilt	1873.7	0.166	-0.79	20.65	22	0.227	/
LTE Band 4	20MHz QPSK	1	Right Cheek	1713.7	0.556	1.88	19.92	20	0.566	/
		1	Right Cheek	1726.2	0.686	-3.77	19.99	20	0.688	/
		1	Right Cheek	1738.7	0.598	4.65	20	20	0.598	/
		1	Right Tilt	1726.2	0.327	-1.00	19.99	20	0.328	/
		1	Left Cheek	1726.2	0.704	-1.33	19.99	20	0.706	11
		1	Left Tilt	1726.2	0.238	1.71	19.99	20	0.239	/
		50	Right Cheek	1726.2	0.703	-1.86	18.7	19	0.753	/
		50	Right Tilt	1726.2	0.223	-4.15	18.7	19	0.239	/
		50	Left Cheek	1726.2	0.527	-1.04	18.7	19	0.565	/
		50	Left Tilt	1726.2	0.209	-2.36	18.7	19	0.224	/
LTE Band 7	20MHz QPSK	1	Right Cheek	2528.7	0.612	-0.82	20.97	21.1	0.631	/
		1	Right Tilt	2528.7	0.264	1.34	20.97	21.1	0.272	/
		1	Left Cheek	2528.7	0.678	-1.63	20.97	21.1	0.699	13
		1	Left Tilt	2528.7	0.25	4.85	20.97	21.1	0.258	/
		50	Right Cheek	2528.7	0.326	-1.55	19.62	20	0.356	/
		50	Right Tilt	2528.7	0.183	-0.96	19.62	20	0.200	/

		50	Left Cheek	2528.7	0.655	-2.51	19.62	20	0.715	/
		50	Left Tilt	2528.7	0.193	1.01	19.62	20	0.211	/
LTE Band 17	10MHz QPSK RB	1	Right Cheek	708.2	0.158	4.80	22.71	23	0.169	/
		1	Right Tilt	708.2	0.141	-3.20	22.71	23	0.151	/
		1	Left Cheek	708.2	0.234	2.08	22.71	23	0.250	15
		1	Left Tilt	708.2	0.129	-2.21	22.71	23	0.138	/
		25	Right Cheek	708.2	0.163	3.89	21.44	22	0.185	/
		25	Right Tilt	708.2	0.114	-0.10	21.44	22	0.130	/
		25	Left Cheek	708.2	0.215	4.65	21.44	22	0.245	/
		25	Left Tilt	708.2	0.165	3.05	21.44	22	0.188	/

HEAD SAR-BT/WIFI

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
2.4G WLAN	802.11b	Right Cheek	2462	0.052	-3.98	10.55	11	0.058	/
		Right Tilt	2462	0.03	-1.89	10.55	11	0.033	/
		Left Cheek	2462	0.096	-1.32	10.55	11	0.106	17
		Left Tilt	2462	0.061	-0.52	10.55	11	0.068	/
Bluetooth	8DPSK	Right Cheek	2441	0.066	-2.89	10.01	10.5	0.074	19
		Right Tilt	2441	0.042	1.28	10.01	10.5	0.047	/
		Left Cheek	2441	0.052	1.30	10.01	10.5	0.058	/
		Left Tilt	2441	0.043	-2.46	10.01	10.5	0.048	/

BODY SAR-GSM/WCDMA

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
GSM850	GPRS (GMSK, 2-Slot)	Front Side	824.2	0.288	3.37	29.69	30	0.309	/
		Back Side	824.2	0.416	-1.23	29.69	30	0.447	2
		Right Edge	824.2	0.159	-4.62	29.69	30	0.171	/
		Left Edge	824.2	0.207	4.54	29.69	30	0.222	/
		Bottom Edge	824.2	0.076	2.58	29.69	30	0.082	/
GSM1900	GPRS (GMSK, 3-Slot)	Front Side	1850.2	0.490	1.57	24.55	25	0.543	/
		Back Side	1850.2	0.294	3.36	24.55	25	0.326	/
		Right Edge	1850.2	0.088	-0.86	24.55	25	0.098	/
		Left Edge	1850.2	0.137	-1.76	24.55	25	0.152	/
		Bottom Edge	1850.2	0.482	-3.35	24.55	25	0.535	/
		Bottom Edge	1880	0.547	4.43	24.47	25	0.618	/
		Bottom Edge	1909.8	0.554	3.80	24.15	25	0.674	4
WCDMA Band 2	RMC	Front Side	1852.4	0.808	1.55	22.71	23	0.864	/
		Back Side	1852.4	0.511	-2.63	22.71	23	0.546	/
		Right Edge	1852.4	0.093	-3.44	22.71	23	0.099	/
		Left Edge	1852.4	0.209	0.96	22.71	23	0.223	/
		Bottom Edge	1852.4	0.715	3.58	22.56	23	0.791	/
		Bottom Edge	1880	0.887	3.33	22.64	23	0.964	6
		Bottom Edge	1907.6	0.843	-0.05	22.71	23	0.901	/
WCDMA Band 5	RMC	Front Side	836.6	0.215	1.20	22.07	22.5	0.237	/
		Back Side	836.6	0.303	3.44	22.07	22.5	0.335	8
		Right Edge	836.6	0.073	-3.08	22.07	22.5	0.081	/
		Left Edge	836.6	0.106	-4.16	22.07	22.5	0.117	/
		Bottom Edge	836.6	0.031	1.71	22.07	22.5	0.034	/

Band	Model	RB	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
LTE Band 2	20MHz QPSK	1	Front Side	1873.7	0.882	2.91	22.13	23.1	1.103	/
		1	Back Side	1873.7	0.617	3.68	22.13	23.1	0.771	/
		1	Right Edge	1873.7	0.116	-2.50	22.13	23.1	0.145	/
		1	Left Edge	1873.7	0.288	1.54	22.13	23.1	0.360	/
		1	Bottom Edge	1853.7	0.936	-2.76	23.06	23.1	0.945	/
		1	Bottom Edge	1873.7	0.975	-4.61	22.13	23.1	1.219	/
		1	Bottom Edge	1893.7	1.119	3.66	22.01	23.1	1.438	10
		50	Front Side	1873.7	0.592	-4.06	20.65	22	0.808	/
		50	Back Side	1873.7	0.506	4.58	20.65	22	0.690	/
		50	Right Edge	1873.7	0.094	2.49	20.65	22	0.128	/
		50	Left Edge	1873.7	0.131	-0.82	20.65	22	0.179	/
		50	Bottom Edge	1873.7	0.790	-1.73	20.65	22	1.078	/
LTE Band 4	20MHz QPSK	1	Front Side	1726.2	1.209	-4.36	19.99	20	1.212	12
		1	Back Side	1726.2	0.906	-1.23	19.99	20	0.908	/
		1	Right Edge	1726.2	0.164	2.12	19.99	20	0.164	/
		1	Left Edge	1726.2	0.539	1.72	19.99	20	0.540	/
		1	Bottom Edge	1726.2	0.800	4.20	19.99	20	0.802	/
		50	Front Side	1726.2	1.052	-2.26	18.7	19	1.127	/
		50	Back Side	1726.2	0.793	-1.29	18.7	19	0.850	/
		50	Right Edge	1726.2	0.138	-2.57	18.7	19	0.148	/
		50	Left Edge	1726.2	0.319	-3.72	18.7	19	0.342	/
		50	Bottom Edge	1726.2	0.575	-1.53	18.7	19	0.616	/
LTE Band 7	20MHz QPSK	1	Front Side	2528.7	0.806	-0.36	20.97	21.1	0.830	/
		1	Back Side	2503.7	1.313	1.45	21.08	21.1	1.319	/
		1	Back Side	2528.7	1.375	-1.83	20.97	21.1	1.417	14
		1	Back Side	2553.7	1.088	-4.40	21.09	21.1	1.091	/
		1	Right Edge	2528.7	0.054	1.87	20.97	21.1	0.056	/
		1	Left Edge	2528.7	0.402	1.20	20.97	21.1	0.414	/
		1	Bottom Edge	2528.7	1.224	-3.43	20.97	21.1	1.261	/
		50	Front Side	2528.7	0.566	1.34	19.62	20	0.618	/
		50	Back Side	2528.7	1.249	-4.12	19.62	20	1.363	/
		50	Right Edge	2528.7	0.047	-2.27	19.62	20	0.051	/
		50	Left Edge	2528.7	0.381	-1.86	19.62	20	0.416	/
		50	Bottom Edge	2528.7	1.114	-2.79	19.62	20	1.216	/
LTE Band 17	10MHz QPSK	1	Front Side	708.2	0.268	2.36	22.71	23	0.287	/
		1	Back Side	708.2	0.339	-1.96	22.71	23	0.362	16
		1	Right Edge	708.2	0.081	0.27	22.71	23	0.087	/
		1	Left Edge	708.2	0.101	3.28	22.71	23	0.108	/
		1	Bottom Edge	708.2	0.062	2.73.	22.71	23	0.066	/
		25	Front Side	708.2	0.194	-1.73	21.44	22	0.221	/
		25	Back Side	708.2	0.300	-0.61	21.44	22	0.341	/
		25	Right Edge	708.2	0.081	1.92	21.44	22	0.092	/
		25	Left Edge	708.2	0.100	0.36	21.44	22	0.114	/
		25	Bottom Edge	708.2	0.051	-2.60	21.44	22	0.058	/

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
2.4G WLAN	802.11b	Front Side	2462	0.052	-3.10	10.55	11	0.058	18
		Back Side	2462	0.046	-2.48	10.55	11	0.051	/
		Right Edge	2462	0.033	-4.09	10.55	11	0.037	/
		Left Edge	2462	0.033	-3.04	10.55	11	0.037	/
		Bottom Edge	2462	0.032	4.62	10.55	11	0.035	/
Bluetooth	GFSK	Front Side	2441	0.025	-1.20	10.01	10.5	0.028	/
		Back Side	2441	0.021	3.17	10.01	10.5	0.024	/
		Right Edge	2441	0.030	1.50	10.01	10.5	0.034	20
		Left Edge	2441	0.029	-4.61	10.01	10.5	0.032	/
		Bottom Edge	2441	0.014	-4.89	10.01	10.5	0.016	/

Note:

1. Per KDB 447498 D04, 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

2. Per KDB 865664 D01, Repeated measurement is not required when the original highest measured SAR is <0.80 W/kg
3. Two SIM card slot can’t work at the same time.

11.3 Repeated SAR measurement

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Meas.Output Power(dBm)	Max.Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
WCDMA Band 2	HSDPA Subset-3	Bottom Edge	9400	0.871	-1.84	21.22	22.6	1.197	-
WCDMA Band 2	HSDPA Subset-3	Bottom Edge	9400	0.848	2.63	21.22	22.6	1.165	-

Band	BW (MHz)	Mod.	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Meas. Output Power(dBm)	Max. Turn-up Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
LTE Band 2	20MHz	QPSK	Left Cheek	18900	0.658	-0.51	22.13	23.1	0.823	-
LTE Band 2	20MHz	QPSK	Bottom Edge	19100	1.105	3.79	22.01	23.1	1.420	-
LTE Band 2	20MHz	QPSK	Bottom Edge	19100	1.106	-1.02	22.01	23.1	1.422	-
LTE Band 4	20MHz	QPSK	Front Side	20175	1.184	-2.11	19.99	20	1.187	-
LTE Band 4	20MHz	QPSK	Front Side	20175	1.130	-2.48	19.99	20	1.133	-
LTE Band 7	20MHz	QPSK	Back Side	21100	1.359	-0.35	20.97	21.1	1.400	-
LTE Band 7	20MHz	QPSK	Back Side	21100	1.328	1.72	20.97	21.1	1.368	-

Repeated SAR

Band	Mode	Test Position	Ch.	Original Measured SAR 1g(mW/g)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(mW/g)	2nd Repeated SAR 1g	Ratio
WCDMA Band 2	HSDPA Subset-3	Bottom Edge	9400	1.219	1.197	1.018	1.219	1.165	1.046

Band	BW (MHz)	Mod.	Test Position	Ch.	Original Measured SAR 1g(mW/g)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(mW/g)	2nd Repeated SAR 1g	Ratio
LTE Band 2	20MHz	QPSK	Left Cheek	18900	0.835	0.823	1.015	-	-	-
LTE Band 2	20MHz	QPSK	Bottom Edge	19100	1.438	1.420	1.012	1.438	1.422	1.011
LTE Band 4	20MHz	QPSK	Front Side	20175	1.212	1.187	1.021	1.212	1.133	1.070
LTE Band 7	20MHz	QPSK	Back Side	21100	1.417	1.400	1.012	1.417	1.368	1.036

Note:

1. Per KDB 447498 D04, 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

2.Per KDB 865664 D01, Repeated measurement is not required when the original highest measured SAR is <0.80 W/kg

Simultaneous Multi-band Transmission Evaluation:

Application Simultaneous Transmission information:

Position	Simultaneous State
Head	1. GSM + 2.4GHz WLAN
	2. GSM + Bluetooth
	3. WCDMA + 2.4GHz WLAN
	4. WCDMA + Bluetooth
	5. LTE + 2.4GHz WLAN
	6. LTE + Bluetooth
Body	1. GSM + 2.4GHz WLAN
	2. GSM + Bluetooth
	3. WCDMA + 2.4GHz WLAN
	4. WCDMA + Bluetooth
	5. LTE + 2.4GHz WLAN
	6. LTE + Bluetooth

NOTE：

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

2.For simultaneous transmission at head and body exposure position, 2 transmitters simultaneous transmission was the worst state.

3.If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.

4. KDB 447498 Appendix E, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$$SAR_{est} = 1.6 \cdot Pant / Pth \text{ [W/kg]}.$$

P_{ant} is maximum time-averaged power or effective radiated power (ERP), whichever is greater, and P_{th} is defined in Formula KDB 447498 (B.2).

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

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

Simultaneous Mode	Position	Mode	Max. 1-g SAR (W/kg)	1-g Sum SAR (W/kg)
GSM + 2.4G WLAN	Head	GSM	0.398	0.504
		2.4G WLAN	0.106	
	Body	GSM	0.674	0.732
		2.4G WLAN	0.058	
GSM + Bluetooth	Head	GSM	0.398	0.472
		Bluetooth	0.074	
	Body	GSM	0.674	0.708
		Bluetooth	0.034	
WCDMA + 2.4G WLAN	Head	WCDMA	0.618	0.724
		2.4G WLAN	0.106	
	Body	WCDMA	0.964	1.022
		2.4G WLAN	0.058	
WCDMA + Bluetooth	Head	WCDMA	0.618	0.692
		Bluetooth	0.074	
	Body	WCDMA	0.964	0.998
		Bluetooth	0.034	
LTE + 2.4G WLAN	Head	LTE	0.835	0.941
		2.4G WLAN	0.106	
	Body	LTE	1.438	1.496
		2.4G WLAN	0.058	
LTE + Bluetooth	Head	LTE	0.835	0.909
		Bluetooth	0.074	
	Body	LTE	1.438	1.472
		Bluetooth	0.034	

12. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
750MHz Dipole	MVG	DIP0G750	SN 06/22 DIP0G750-638	2022.02.11	2023.02.10
835MHz Dipole	MVG	DIP0G835	SN 06/22 DIP0G835-639	2022.02.11	2023.02.10
1800MHz Dipole	MVG	DIP1G800	SN 06/22 DIP1G800-640	2022.02.11	2023.02.10
1900MHz Dipole	MVG	DIP1G900	SN 06/22 DIP1G900-641	2022.02.11	2023.02.10
2450MHz Dipole	MVG	GIP2G450	SN 06/22 DIP2G450-645	2022.02.11	2023.02.10
2600MHz Dipole	MVG	DIP2G600	SN 06/22 DIP2G600-646	2022.02.11	2023.02.10
E-Field Probe	MVG	EPGO364	SN 04/22 EPGO364	2022.02.11	2023.02.10
Dielectric Probe Kit	MVG	OCPG 87	SN 06/22 OCPG87	2022.02.11	2023.02.10
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 holder	MVG	LSH 36	SN 06/22 LSH 38	N/A	N/A
Directional coupler	SHW	SHWDCP	202203280013	N/A	N/A
Network Analyzer	Agilent	E5071C	MY46418070	2022.03.28	2023.03.27
Multi Meter	Keithley	DMM6500	DMM6500	2022.05.05	2023.05.04
Signal Generator	Keithley	N5182B	MY59100717	2022.04.29	2023.04.28
Wireless Communication Test Set	R&S	CMW500	137737	2022.04.29	2023.04.28
Power Sensor	R&S	Z11	116184	2022.03.28	2023.03.27
Temperature hygrometer	N/A	ST-W2318	N/A	2022.05.05	2023.05.04
Thermograph	N/A	TP101	N/A	2022.05.05	2023.05.04

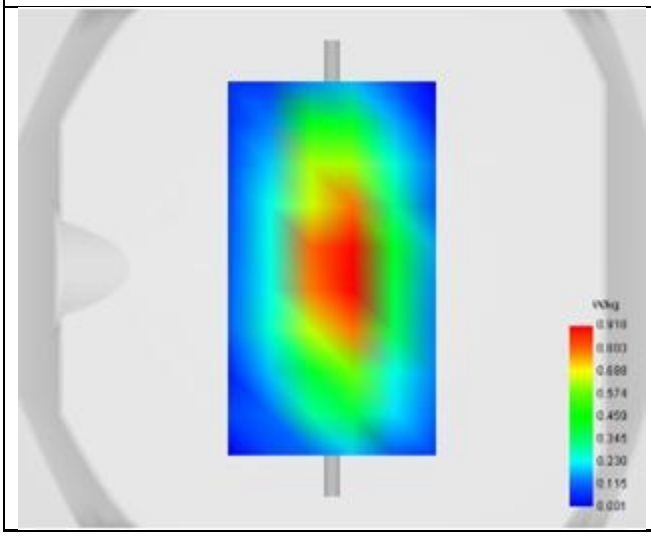
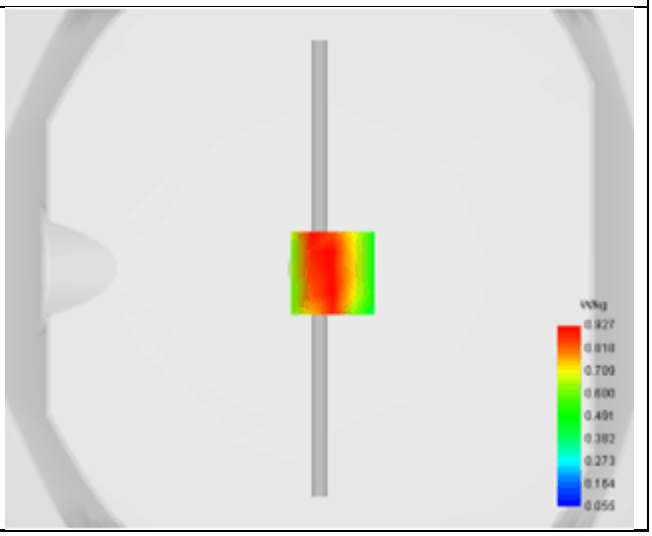
Appendix A. System Validation Plots

System Performance Check Data (750MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2022-11-10

Experimental conditions.

