SAR Test Report

Report No.: AGC02787240503FH01

FCC ID	:	ZDLST12
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Buddi Mini
BRAND NAME	:	buddi
MODEL NAME	:	7600004
APPLICANT	:	Buddi Limited
DATE OF ISSUE	:	May 16, 2024
STANDARD(S)	:	IEEE Std. 1528:2013 FCC 47 CFR Part 2§2.1093 IEEE Std C95.1 ™-2005
REPORT VERSION	:	V1.0

Attestation of Global Compliance(Shenzhen) Co., Ltd.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 16, 2024	Valid	Initial Release

Test Report	
Applicant Name	Buddi Limited
Applicant Address	Talbot House 17 Church Street Rickmansworth, WD3 1DE United Kingdom
Manufacturer Name	Buddi Limited
Manufacturer Address	Talbot House 17 Church Street Rickmansworth, WD3 1DE United Kingdom
Factory Name	Buddi Limited
Factory Address	Talbot House, 17 Church Street, Rickmansworth, Herts, WD3 1DE, UK
Product Designation	Buddi Mini
Brand Name	buddi
Model Name	7600004
EUT Voltage	DC3.7V by battery
Applicable Standard	IEEE Std. 1528:2013 FCC 47 CFR Part 2§2.1093 IEEE Std C95.1 ™-2005
Date of receipt of test item	May 06, 2024
Test Date	May 08, 2024 to May 14, 2024
Report Template	AGCRT-US-4G/SAR (2021-04-20)

Note: The results of testing in this report apply to the product/system which was tested only.

Prepared By	Thea Huang Thea Huang (Project Engineer)	May 16, 2024
Reviewed By	Calvin Liu Calvin Liu (Reviewer)	May 16, 2024
Approved By	Max Zhang Max Zhang (Authorized Officer)	May 16, 2024

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1. SUMMARY OF MAXIMUM SAR VALUE

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

Frequency Band	Highest Reported 1g-SAR(W/kg)	SAR Test Limit (W/kg)
	Body-worn(with 0mm separation)	
GSM 850	0.0076	1.6
PCS 1900	0.0134	
UMTS Band II	0.0106	
UMTS Band V	0.0049	
LTE Band 2	0.0116	
LTE Band 5	0.0035	
LTE Band 12	0.0007	
WIFI 2.4G	0.1881	
ISM	0.0286	
Simultaneous Reported SAR	0.2015	
SAR Test Result	PASS	

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg) specified in IEEE Std. 1528:2013; FCC 47CFR § 2.1093; IEEE/ANSI C95.1:2005 and the following specific FCC Test Procedures:

- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 648474 D04 Handset SAR v01r03
- KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r04
- KDB 941225 D01 3G SAR Procedures v03r01
- KDB 941225 D06 Hotspot Mode v02r01
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02
- KDB 941225 D05 SAR for LTE Devices v02r05

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	Buddi Mini
Test Model	7600004
Hardware Version	v14.0
Software Version	1.42.0
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GSM and GPRS& EGPRS	
Support Band	☒ GSM 850 ☒ PCS 1900 ☐ GSM 900 ☐ DCS 1800
GPRS & EGPRS Type	Class B
GPRS & EGPRS Class	Class 12(1Tx+4Rx, 2Tx+3Rx, 3Tx+2Rx, 4Tx+1Rx)
TX Frequency Range	GSM 850 : 820-850MHz; PCS 1900: 1850-1910MHz;
RX Frequency Range	GSM 850 : 869~894MHz; PCS 1900: 1930~1990MHz
Release Version	R99
Type of modulation	GMSK for GSM/GPRS; GMSK & 8-PSK for EGPRS
Antenna Gain	GSM850: 1dBi; PCS1900: 2.5dBi
Max. Average Power	GSM850: 28.93dBm; PCS1900: 24.25dBm
WCDMA	
Support Band	☒ UMTS FDD Band II ☒ UMTS FDD Band V ☐ UMTS FDD Band IV ☐ UMTS FDD Band I ☐ UMTS FDD Band III ☐ UMTS FDD Band VIII
HS Type	HSPA(HSUPA/HSDPA)
TX Frequency Range	FDD Band II: 1850-1910MHz; FDD Band V: 824-849MHz
RX Frequency Range	FDD Band II: 1930-1990MHz; FDD Band V: 869-894MHz
Release Version	Release 6 and later
Type of modulation	HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK
Antenna Gain	Band II: 2.5dBi; Band V: 1dBi
Max. Average Power	Band II: 22.60dBm; Band V: 20.63dBm
2.4GHz WIFI	
WIFI Specification	☐ 802.11a ☒ 802.11b ☒ 802.11g ☒ 802.11n(20) ☐ 802.11n(40)
Operation Frequency	2412~2462MHz
Avg. Burst Power	11b: 17.56dBm,11g:15.73dBm,11n(20):16.11dBm
Antenna Gain	3.5dBi
ISM	
Operation Frequency	914.5-921.0Mhz
Modulation Type:	FSK
Avg. Burst Power	ISM: 0.67dBm
Antenna Gain	1.0dBi
Antenna Designation:	SMD

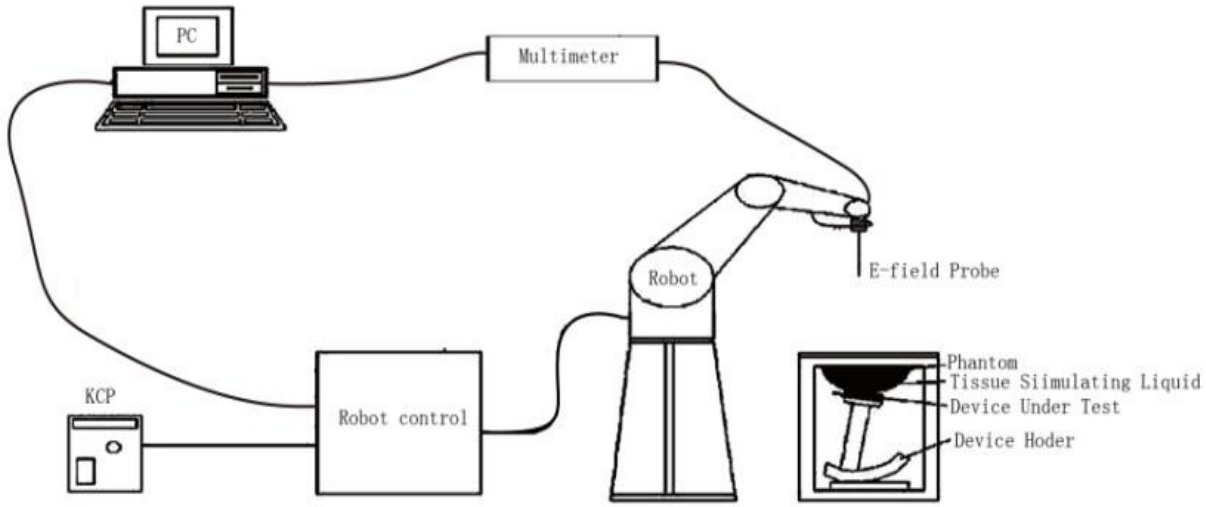
EUT Description(Continue)

LTE	
Support Band	☒FDD Band 2 ☐FDD Band 4 ☒FDD Band 5 ☐FDD Band 7 ☒FDD Band 12 ☐FDD Band 13 ☐FDD Band 14 ☐FDD Band 17 ☐FDD Band 25 ☐FDD Band 26 ☐TDD Band 38 ☐TDD Band 40 ☐TDD Band 41 ☐FDD Band 66 ☐FDD Band 71 (U.S. Bands) ☐FDD Band 1 ☐FDD Band 3 ☐FDD Band 7 ☐FDD Band 8 ☐FDD Band 20 ☐FDD Band 28 ☐TDD Band 38 ☐TDD Band 40 ☐TDD Band 42 ☐TDD Band 43 (Non-U.S. Bands)
TX Frequency Range	Band 2:1850-1910MHz; Band 5:824-849MHz;Band 12:699-716MHz
RX Frequency Range	Band 2:1930-1990MHz; Band 5:869-894MHz; Band 12: 729-746 MHz
Type of modulation	QPSK, 16QAM
Antenna Gain	Band 2: 2.5dBi; Band 5: 1.0dBi; Band 12: 0.5dBi;
Max. Average Power	Band 2: 23.40dBm; Band 5: 23.35dBm; Band 12: 21.60dBm;
Accessories	
Battery	Rated Voltage: 3.7V Charge Limit Voltage: 4.2V Capacity: 1200mAh
Earphone	Brand name: N/A Model No. : N/A

Product	Type	
	☒ Production unit	☐ Identical Prototype

3. SAR MEASUREMENT SYSTEM

3.1. The SATIMO system used for performing compliance tests consists of following items



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

- The PC. It controls most of the bench devices and stores measurement data.A computer running WinXP and the Opensar software.
- The E-Field probe. The probe is a 3-axis system made of 3 distinct dipoles. Each dipole returns a voltage in function of the ambient electric field.
- The Keithley multimeter measures each probe dipole voltages.
- The SAM phantom simulates a human head. The measurement of the electric field is made inside the phantom.
- The liquids simulate the dielectric properties of the human head tissues.
- The network emulator controls the mobile phone under test.
- The validation dipoles are used to measure a reference SAR. They are used to periodically check the bench to make sure that there is no drift of the system characteristics over time.
- The phantom, the device holder and other accessories according to the targeted measurement.