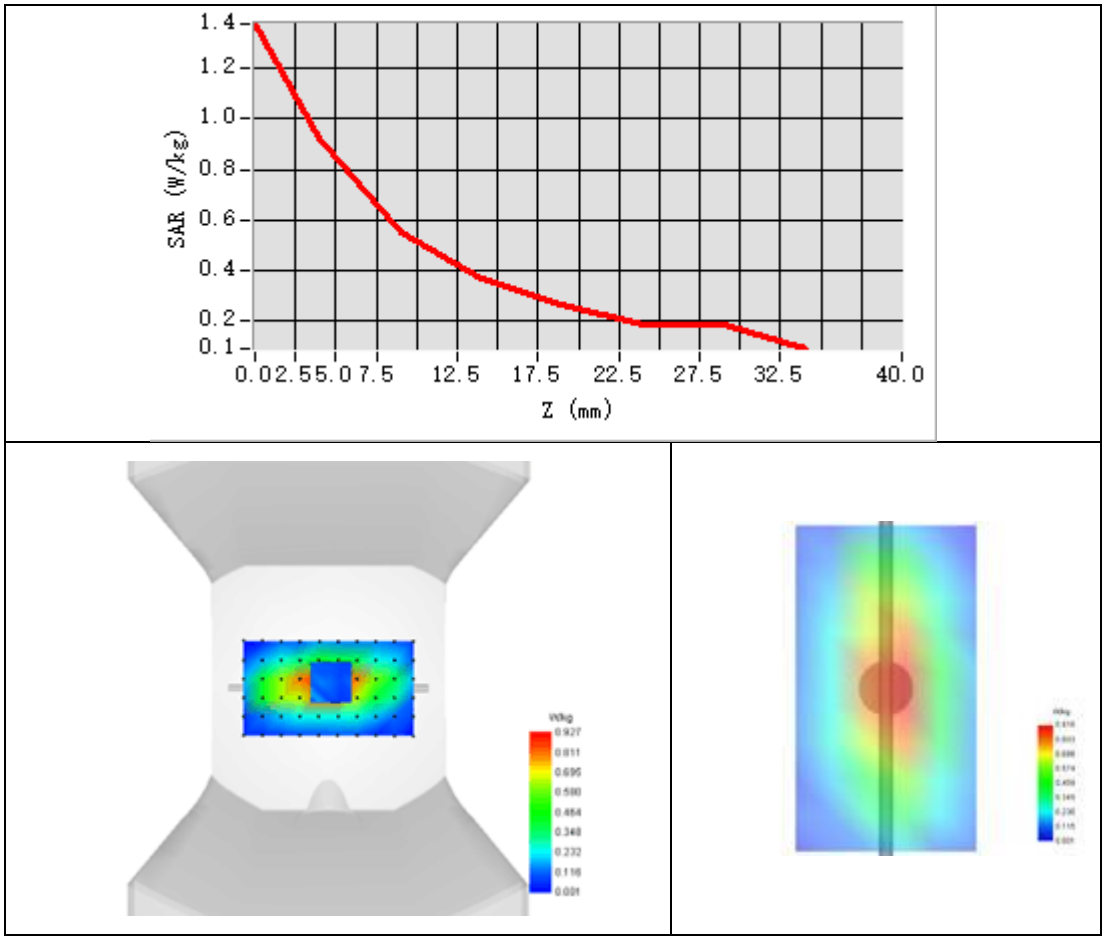
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW
Frequency (MHz)	750.000
Relative permittivity	42.578
Conductivity (S/m)	0.904
Probe	SN 04/22 EPGO364
ConvF	1.72
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-2.00 ; SAR Peak: 1.55 W/kg

SAR 10g (W/Kg)	0.561
SAR 1g (W/Kg)	0.838

Z Axis Scan

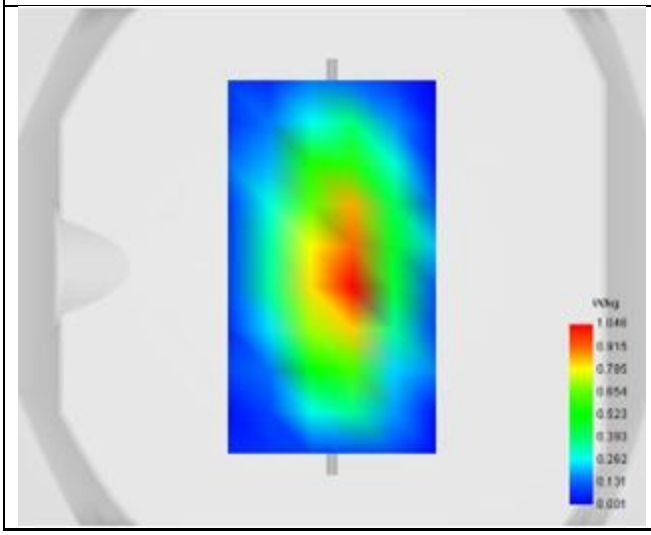
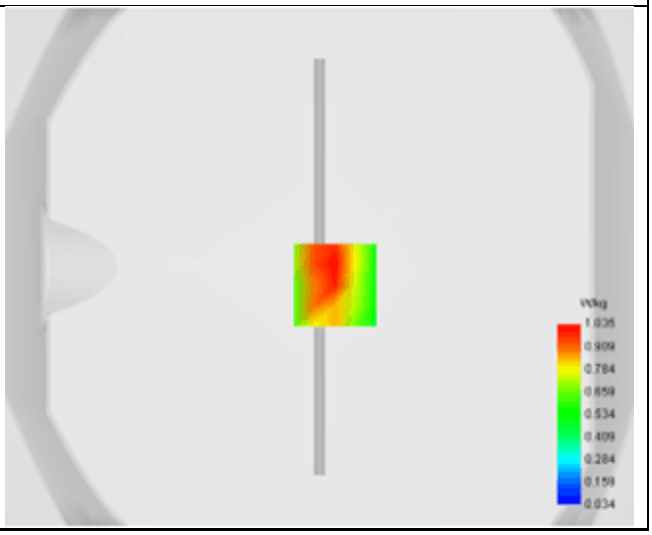

1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.1
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)

System Performance Check Data (835MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2022-11-03

Experimental conditions.

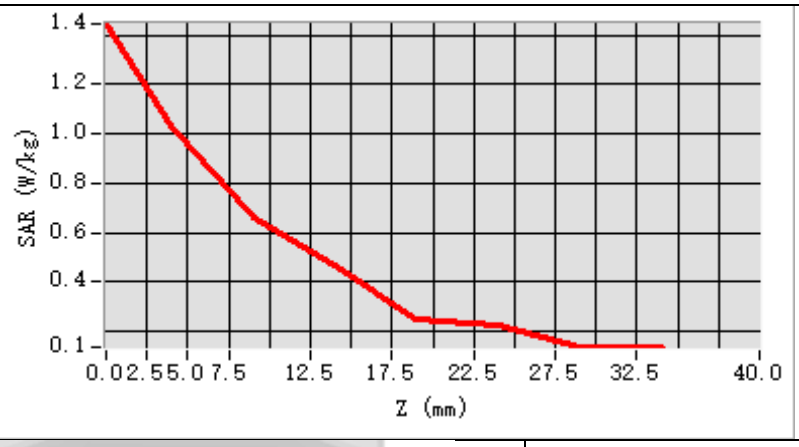
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW
Frequency (MHz)	835.000
Relative permittivity	43.056
Conductivity (S/m)	0.924
Probe	SN 04/22 EPGO364
ConvF	1.75
Crest factor:	1:1

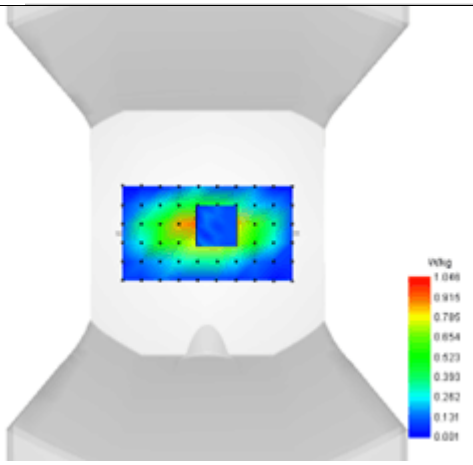
SURFACE SAR	VOLUME SAR
	

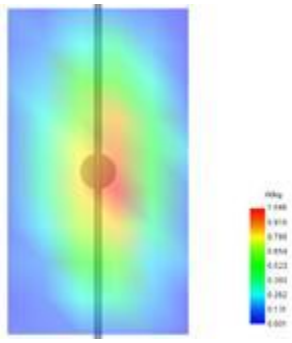
Maximum location: X=5.00, Y=5.00 ; SAR Peak: 1.45 W/kg

SAR 10g (W/Kg)	0.607
SAR 1g (W/Kg)	0.996

Z Axis Scan





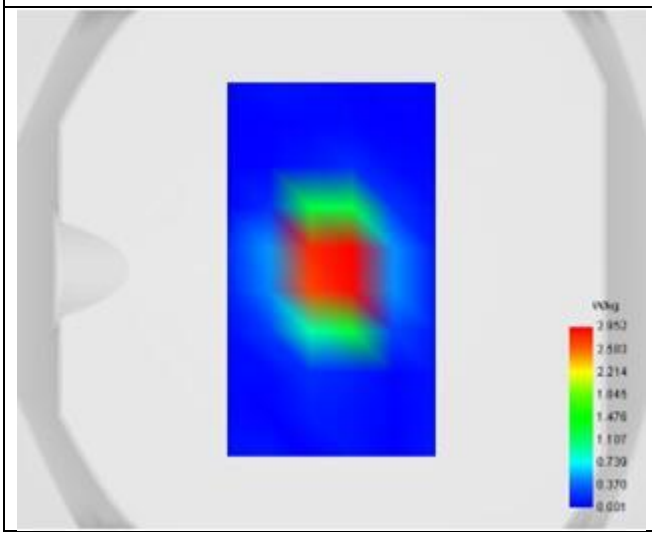
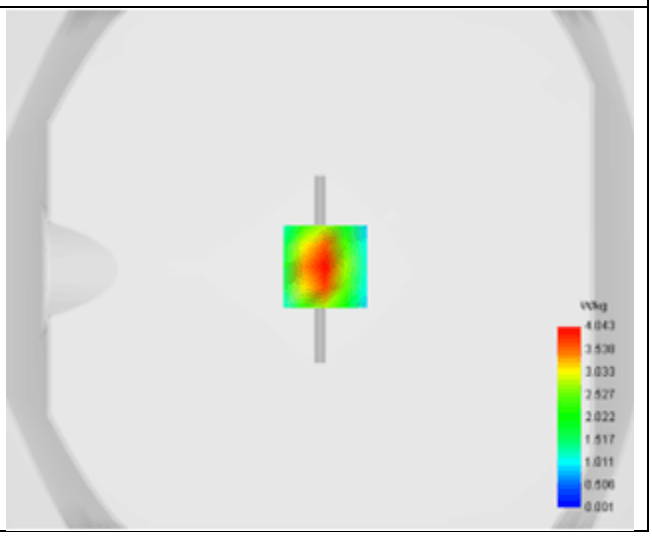


System Performance Check Data (1800MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement:2022-11-09

Experimental conditions.

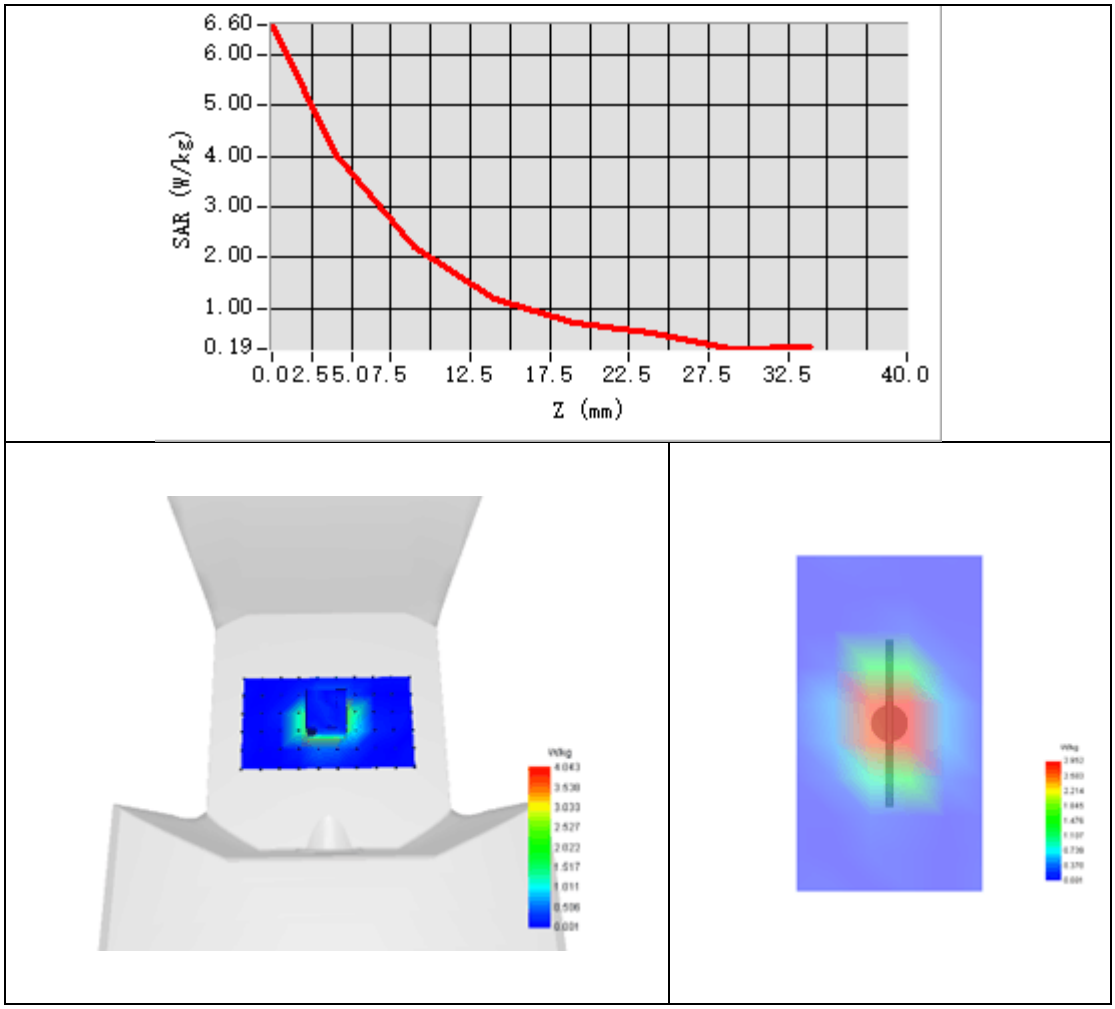
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW
Frequency (MHz)	1800.000
Relative permittivity	39.365
Conductivity (S/m)	1.427
Probe	SN 04/22 EPGO364
ConvF	2.00
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=3.00, Y=3.00 ; SAR Peak: 6.84 W/kg

SAR 10g (W/Kg)	1.947
SAR 1g (W/Kg)	3.917

Z Axis Scan

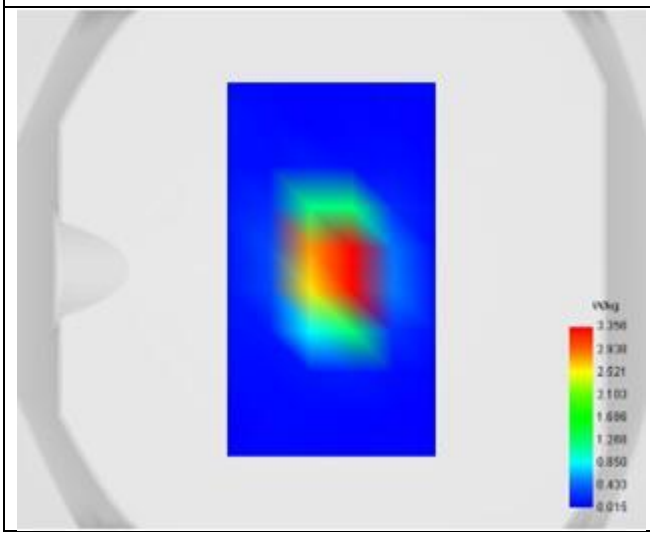
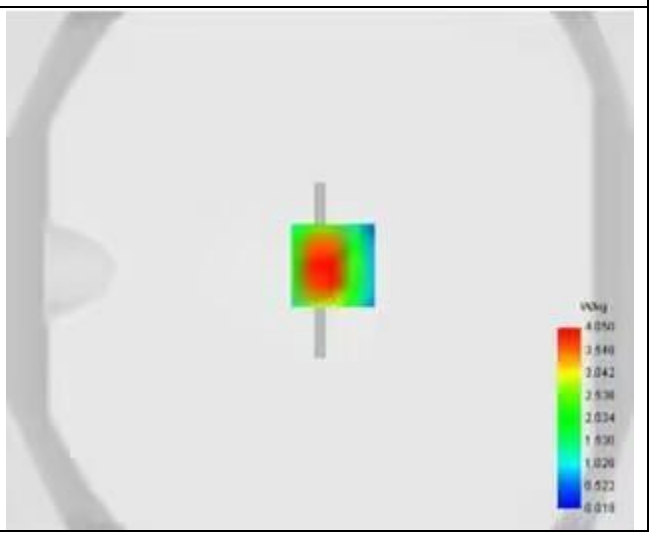

6.60
6.00
5.00
4.00
3.00
2.00
1.00
0.19
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)

System Performance Check Data (1900MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement:2022-11-08

Experimental conditions.

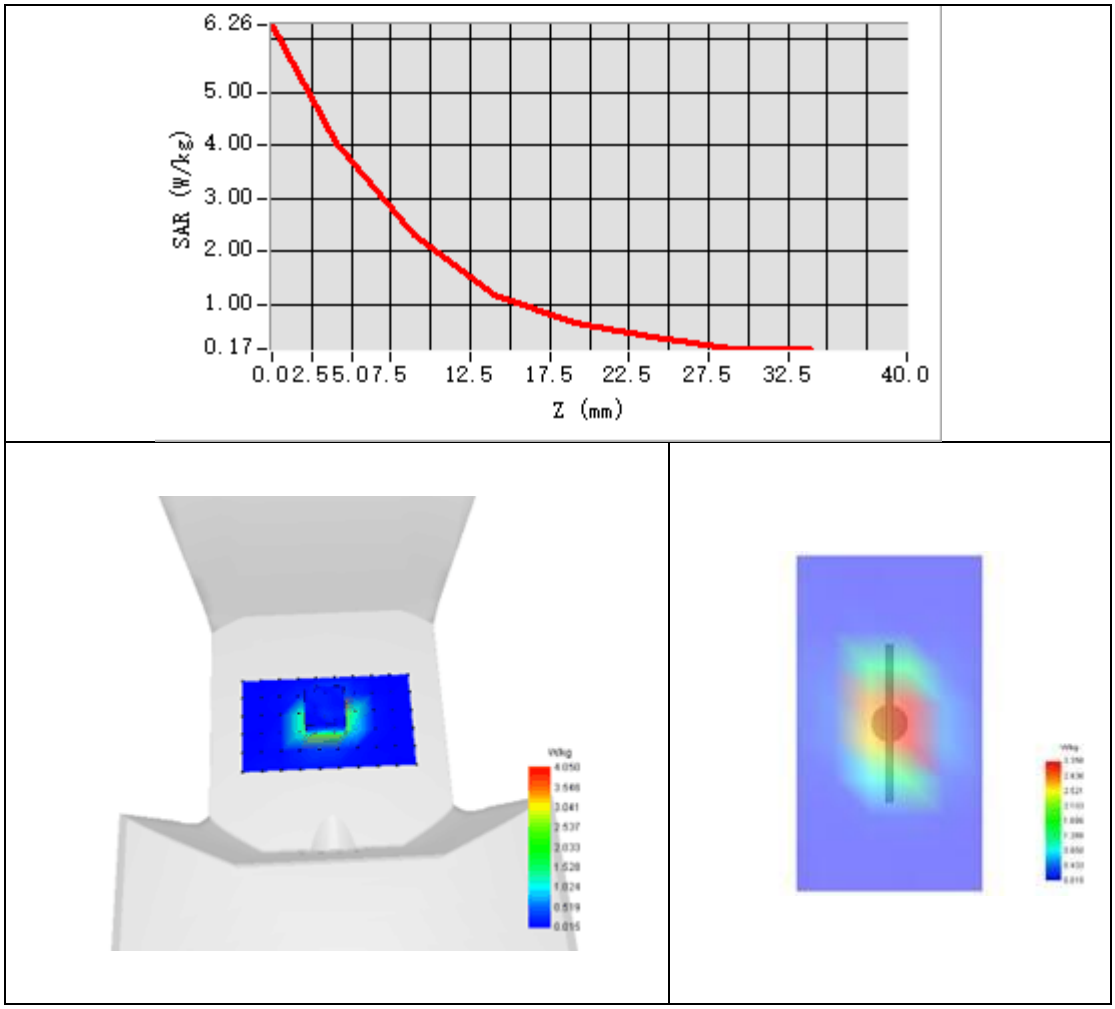
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW
Frequency (MHz)	1900.000
Relative permittivity	41.391
Conductivity (S/m)	1.419
Probe	SN 04/22 EPGO364
ConvF	2.21
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=5.00, Y=1.00 ; SAR Peak: 6.89 W/kg

SAR 10g (W/Kg)	2.038
SAR 1g (W/Kg)	4.062

Z Axis Scan

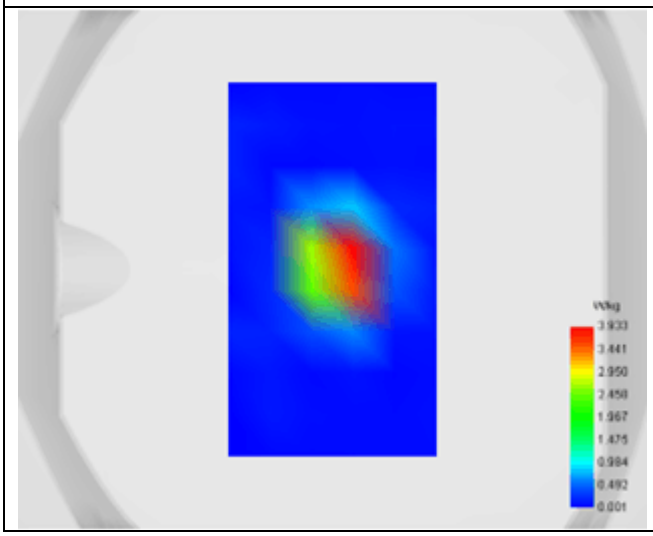
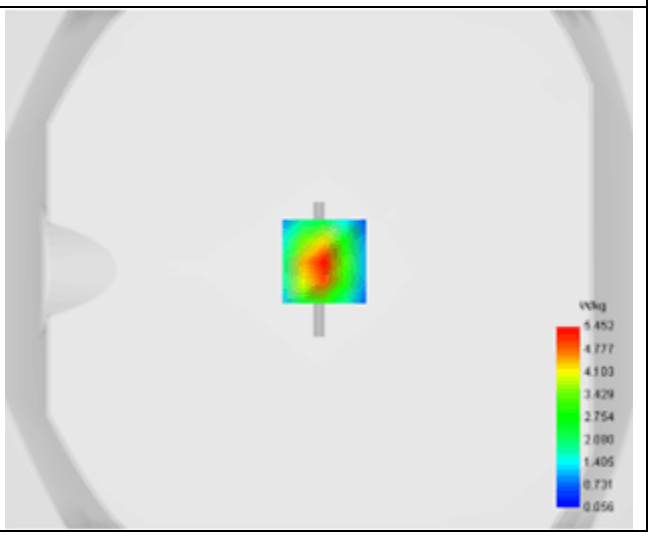

6.26
5.00
4.00
3.00
2.00
1.00
0.17
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)

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:2022-11-10

Experimental conditions.

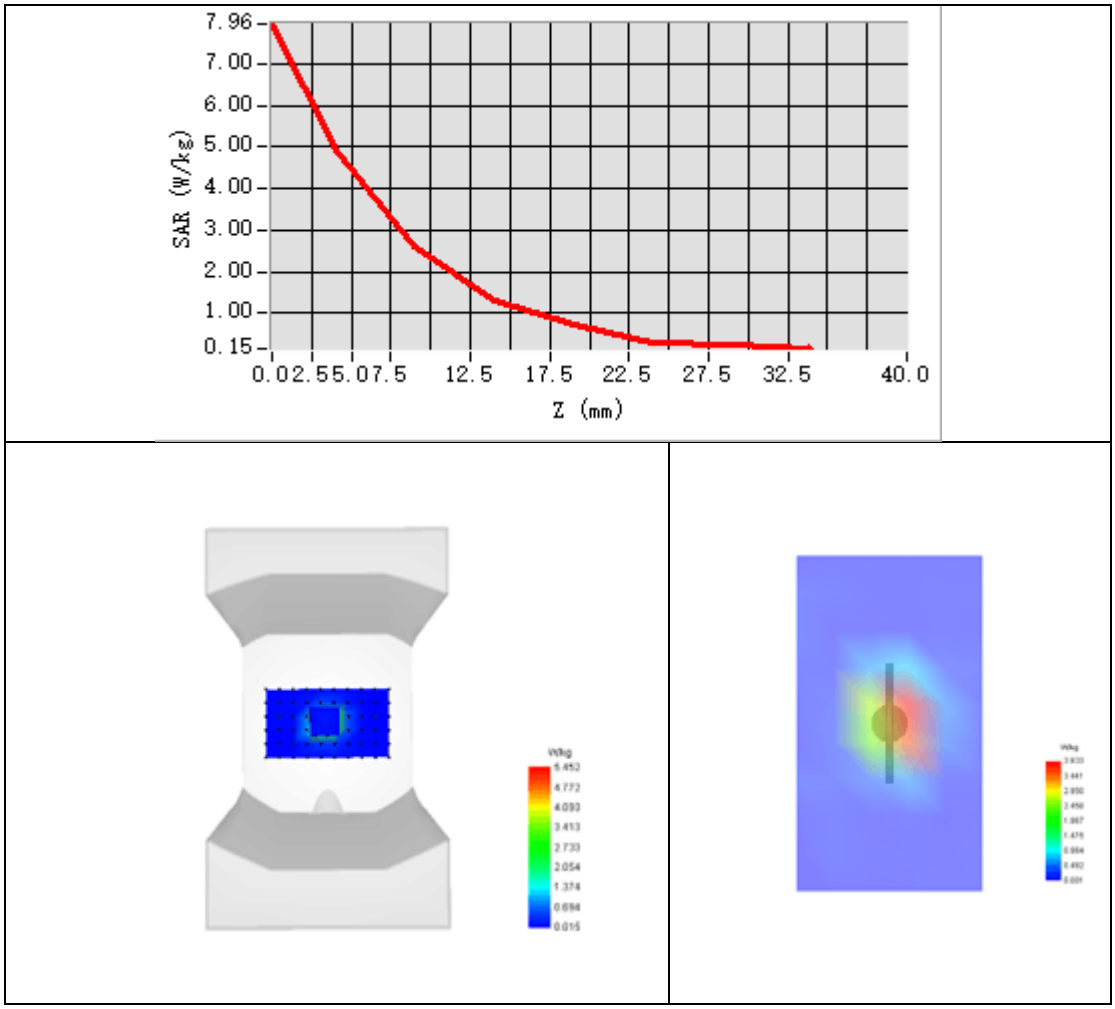
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW
Frequency (MHz)	2450.000
Relative permittivity	38.494
Conductivity (S/m)	1.810
Probe	SN 04/22 EPGO364
ConvF	2.24
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=5.00, Y=3.00 ; SAR Peak: 8.39 W/kg

SAR 10g (W/Kg)	2.199
SAR 1g (W/Kg)	5.449

Z Axis Scan

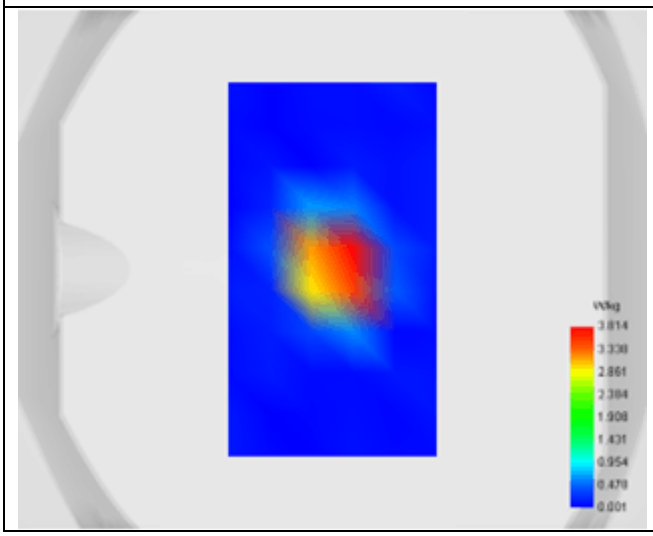
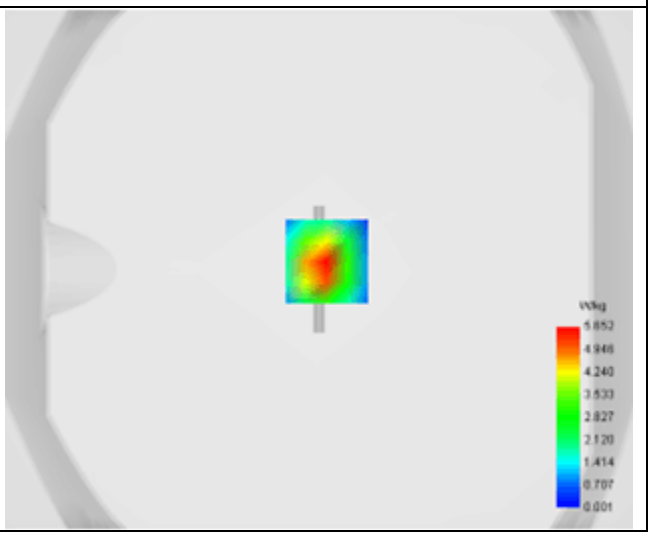

7.96
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.15
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)

System Performance Check Data (2600MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement:2022-11-10

Experimental conditions.

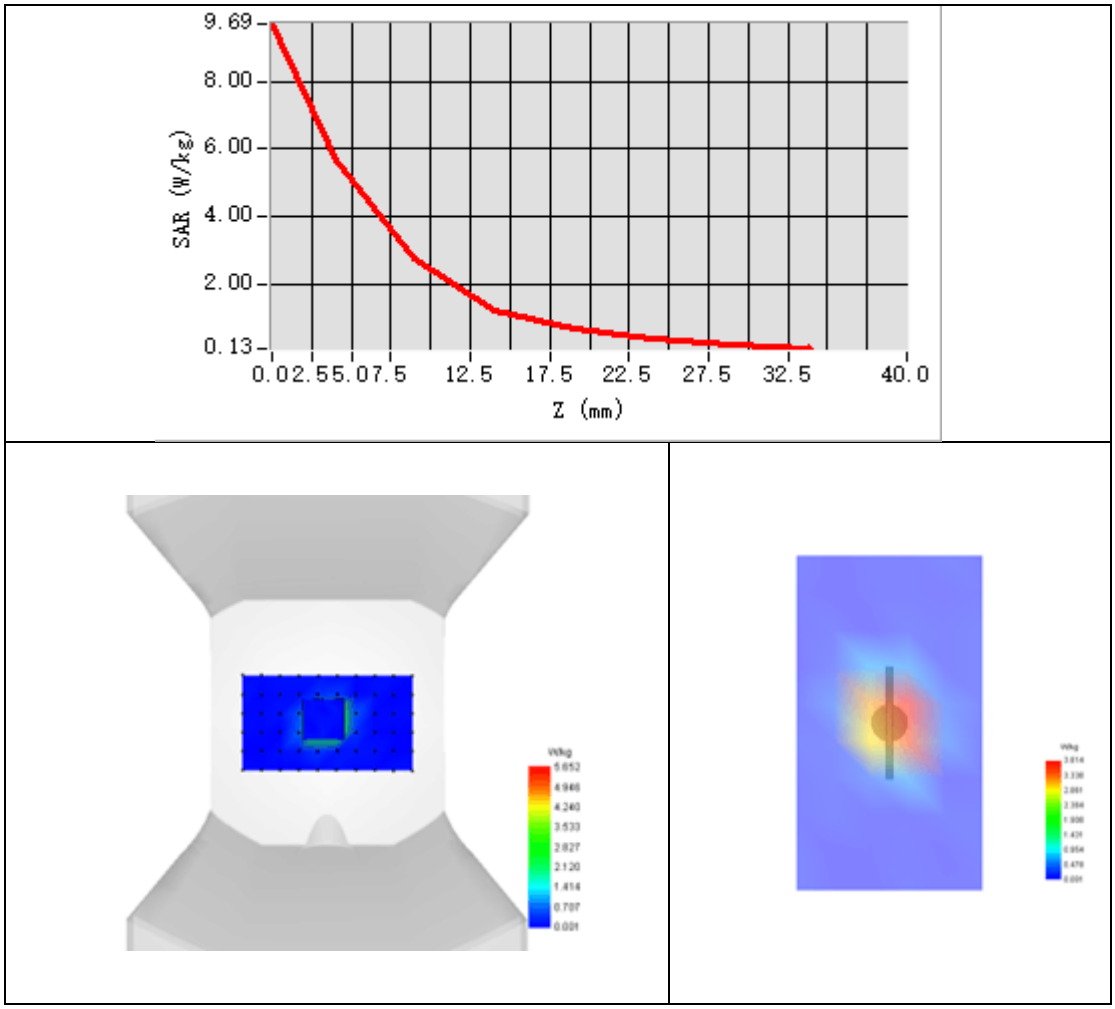
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW
Frequency (MHz)	2600.000
Relative permittivity	39.721
Conductivity (S/m)	1.951
Probe	SN 04/22 EPGO364
ConvF	2.14
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=3.00, Y=3.00 ; SAR Peak: 9.58 W/kg

SAR 10g (W/Kg)	2.368
SAR 1g (W/Kg)	5.656

Z Axis Scan


9.69
8.00
6.00
4.00
2.00
0.13
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)

Appendix B. SAR Test Plots

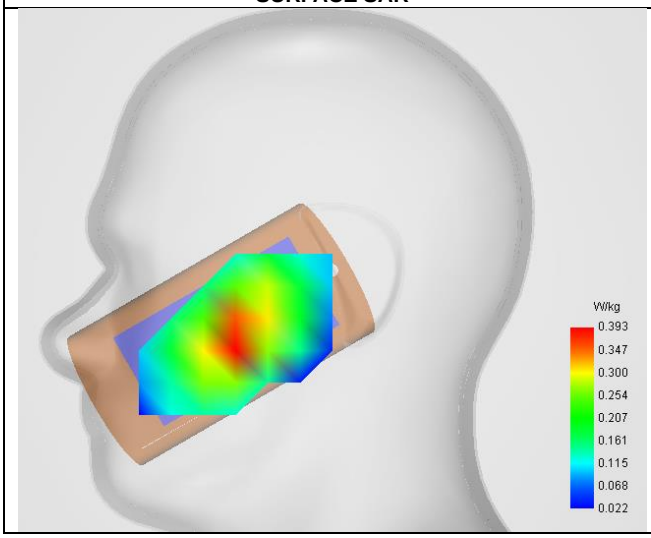
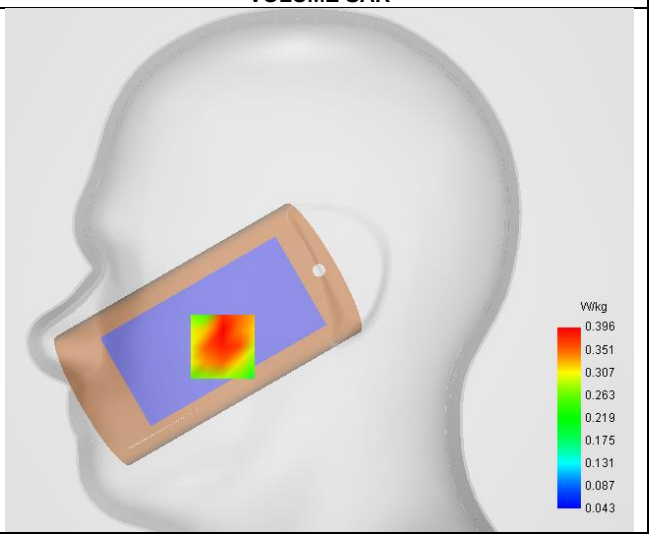
Plot 1: A. Experimental conditions.

Test Date	2022-11-03
Probe	SN 04/22 EPGO364
ConvF	1.72
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Low (128)
Signal	TDMA (GSM)

B. Permitivity

Frequency (MHz)	824.400
Relative permitivity (real part)	43.056
Relative permitivity (imaginary part)	19.400
Conductivity (S/m)	0.924

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

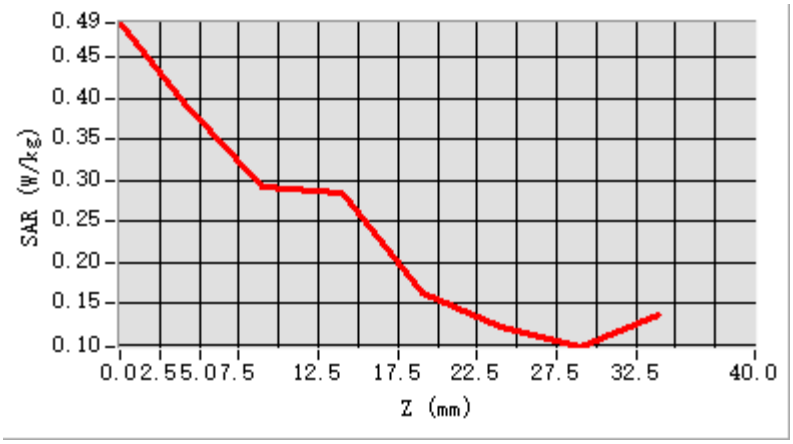
Maximum location: X=-48.00, Y=-38.00 ; SAR Peak: 0.51 W/kg

D. SAR 1g & 10g

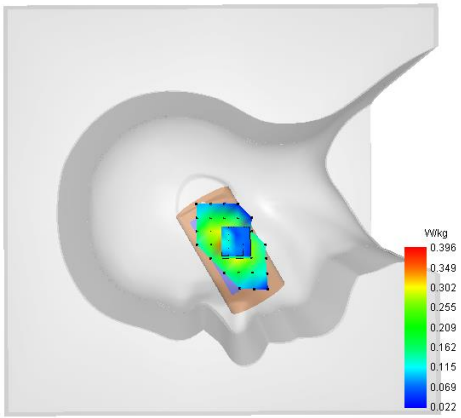
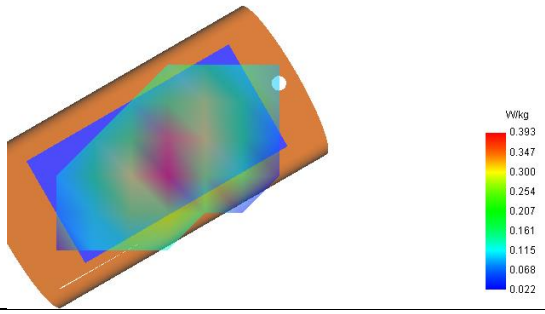
SAR 10g (W/Kg)	0.269
SAR 1g (W/Kg)	0.371
Variation (%)	-0.34
Horizontal validation criteria: minimum distance (mm)	28.844410
Vertical validation criteria: SAR ratio M2/M1 (%)	78.223808

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.493	0.396	0.292	0.284	0.164	0.120	0.096



F. 3D Image

3D screen shot	Hot spot position
	

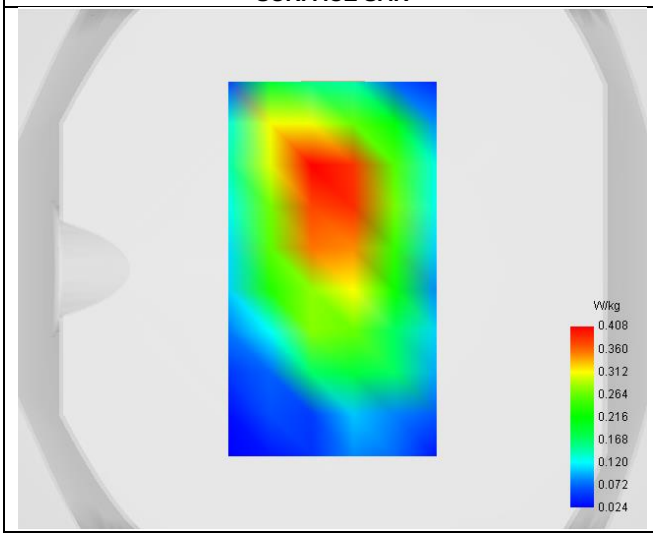
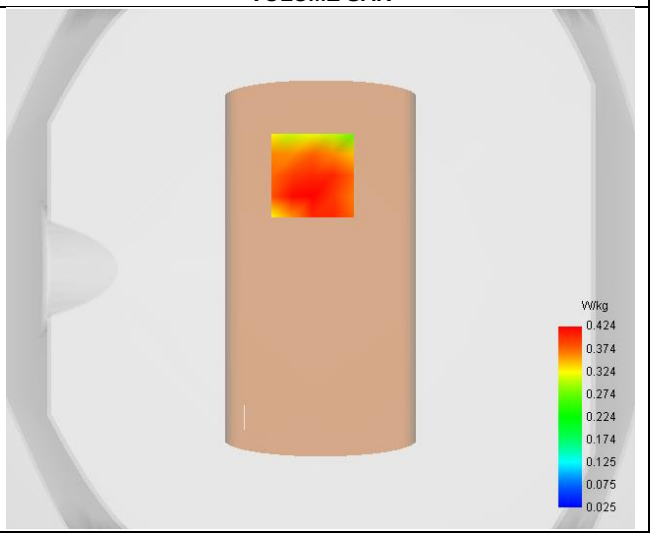
Plot 2: A. Experimental conditions.

Test Date	2022-11-03
Probe	SN 04/22 EPGO364
ConvF	1.75
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	GPRS850
Channels	Middle (128)
Signal	TDMA (GPRS)

B. Permitivity

Frequency (MHz)	824.200
Relative permitivity (real part)	43.056
Relative permitivity (imaginary part)	20.912
Conductivity (S/m)	0.924

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

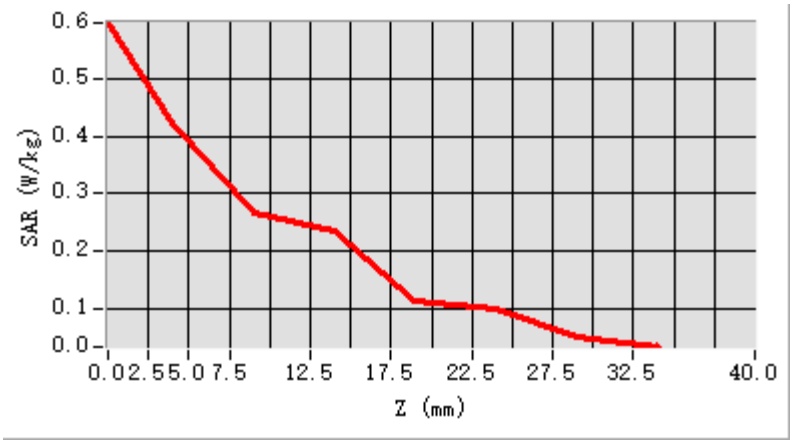
Maximum location: X=-3.00, Y=36.00 ; SAR Peak: 0.59 W/kg

D. SAR 1g & 10g

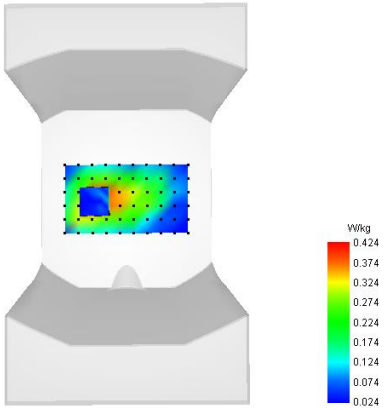
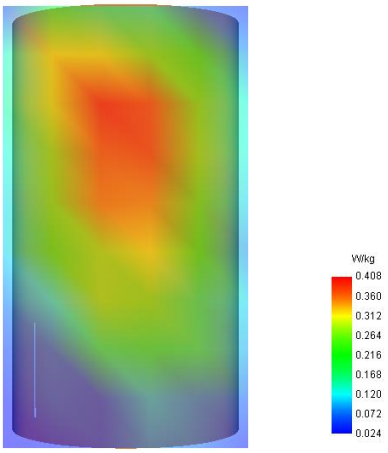
SAR 10g (W/Kg)	0.286
SAR 1g (W/Kg)	0.416
Variation (%)	-1.23
Horizontal validation criteria: minimum distance (mm)	28.844410
Vertical validation criteria: SAR ratio M2/M1 (%)	73.181293

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.598	0.424	0.265	0.236	0.113	0.099	0.050



F. 3D Image

3D screen shot	Hot spot position
	

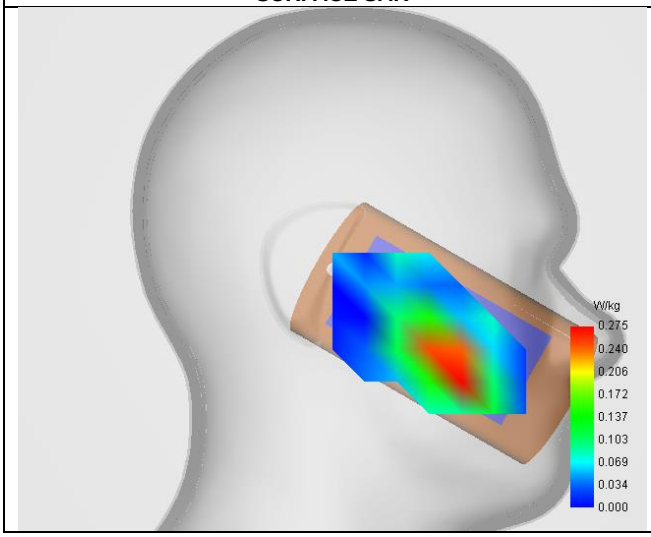
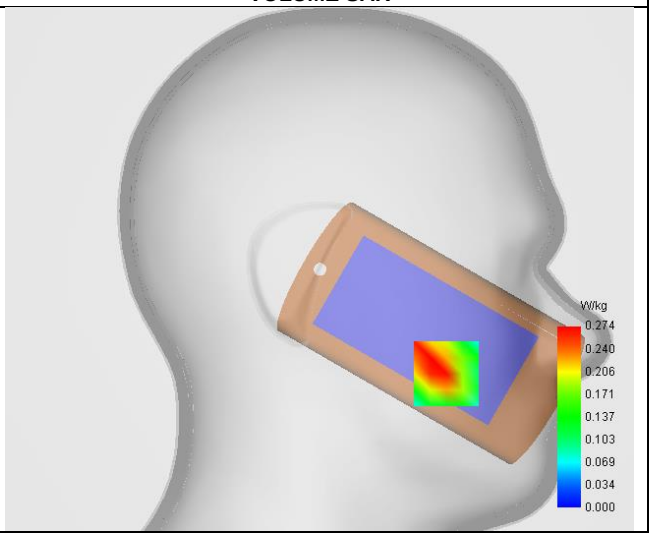
Plot 3: A. Experimental conditions.

Test Date	2022-11-08
Probe	SN 04/22 EPGO364
ConvF	2.25
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	GPRS1900
Channels	Middle (810)
Signal	TDMA (GPRS)

B. Permitivity

Frequency (MHz)	1909.800
Relative permitivity (real part)	41.391
Relative permitivity (imaginary part)	13.408
Conductivity (S/m)	1.419

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

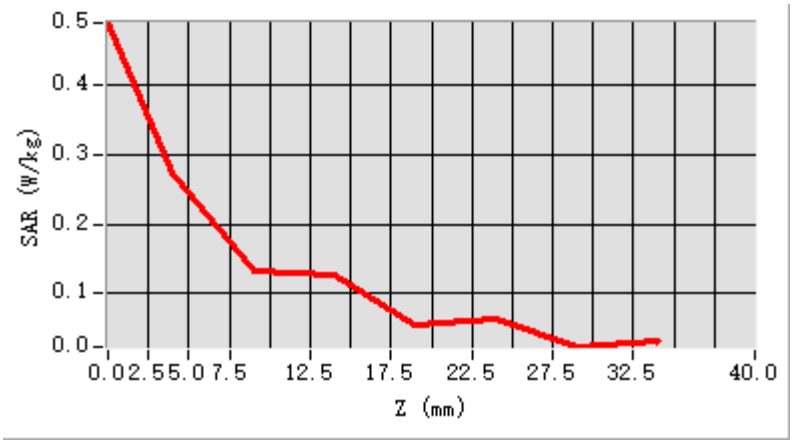
Maximum location: X=-63.00, Y=-52.00 ; SAR Peak: 0.46 W/kg

D. SAR 1g & 10g

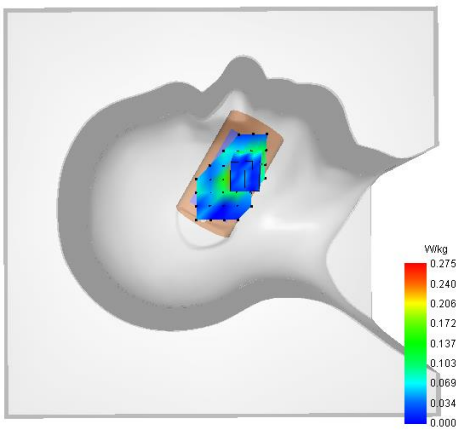
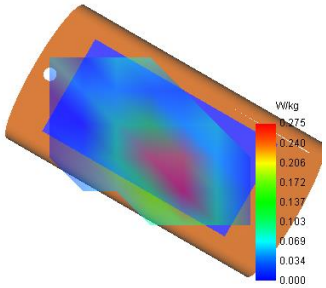
SAR 10g (W/Kg)	0.158
SAR 1g (W/Kg)	0.261
Variation (%)	2.69
Horizontal validation criteria: minimum distance (mm)	13.764448
Vertical validation criteria: SAR ratio M2/M1 (%)	68.228726

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.490	0.274	0.133	0.127	0.055	0.064	0.024



F. 3D Image

3D screen shot	Hot spot position
	

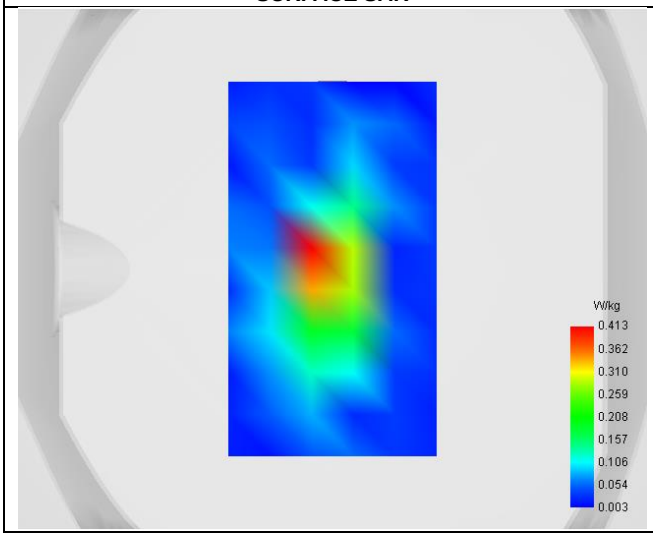
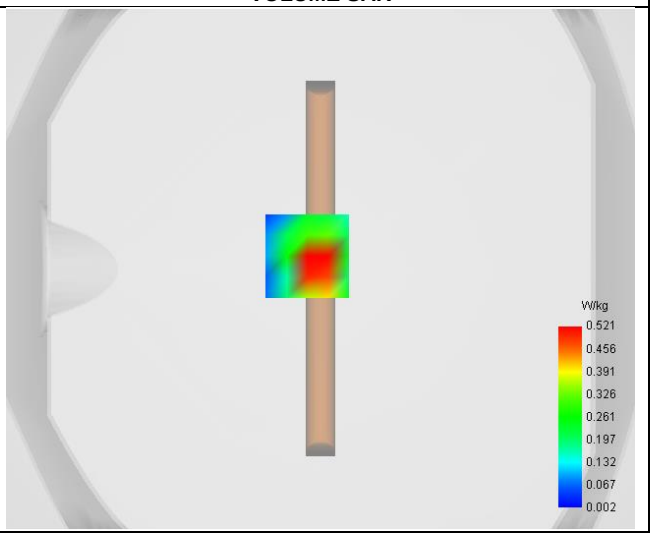
Plot 4: A. Experimental conditions.

Test Date	2022-11-08
Probe	SN 04/22 EPGO364
ConvF	2.21
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	GPRS1900
Channels	Higher (810)
Signal	TDMA (GPRS)

B. Permitivity

Frequency (MHz)	1909.800
Relative permitivity (real part)	41.391
Relative permitivity (imaginary part)	14.329
Conductivity (S/m)	1.419

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

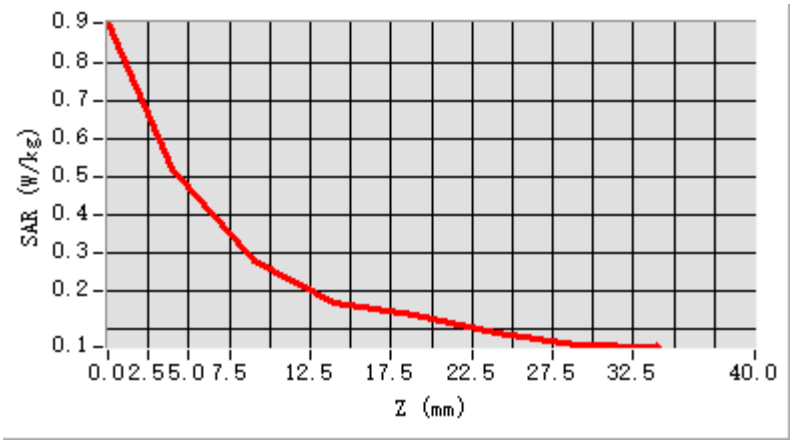
Maximum location: X=-5.00, Y=5.00 ; SAR Peak: 1.06 W/kg

D. SAR 1g & 10g

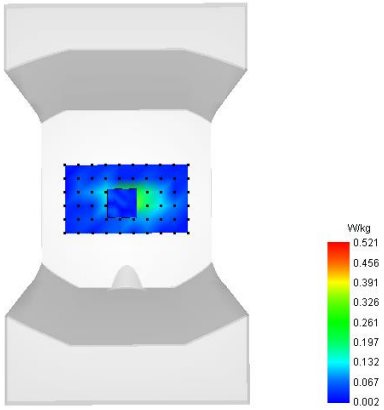
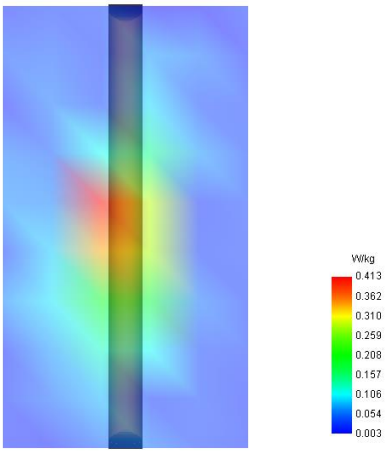
SAR 10g (W/Kg)	0.254
SAR 1g (W/Kg)	0.554
Variation (%)	-3.80
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	53.940240

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.902	0.521	0.281	0.170	0.139	0.092	0.061



F. 3D Image

3D screen shot	Hot spot position
	

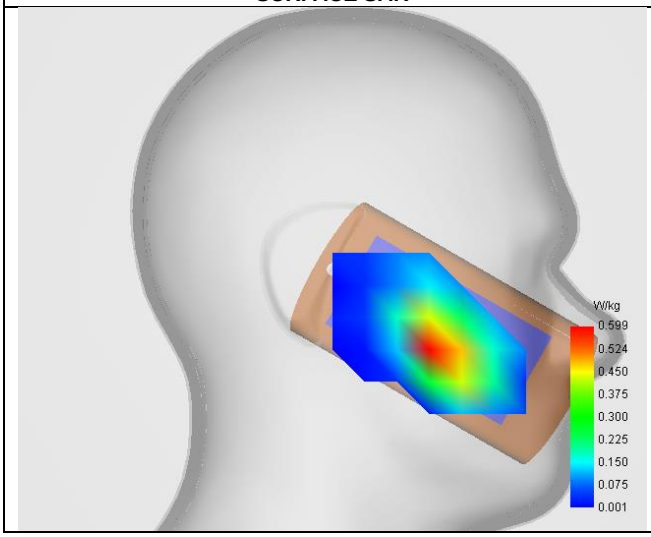
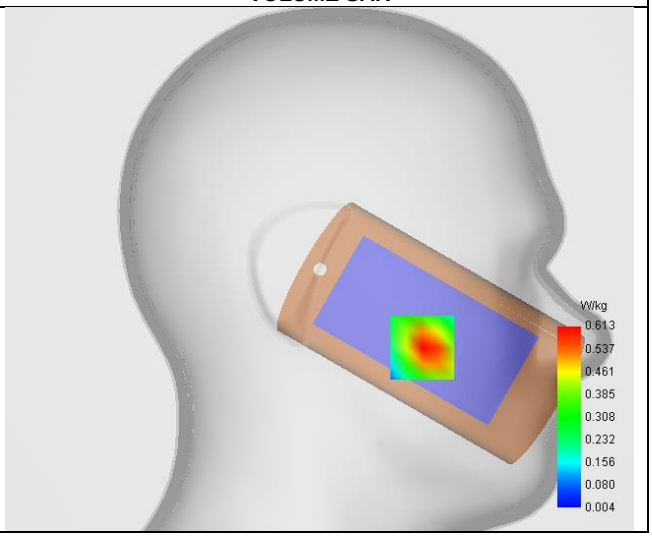
Plot 5: A. Experimental conditions.

Test Date	2022-11-08
Probe	SN 04/22 EPGO364
ConvF	2.25
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	Band 2 (1900)
Channels	Higher (9538)
Signal	WCDMA

B. Permitivity

Frequency (MHz)	1907.600
Relative permitivity (real part)	41.391
Relative permitivity (imaginary part)	13.210
Conductivity (S/m)	1.419

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

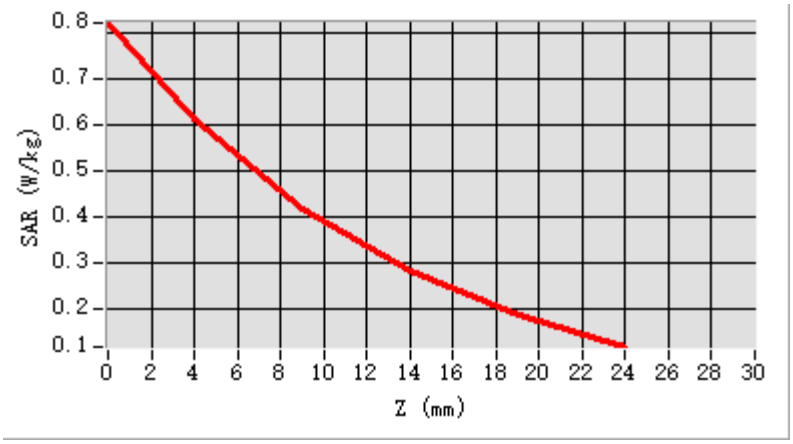
Maximum location: X=-51.00, Y=-39.00 ; SAR Peak: 0.83 W/kg

D. SAR 1g & 10g

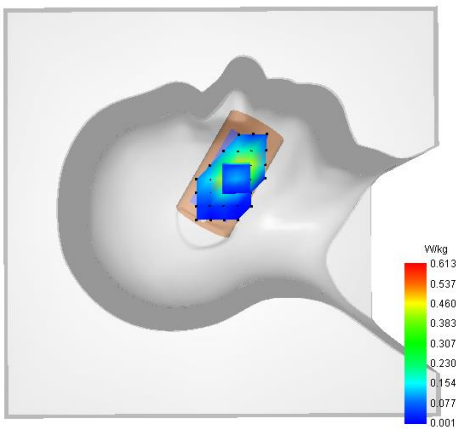
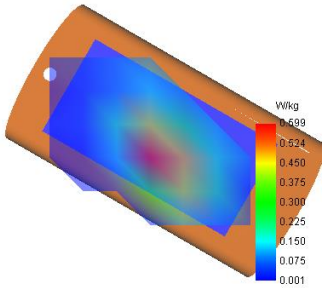
SAR 10g (W/Kg)	0.338
SAR 1g (W/Kg)	0.578
Variation (%)	-2.80
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.823	0.613	0.418	0.281	0.187



F. 3D Image

3D screen shot	Hot spot position
	

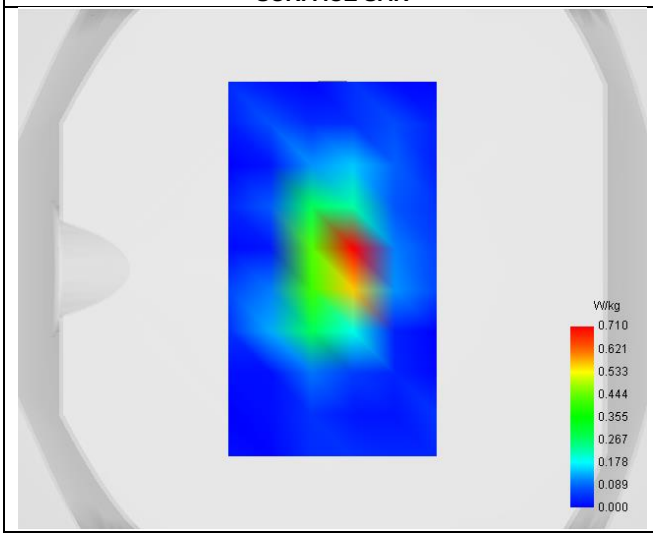
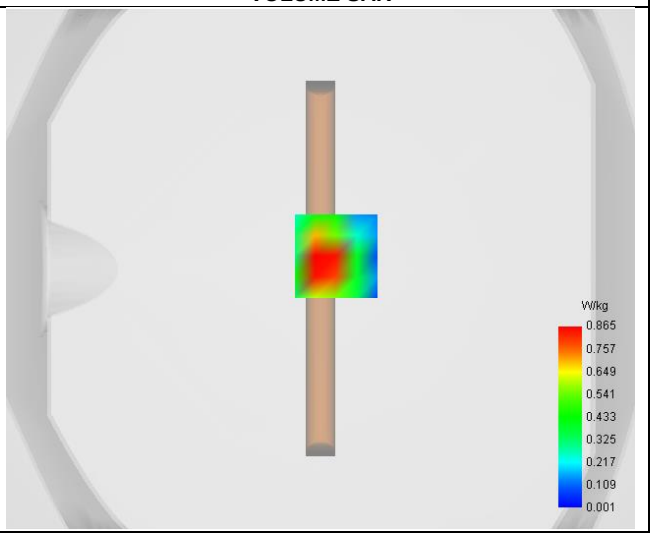
Plot 6: A. Experimental conditions.

Test Date	2022-11-08
Probe	SN 04/22 EPGO364
ConvF	2.21
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	Band 2 (1900)
Channels	Middle (9400)
Signal	WCDMA

B. Permitivity

Frequency (MHz)	1880.000
Relative permitivity (real part)	41.391
Relative permitivity (imaginary part)	14.560
Conductivity (S/m)	1.419

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

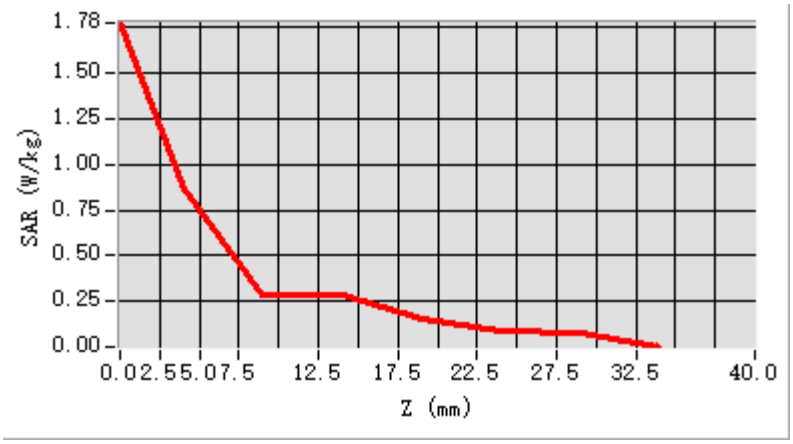
Maximum location: X=6.00, Y=5.00 ; SAR Peak: 1.53 W/kg

D. SAR 1g & 10g

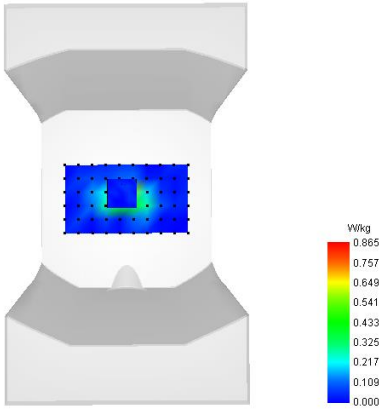
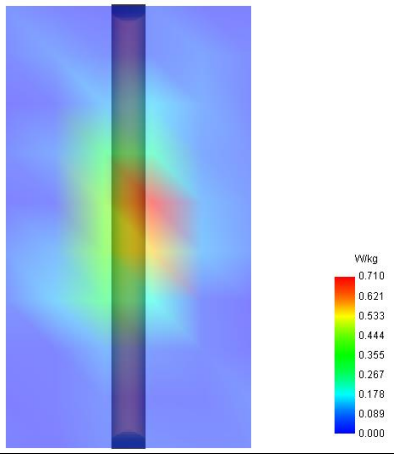
SAR 10g (W/Kg)	0.421
SAR 1g (W/Kg)	0.887
Variation (%)	3.33
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	60.708805

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.776	0.865	0.287	0.282	0.150	0.092	0.078



F. 3D Image

3D screen shot	Hot spot position
	

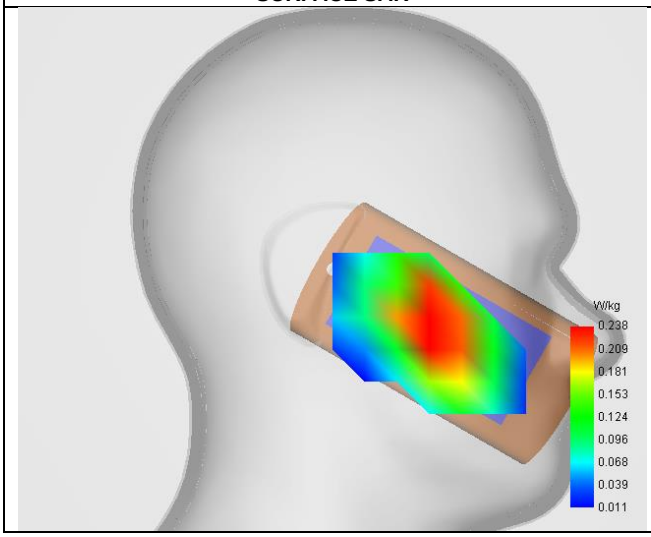
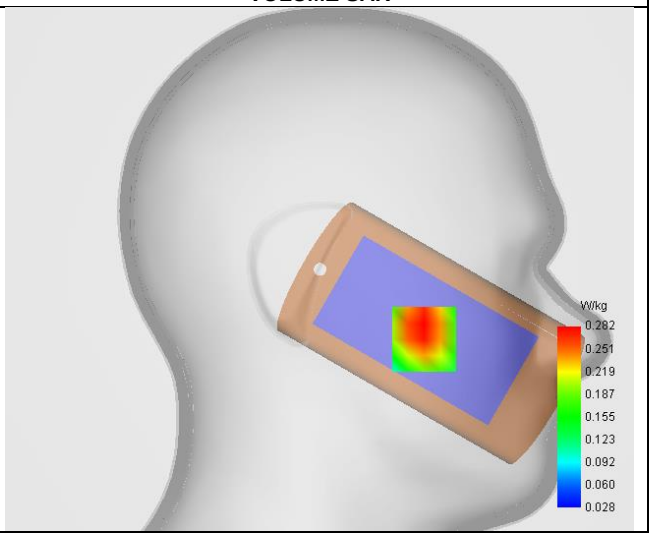
Plot 7: A. Experimental conditions.

Test Date	2022-11-03
Probe	SN 04/22 EPGO364
ConvF	1.72
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	Band 5 (850)
Channels	Middle (4233)
Signal	WCDMA

B. Permitivity

Frequency (MHz)	846.600
Relative permitivity (real part)	43.056
Relative permitivity (imaginary part)	19.400
Conductivity (S/m)	0.924

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

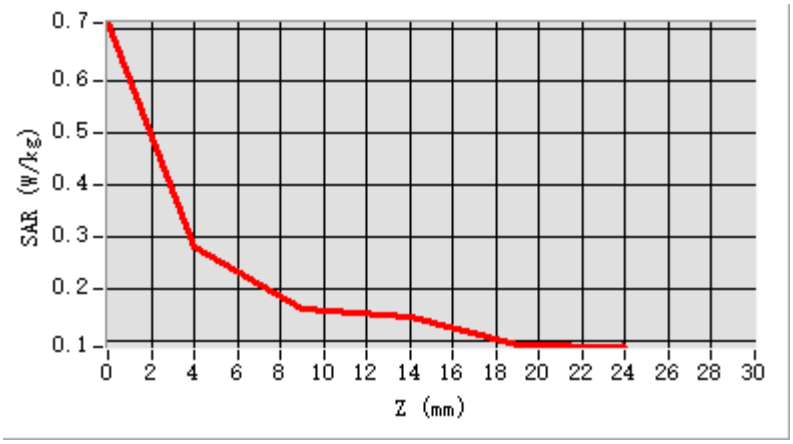
Maximum location: X=-52.00, Y=-35.00 ; SAR Peak: 0.37 W/kg

D. SAR 1g & 10g

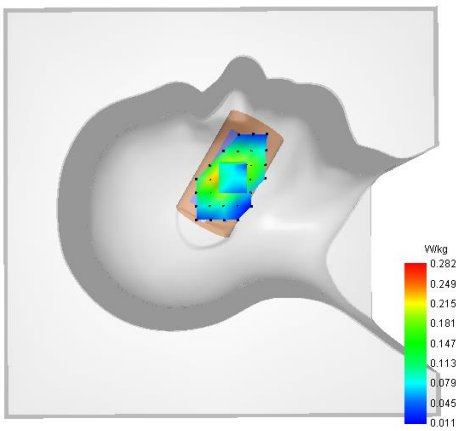
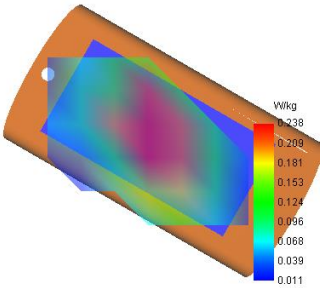
SAR 10g (W/Kg)	0.186
SAR 1g (W/Kg)	0.270
Variation (%)	-1.96
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.712	0.282	0.162	0.150	0.094



F. 3D Image

3D screen shot	Hot spot position
	

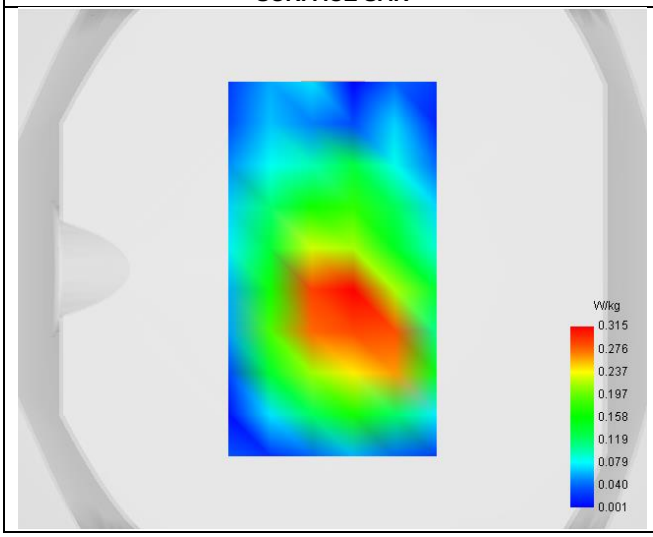
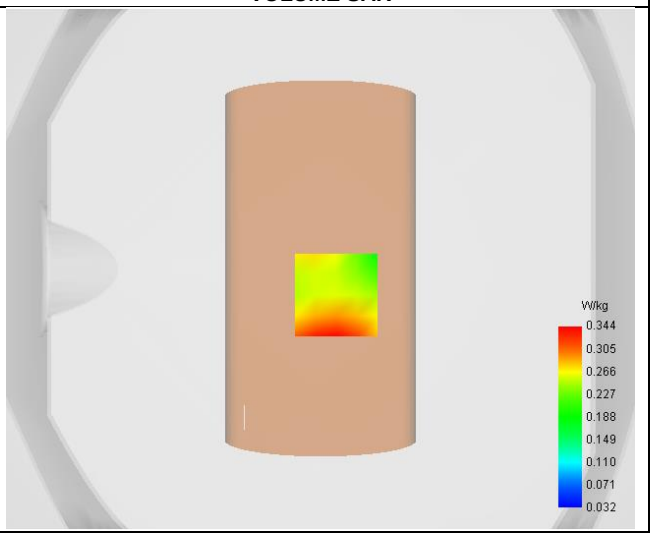
Plot 8: A. Experimental conditions.

Test Date	2022-11-03
Probe	SN 04/22 EPGO364
ConvF	1.75
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	Band 5 (850)
Channels	Middle (4183)
Signal	WCDMA

B. Permitivity

Frequency (MHz)	836.600
Relative permitivity (real part)	43.056
Relative permitivity (imaginary part)	20.912
Conductivity (S/m)	0.924

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

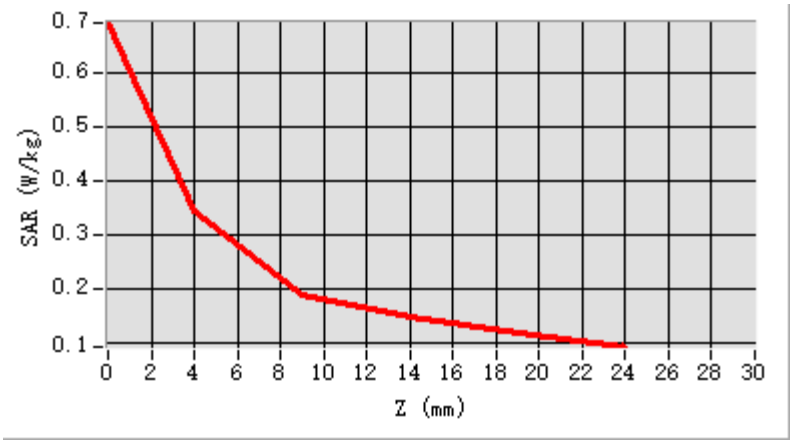
Maximum location: X=6.00, Y=-10.00 ; SAR Peak: 0.50 W/kg

D. SAR 1g & 10g

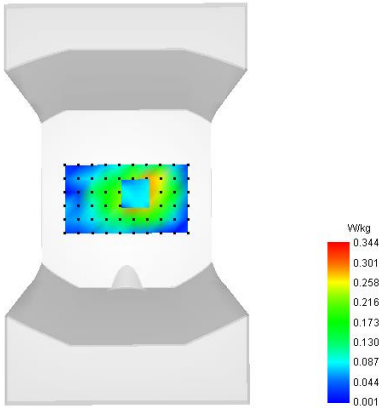
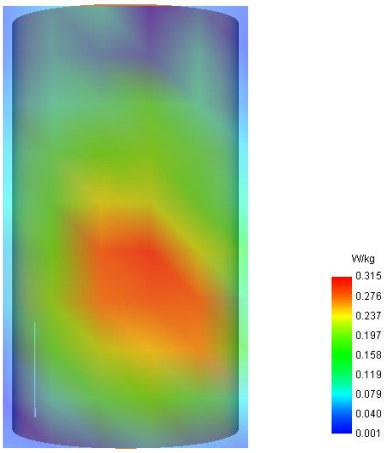
SAR 10g (W/Kg)	0.209
SAR 1g (W/Kg)	0.303
Variation (%)	3.44
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.692	0.344	0.187	0.148	0.119



F. 3D Image

3D screen shot	Hot spot position
	

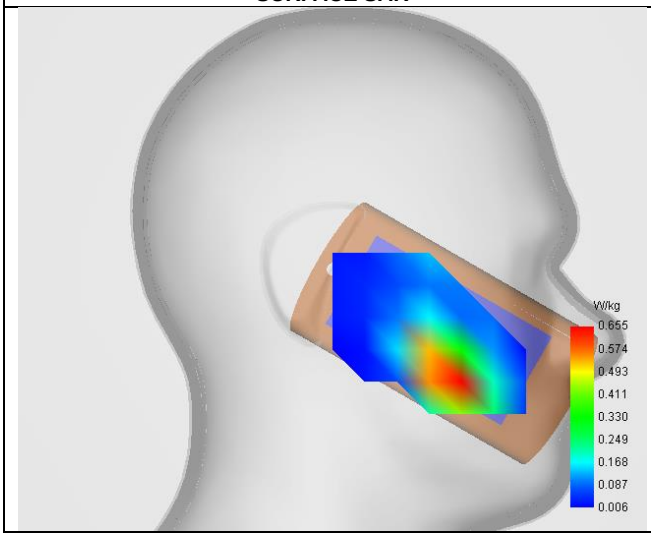
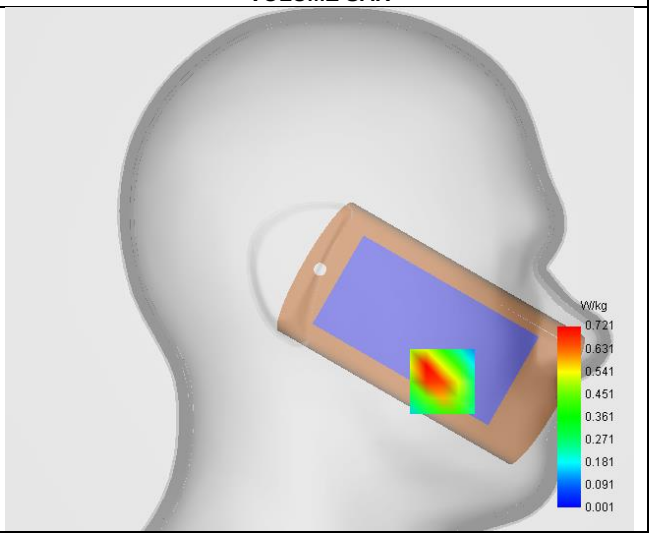
Plot 9: A. Experimental conditions.

Test Date	2022-11-08
Probe	SN 04/22 EPGO364
ConvF	2.25
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	LTE band 2
Channels	Middle (18900)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	1873.700
Relative permitivity (real part)	41.391
Relative permitivity (imaginary part)	13.455
Conductivity (S/m)	1.419

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

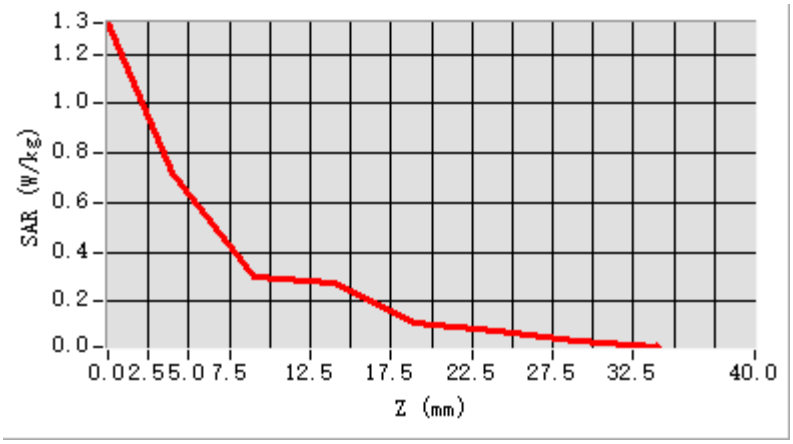
Maximum location: X=-61.00, Y=-56.00 ; SAR Peak: 1.15 W/kg

D. SAR 1g & 10g

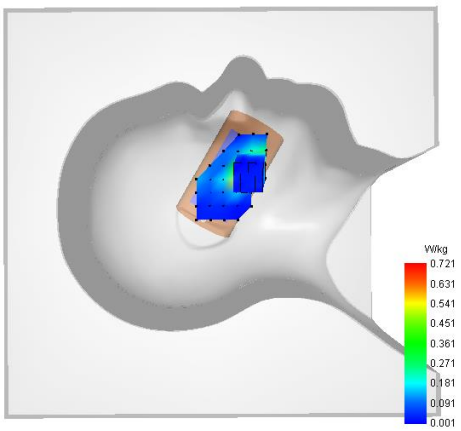
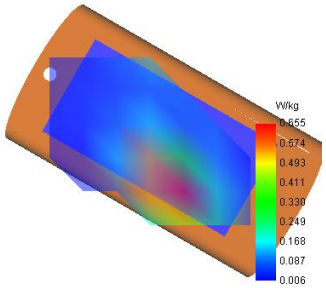
SAR 10g (W/Kg)	0.367
SAR 1g (W/Kg)	0.668
Variation (%)	3.76
Horizontal validation criteria: minimum distance (mm)	13.753546
Vertical validation criteria: SAR ratio M2/M1 (%)	54.732015

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.326	0.721	0.301	0.279	0.112	0.082	0.042



F. 3D Image

3D screen shot	Hot spot position
	

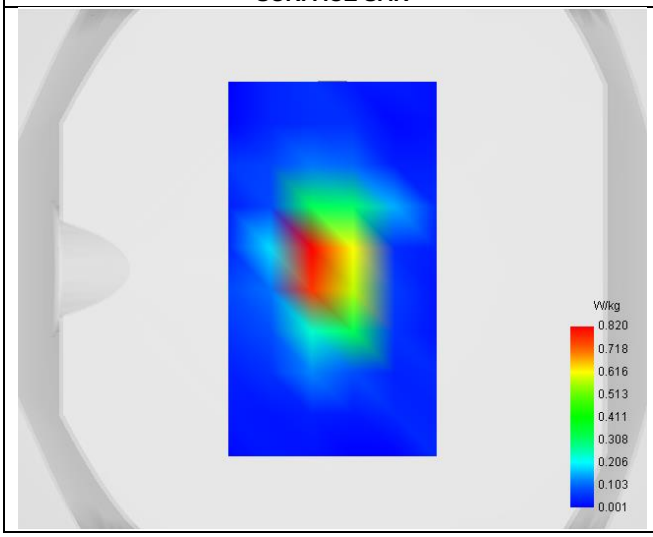
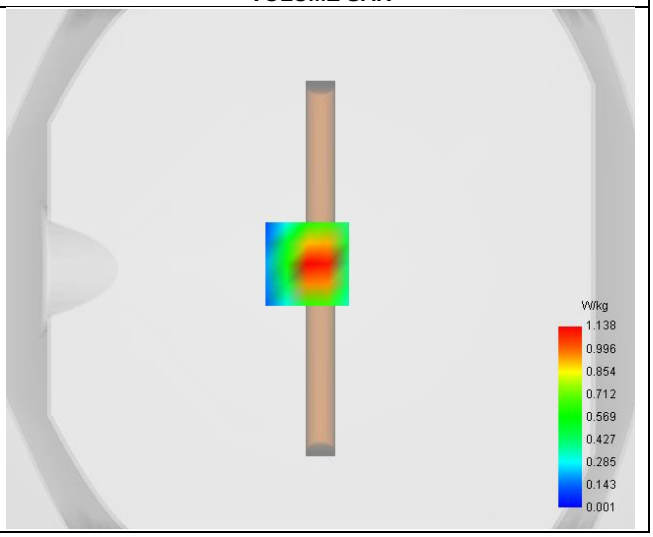
Plot 10: A. Experimental conditions.

Test Date	2022-11-08
Probe	SN 04/22 EPGO364
ConvF	2.21
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channels	Higher (19100)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	1893.700
Relative permitivity (real part)	41.391
Relative permitivity (imaginary part)	14.450
Conductivity (S/m)	1.419

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

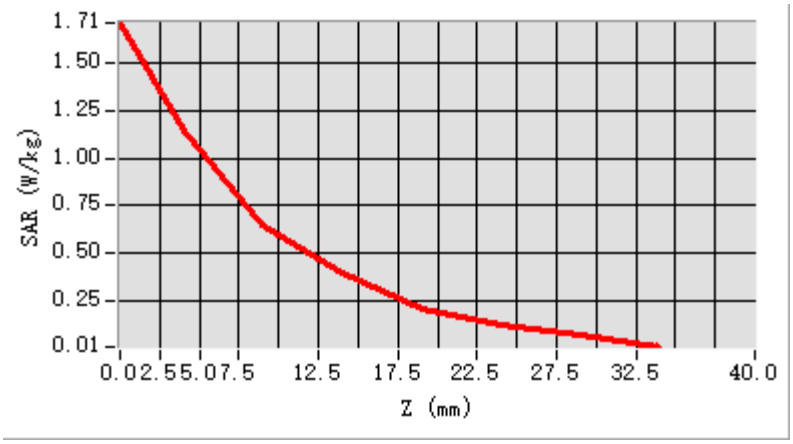
Maximum location: X=-5.00, Y=2.00 ; SAR Peak: 1.99 W/kg

D. SAR 1g & 10g

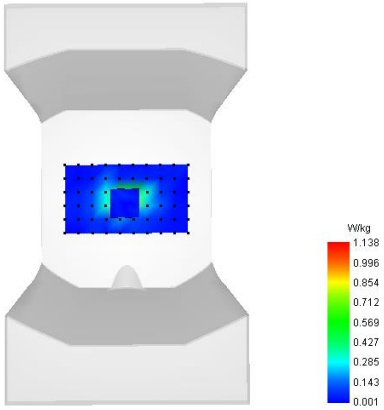
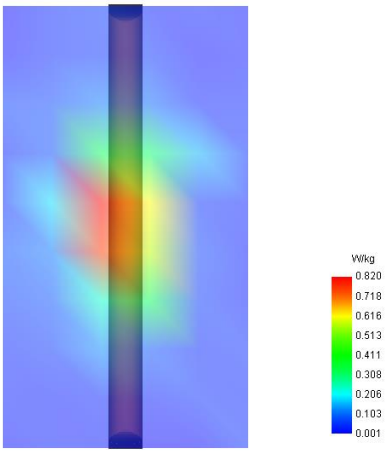
SAR 10g (W/Kg)	0.544
SAR 1g (W/Kg)	1.119
Variation (%)	3.66
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	56.938460

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.711	1.138	0.648	0.397	0.206	0.116	0.065



F. 3D Image

3D screen shot	Hot spot position
	

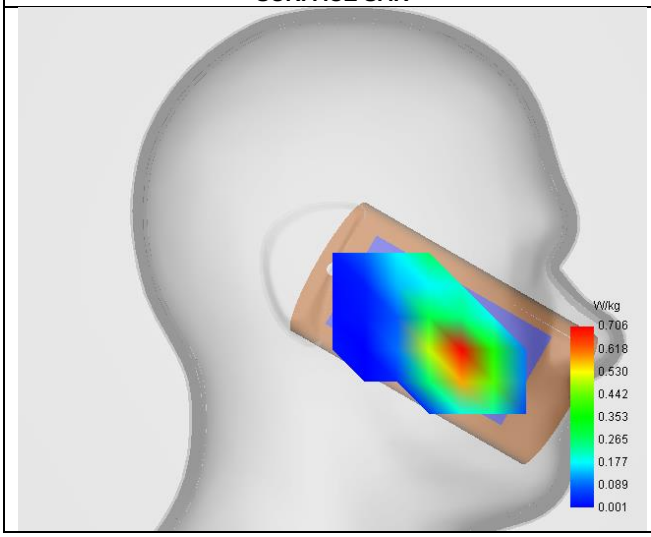
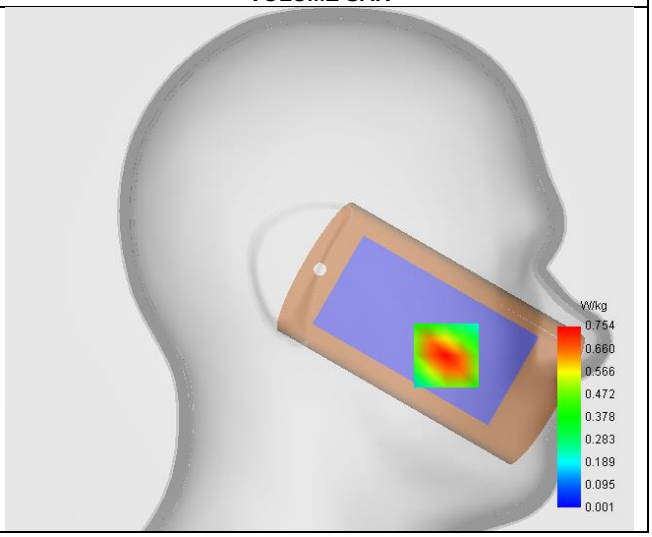
Plot 11: A. Experimental conditions.

Test Date	2022-11-09
Probe	SN 04/22 EPGO364
ConvF	1.95
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	LTE band 4
Channels	Middle (20175)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	1726.200
Relative permitivity (real part)	39.365
Relative permitivity (imaginary part)	14.153
Conductivity (S/m)	1.427

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

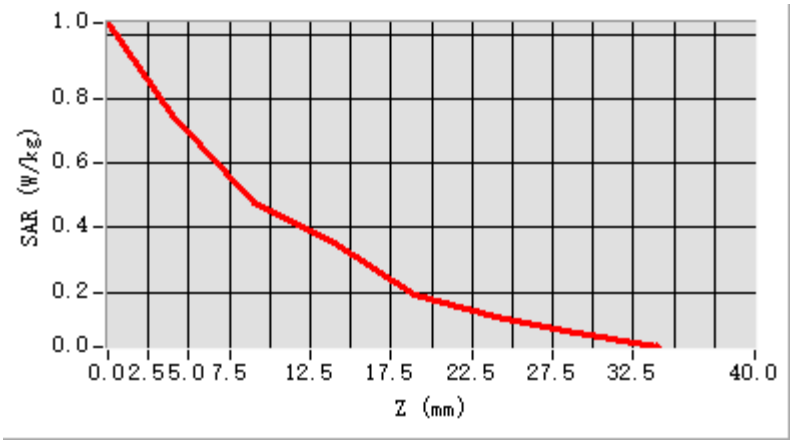
Maximum location: X=-63.00, Y=-43.00 ; SAR Peak: 1.04 W/kg

D. SAR 1g & 10g

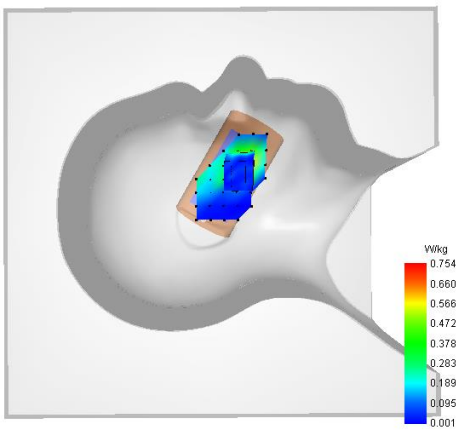
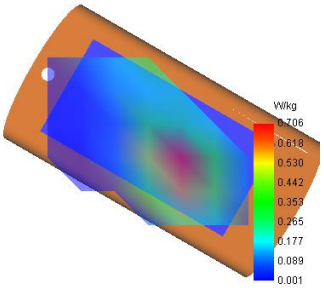
SAR 10g (W/Kg)	0.410
SAR 1g (W/Kg)	0.704
Variation (%)	-1.33
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	63.426957

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.039	0.754	0.478	0.351	0.192	0.120	0.075



F. 3D Image

3D screen shot	Hot spot position
	

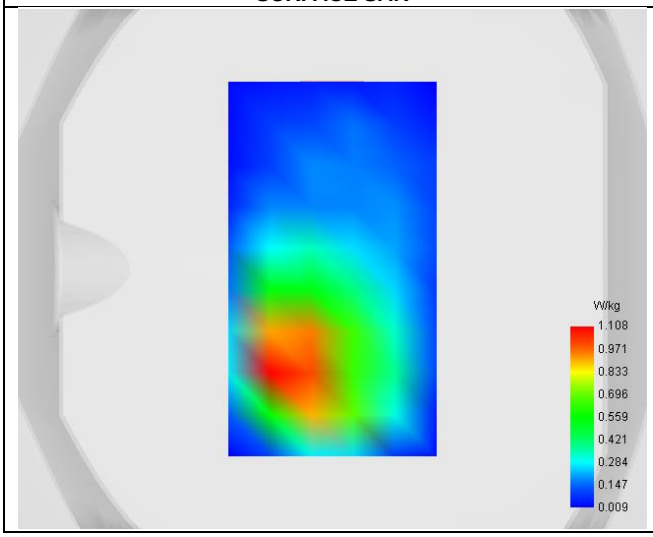
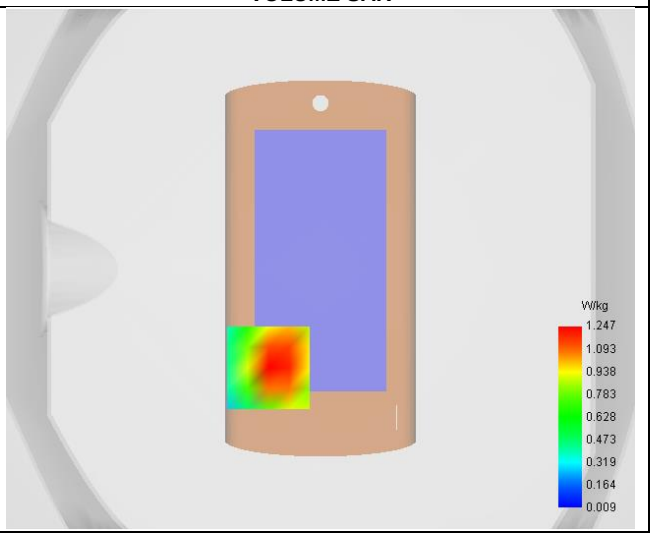
Plot 12: A. Experimental conditions.

Test Date	2022-11-09
Probe	SN 04/22 EPGO364
ConvF	2.00
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channels	Middle (20175)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	1726.200
Relative permitivity (real part)	39.365
Relative permitivity (imaginary part)	15.375
Conductivity (S/m)	1.427

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

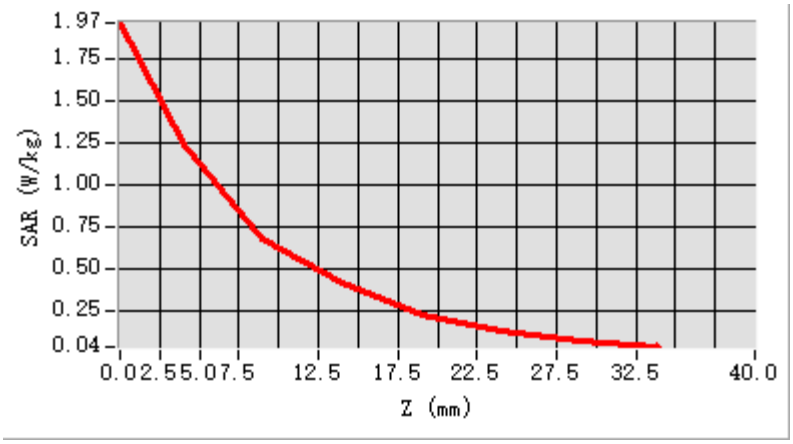
Maximum location: X=-20.00, Y=-38.00 ; SAR Peak: 1.97 W/kg

D. SAR 1g & 10g

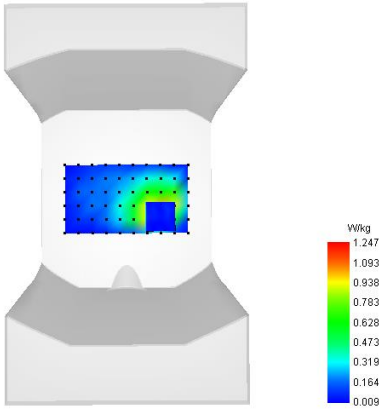
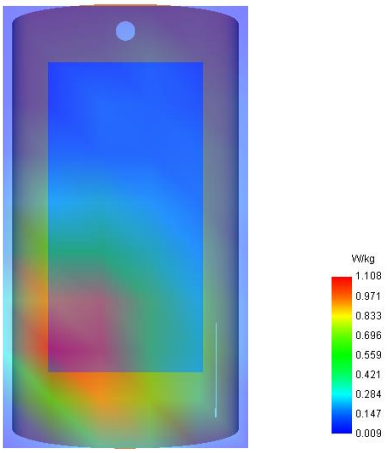
SAR 10g (W/Kg)	0.670
SAR 1g (W/Kg)	1.209
Variation (%)	-4.36
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	54.770026

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.968	1.247	0.683	0.423	0.229	0.130	0.074



F. 3D Image

3D screen shot	Hot spot position
	

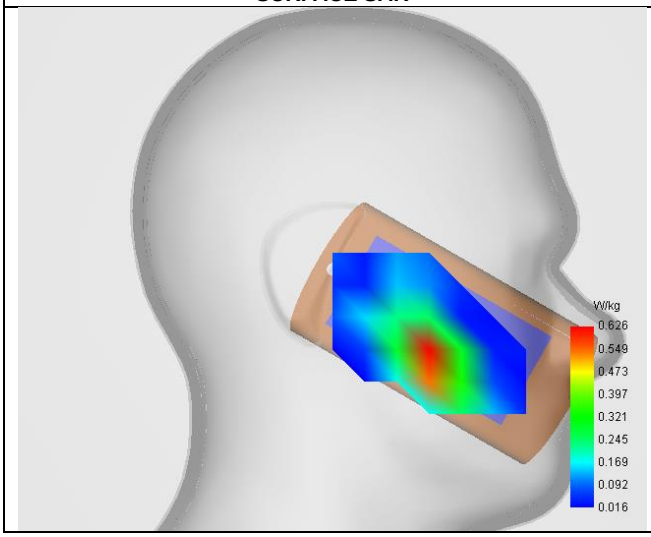
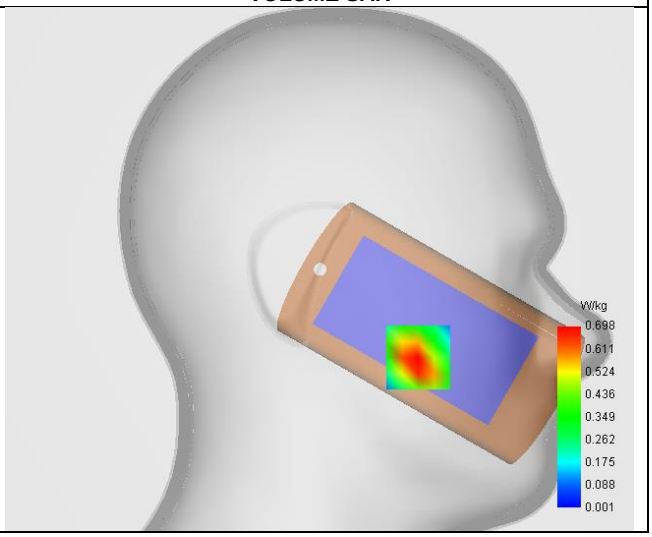
Plot 13: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	2.36
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	LTE band 7
Channels	Middle (21100)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	2528.700
Relative permitivity (real part)	39.721
Relative permitivity (imaginary part)	13.404
Conductivity (S/m)	1.951

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

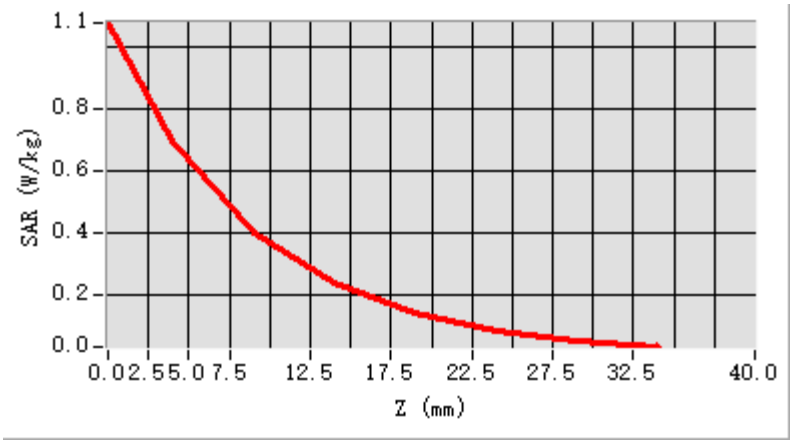
Maximum location: X=-49.00, Y=-44.00 ; SAR Peak: 1.16 W/kg

D. SAR 1g & 10g

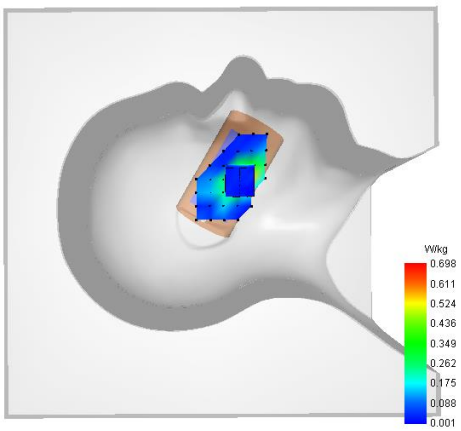
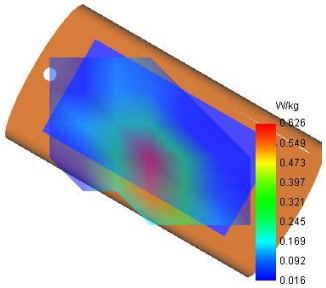
SAR 10g (W/Kg)	0.349
SAR 1g (W/Kg)	0.678
Variation (%)	-1.63
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	56.822044

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.081	0.698	0.397	0.234	0.137	0.080	0.046



F. 3D Image

3D screen shot	Hot spot position
	

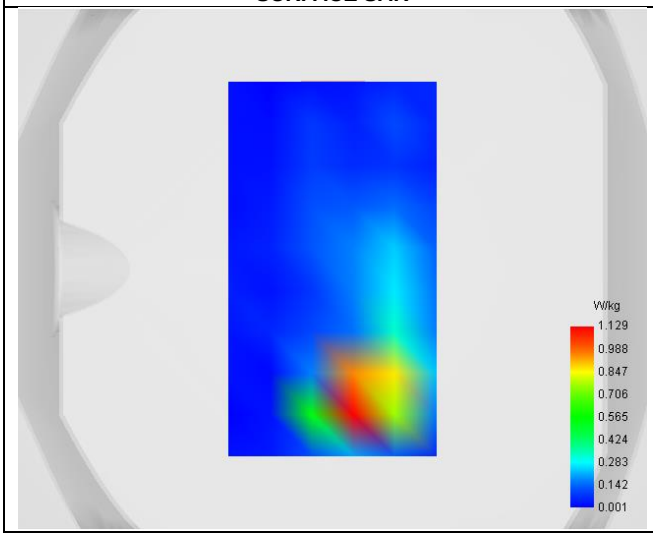
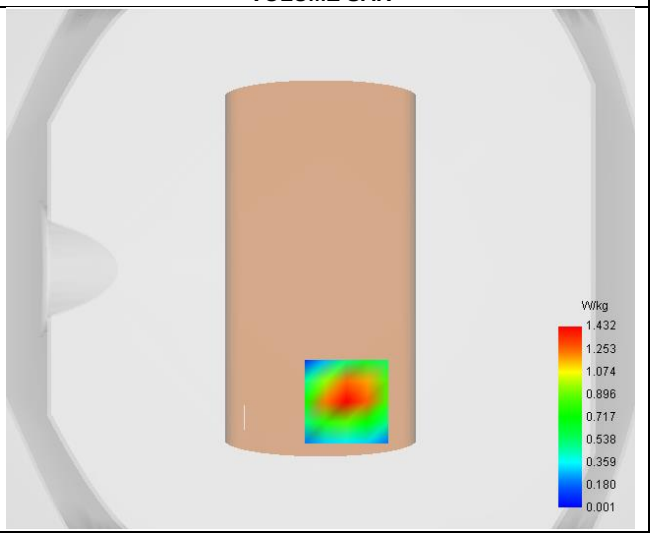
Plot 14: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	2.14
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	Middle (21100)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	2528.700
Relative permitivity (real part)	39.721
Relative permitivity (imaginary part)	14.623
Conductivity (S/m)	1.951

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

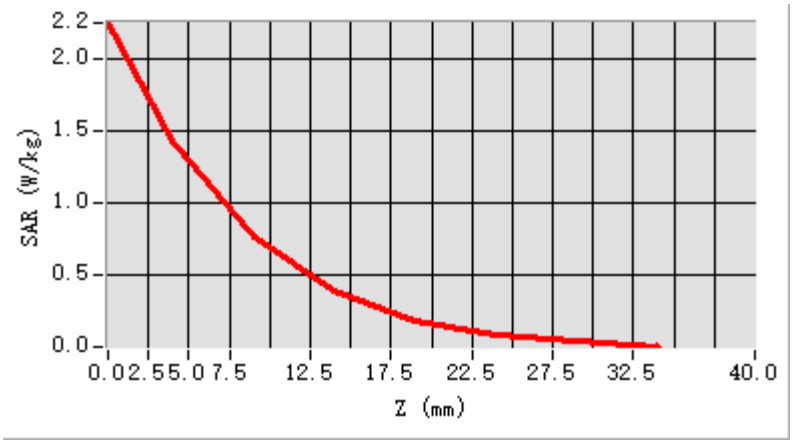
Maximum location: X=10.00, Y=-51.00 ; SAR Peak: 2.49 W/kg

D. SAR 1g & 10g

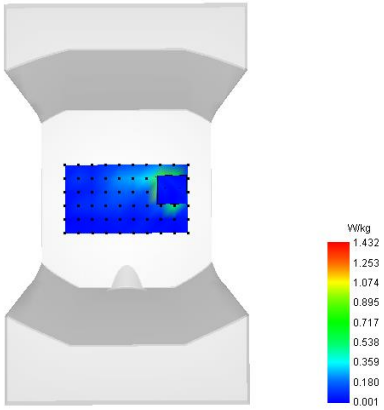
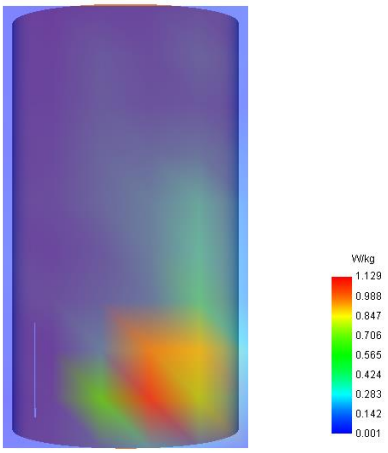
SAR 10g (W/Kg)	0.647
SAR 1g (W/Kg)	1.375
Variation (%)	-1.83
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	53.651134

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.246	1.432	0.768	0.393	0.192	0.098	0.050



F. 3D Image

3D screen shot	Hot spot position
	

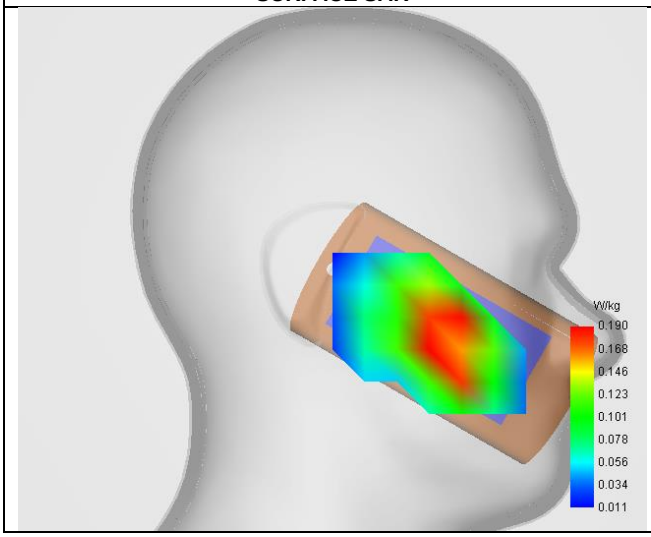
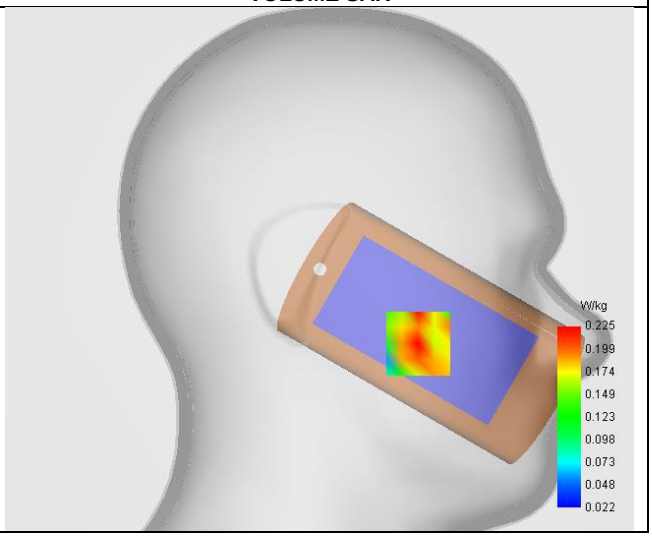
Plot 15: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	1.69
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	LTE band 17
Channels	Middle (23790)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	708.200
Relative permitivity (real part)	42.578
Relative permitivity (imaginary part)	23.233
Conductivity (S/m)	0.904

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

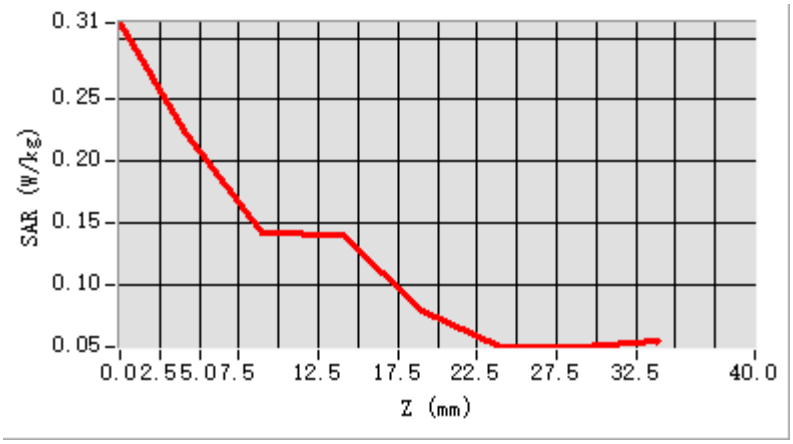
Maximum location: X=-49.00, Y=-37.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

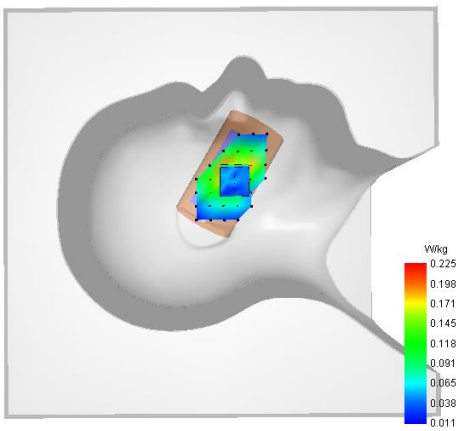
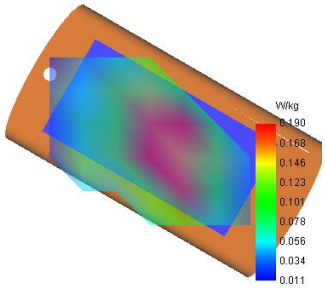
SAR 10g (W/Kg)	0.149
SAR 1g (W/Kg)	0.234
Variation (%)	2.08
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	63.427516

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.312	0.225	0.142	0.141	0.079	0.050	0.049



F. 3D Image

3D screen shot	Hot spot position
	

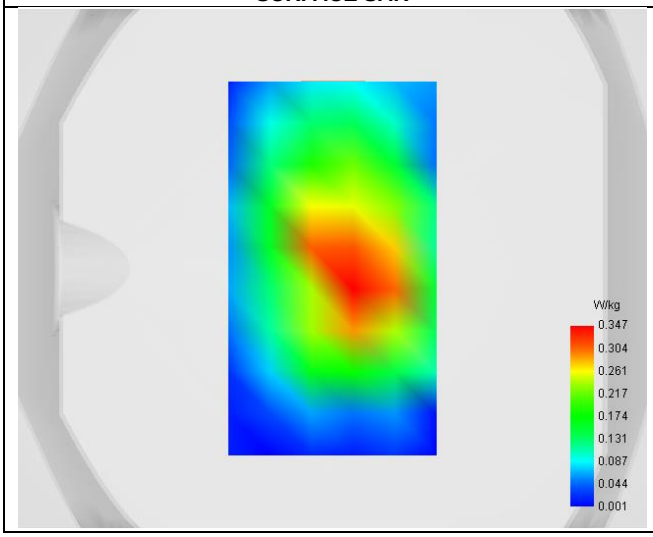
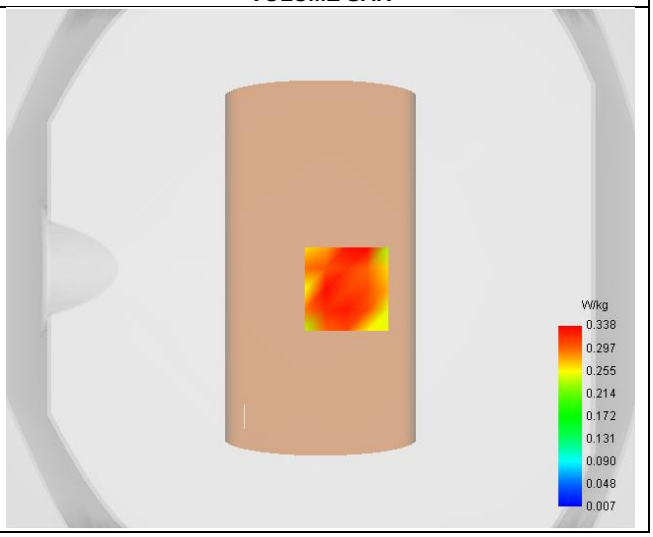
Plot 16: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	1.72
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channels	Middle (23790)
Signal	LTE FDD

B. Permitivity

Frequency (MHz)	708.200
Relative permitivity (real part)	42.578
Relative permitivity (imaginary part)	26.407
Conductivity (S/m)	0.904

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

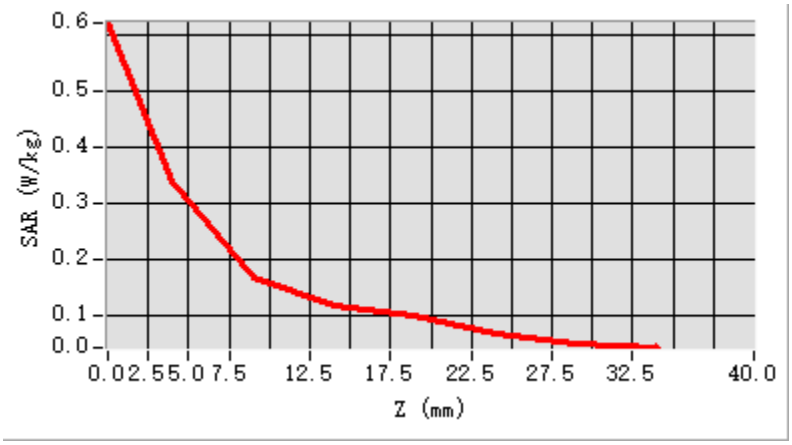
Maximum location: X=10.00, Y=-8.00 ; SAR Peak: 0.55 W/kg

D. SAR 1g & 10g

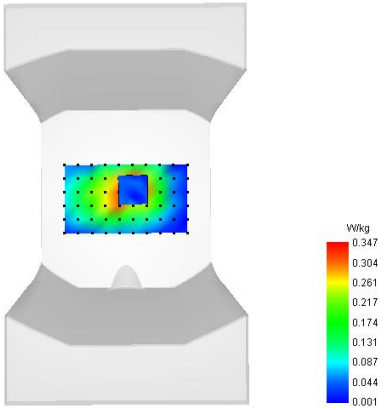
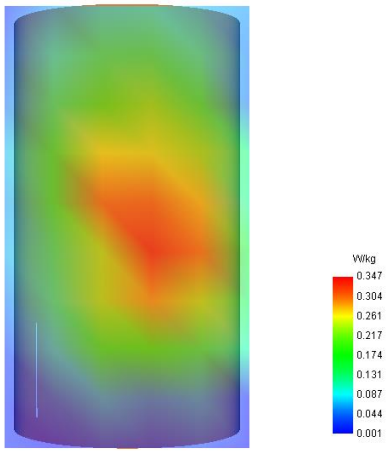
SAR 10g (W/Kg)	0.227
SAR 1g (W/Kg)	0.339
Variation (%)	-1.96
Horizontal validation criteria: minimum distance (mm)	-1.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	58.571221

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.622	0.338	0.169	0.116	0.098	0.069	0.049



F. 3D Image

3D screen shot	Hot spot position
	

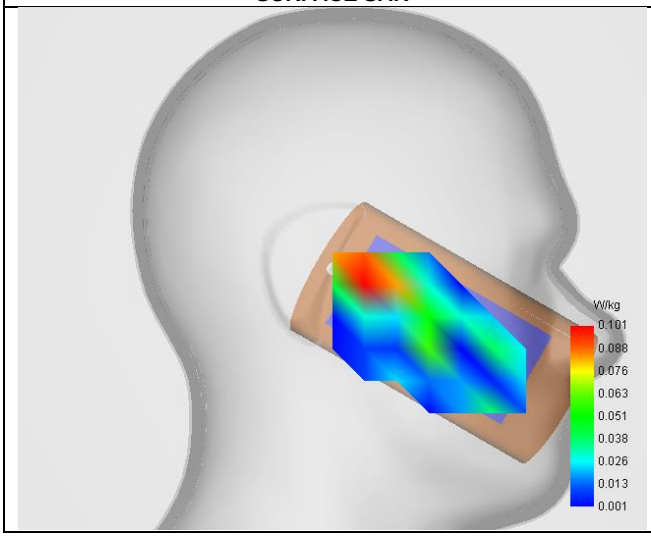
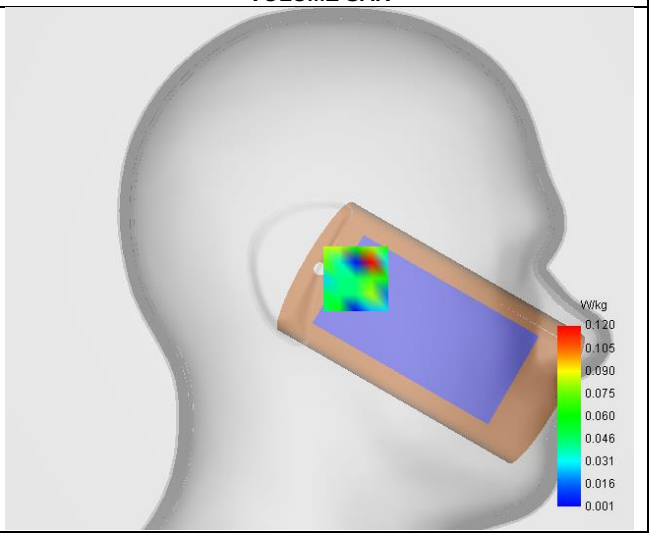
Plot 17: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	2.33
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Left head
Device Position	Cheek
Band	IEEE 802.11b ISM
Channels	Middle (11)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	2462.000
Relative permitivity (real part)	38.494
Relative permitivity (imaginary part)	13.212
Conductivity (S/m)	1.810

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

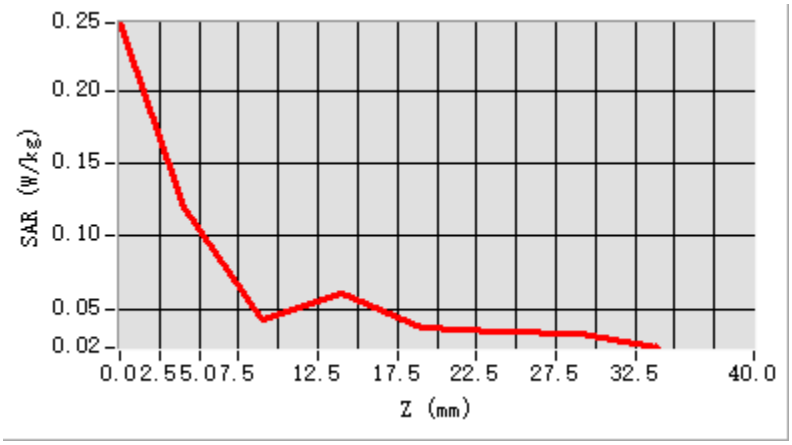
Maximum location: X=-18.00, Y=-5.00 ; SAR Peak: 0.23 W/kg

D. SAR 1g & 10g

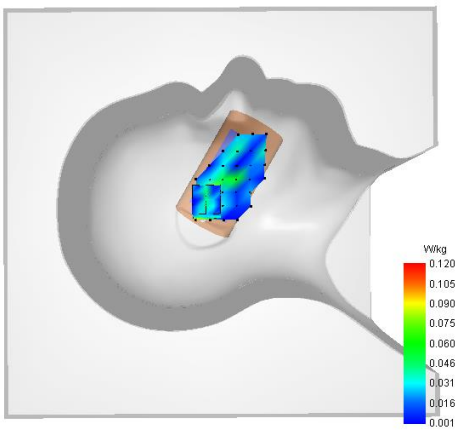
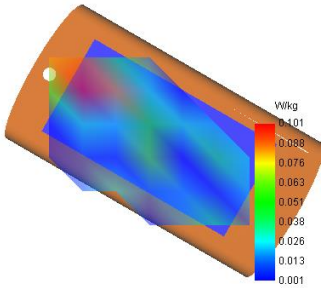
SAR 10g (W/Kg)	0.047
SAR 1g (W/Kg)	0.096
Variation (%)	-1.32
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	46.064830

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.247	0.120	0.042	0.060	0.037	0.035	0.033



F. 3D Image

3D screen shot	Hot spot position
	

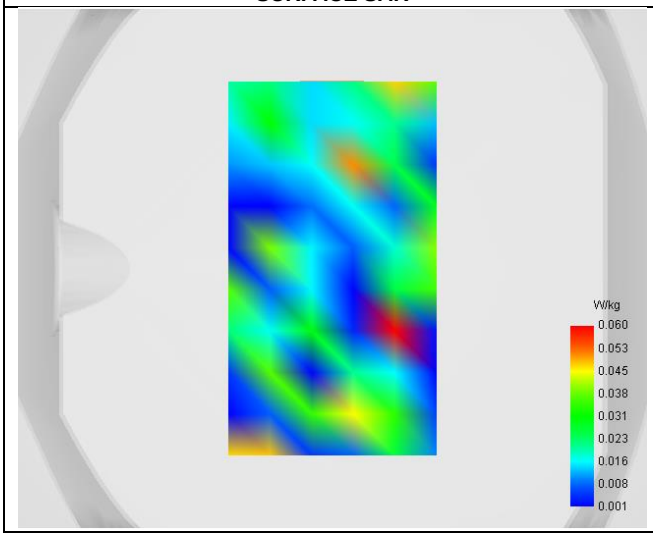
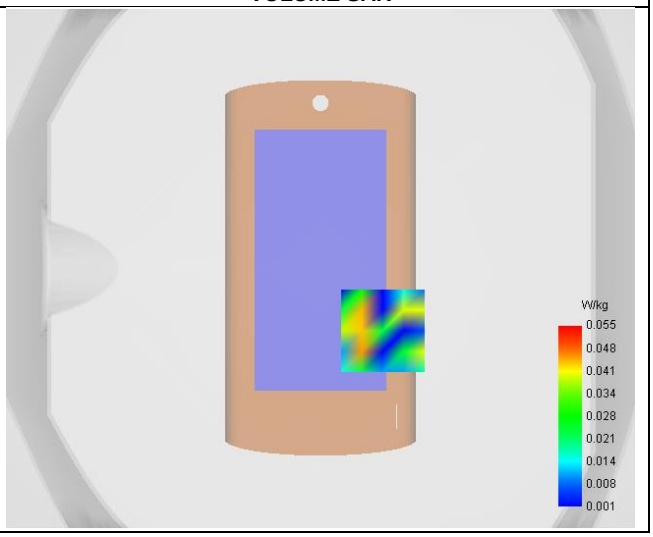
Plot 18: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	2.24
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Higher (11)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	2462.000
Relative permitivity (real part)	38.494
Relative permitivity (imaginary part)	14.375
Conductivity (S/m)	1.810

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

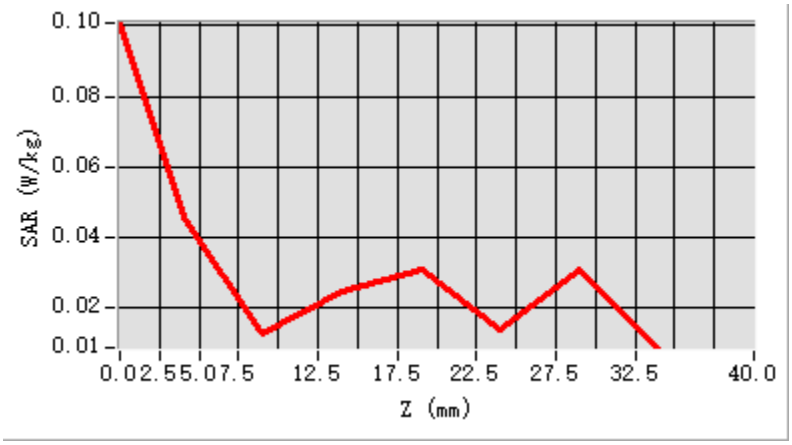
Maximum location: X=24.00, Y=-24.00 ; SAR Peak: 0.14 W/kg

D. SAR 1g & 10g

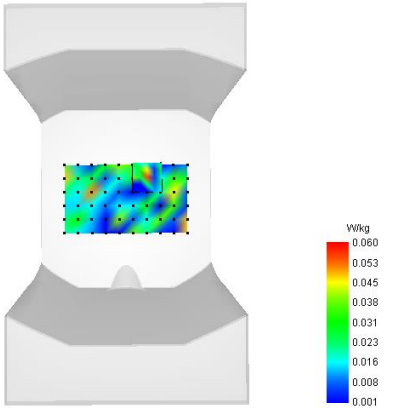
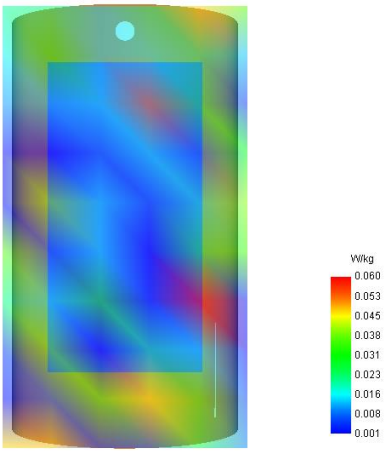
SAR 10g (W/Kg)	0.022
SAR 1g (W/Kg)	0.052
Variation (%)	-3.10
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	2.386062

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.101	0.046	0.012	0.024	0.031	0.014	0.030



F. 3D Image

3D screen shot	Hot spot position
	

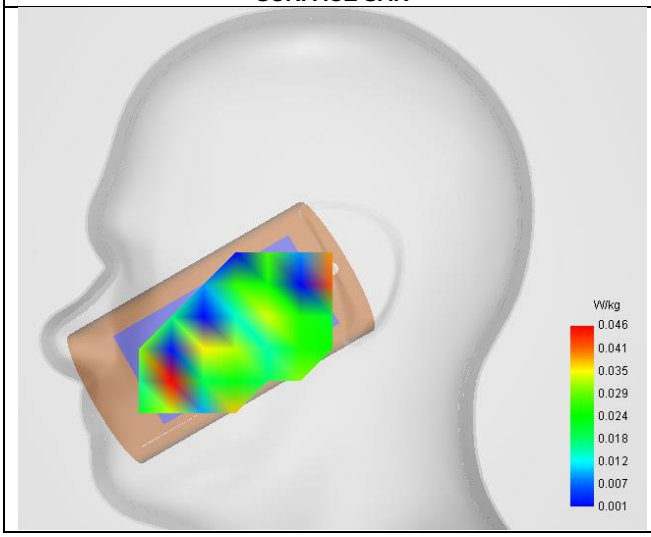
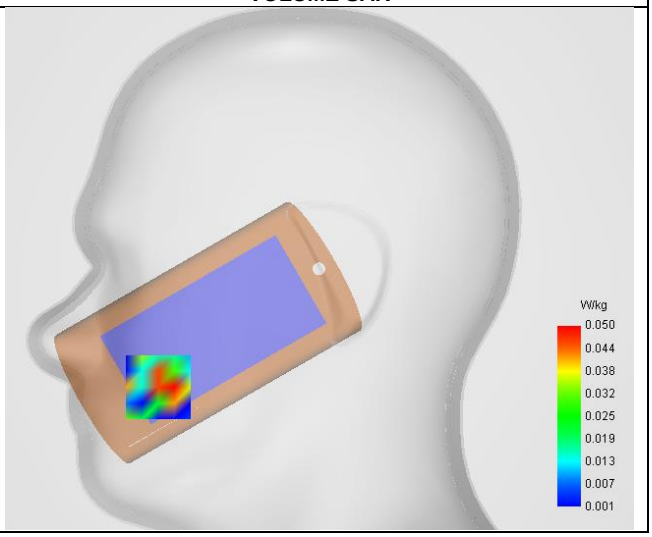
Plot 19: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	2.33
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Right head
Device Position	Cheek
Band	Bluetooth
Channels	Middle (39)
Signal	Bluetooth

B. Permitivity

Frequency (MHz)	2441.000
Relative permitivity (real part)	38.494
Relative permitivity (imaginary part)	13.211
Conductivity (S/m)	1.810

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

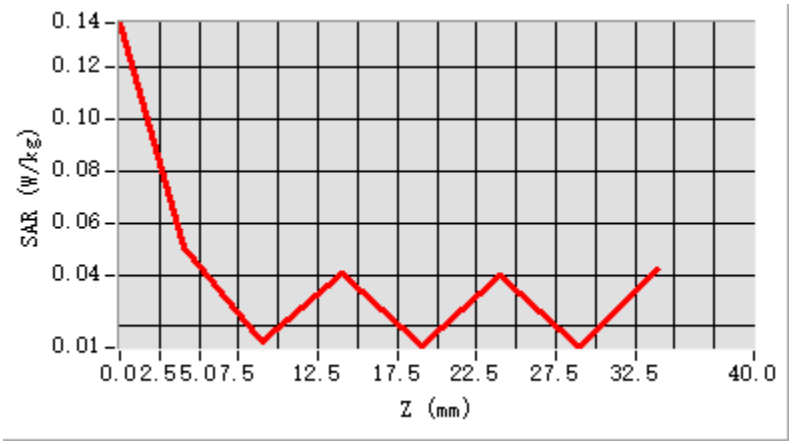
Maximum location: X=-80.00, Y=-59.00 ; SAR Peak: 0.16 W/kg

D. SAR 1g & 10g

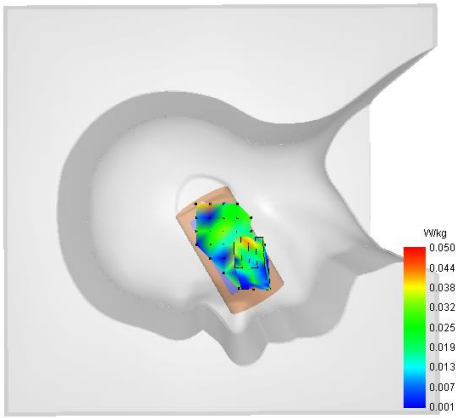
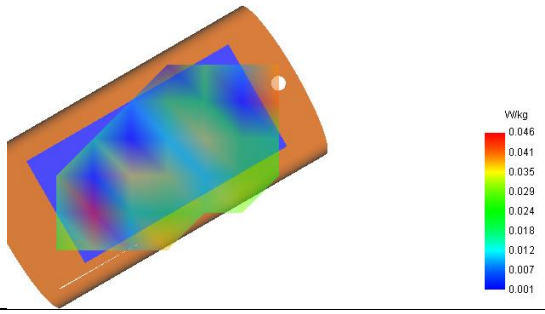
SAR 10g (W/Kg)	0.030
SAR 1g (W/Kg)	0.066
Variation (%)	-2.89
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	18.086303

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.137	0.050	0.014	0.040	0.013	0.040	0.012



F. 3D Image

3D screen shot	Hot spot position
	

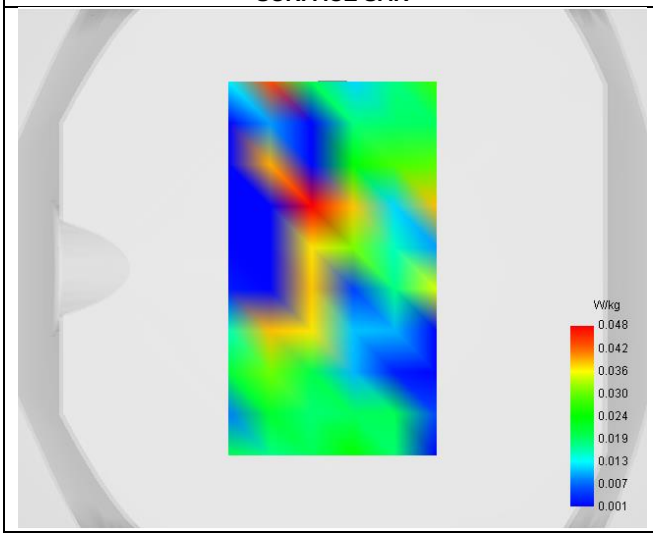
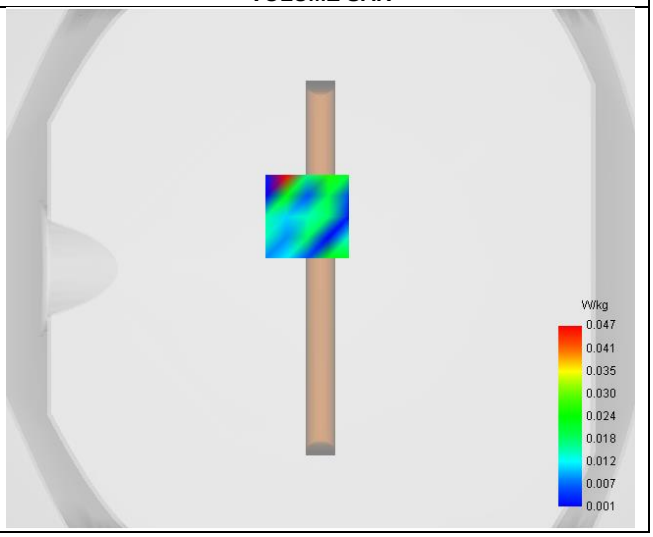
Plot 20: A. Experimental conditions.

Test Date	2022-11-10
Probe	SN 04/22 EPGO364
ConvF	2.24
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Comlete
Phantom	Validation plane
Device Position	Body
Band	Bluetooth
Channels	Middle (39)
Signal	Bluetooth

B. Permitivity

Frequency (MHz)	2441.000
Relative permitivity (real part)	38.494
Relative permitivity (imaginary part)	14.317
Conductivity (S/m)	1.810

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

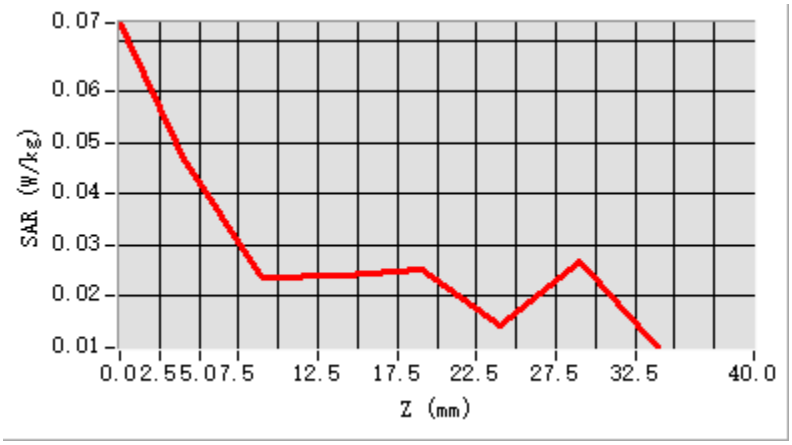
Maximum location: X=-5.00, Y=20.00 ; SAR Peak: 0.09 W/kg

D. SAR 1g & 10g

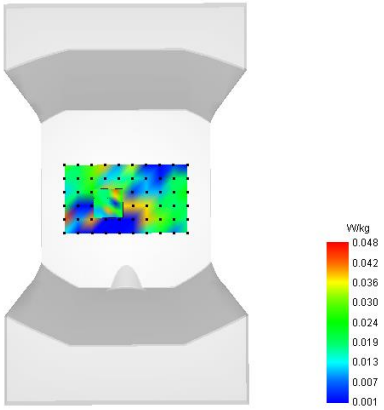
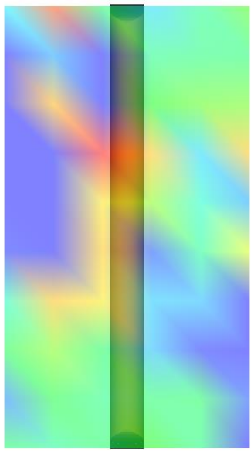
SAR 10g (W/Kg)	0.015
SAR 1g (W/Kg)	0.030
Variation (%)	1.50
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	44.945642

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.073	0.047	0.024	0.024	0.025	0.014	0.027



F. 3D Image

3D screen shot	Hot spot position
	

Appendix C. Probe Calibration and Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※