3.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528 and relevant KDB files.) The calibration data are in Appendix D.

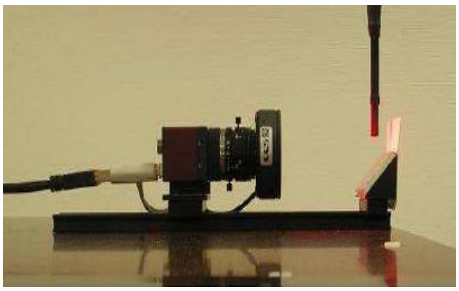
Isotropic E-Field Probe Specification

Model	SSE2	
Manufacture	MVG	
Identification No.	2023-EPGO-414	
Frequency	0.15GHz-7.5GHz Linearity:±0.09dB(0.15GHz-7.5GHz)	
Dynamic Range	0.01W/kg-100W/kg Linearity:±0.09dB	
Dimensions	Overall length:330mm Length of individual dipoles:24.5mm Maximum external diameter:8mm Probe Tip external diameter:2.55mm Distance between dipoles/ probe extremity:12.7mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precisin of better 30%.	

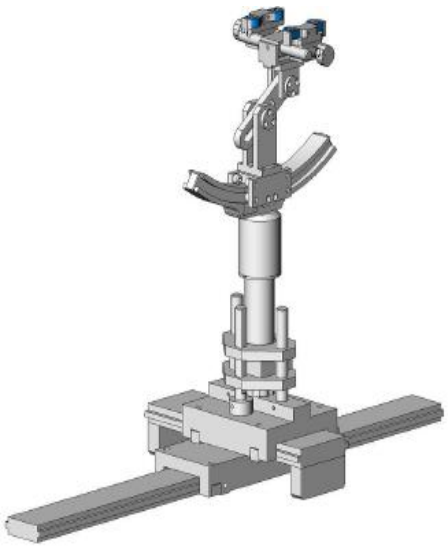
3.3. Robot

The COMOSAR system uses the KUKA robot from SATIMO SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used. The XL robot series have many features that are important for our application: High precision (repeatability 0.02 mm) High reliability (industrial design) Jerk-free straight movements Low ELF interference (the closed metallic construction shields against motor control fields) 6-axis controller	

3.4. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts.The camera is piloted by the main computer with firewire link. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip. The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.	

3.5. Device Holder

The COMOSAR device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR). Thus the device needs no repositioning when changing the angles. The COMOSAR device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.	

3.6. SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas: Left head Right head Flat phantom	

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

4. SAR MEASUREMENT PROCEDURE

4.1. Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in 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 occupational/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 given mass density (ρ). The equation description is as below:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR can be obtained using either of the following equations:

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

$$SAR = c_h \left.\frac{dT}{dt}\right|_{t=0}$$

Where

SAR	is the specific absorption rate in watts per kilogram;
E	is the r.m.s. value of the electric field strength in the tissue in volts per meter;
σ	is the conductivity of the tissue in siemens per metre;
ρ	is the density of the tissue in kilograms per cubic metre;
c_h	is the heat capacity of the tissue in joules per kilogram and Kelvin;
$\frac{dT}{dt} \mid t = 0$	is the initial time derivative of temperature in the tissue in kelvins per second

4.2. SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurement are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface is 2.7mm This distance cannot be smaller than the distance os sensor calibration points to probe tip as `defined in the probe properties,

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in SATIMO software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in db) is specified in the standards for compliance testing. For example, a 2db range is required in IEEE Standard 1528 standards, whereby 3db is a requirement when compliance is assessed in accordance with the ARIB standard (Japan) If one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximum are detected, the number of Zoom Scan has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100MHz to 6GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

Zoom Scan are used to assess the peak spatial SAR value within a cubic average volume containing 1g abd 10g of simulated tissue. The Zoom Scan measures points(refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1g and 10g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB865664 d01 SAR Measurement 100MHz to 6GHz

Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

Step 4: Power Drift Measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the same settings. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

4.3. RF Exposure Conditions

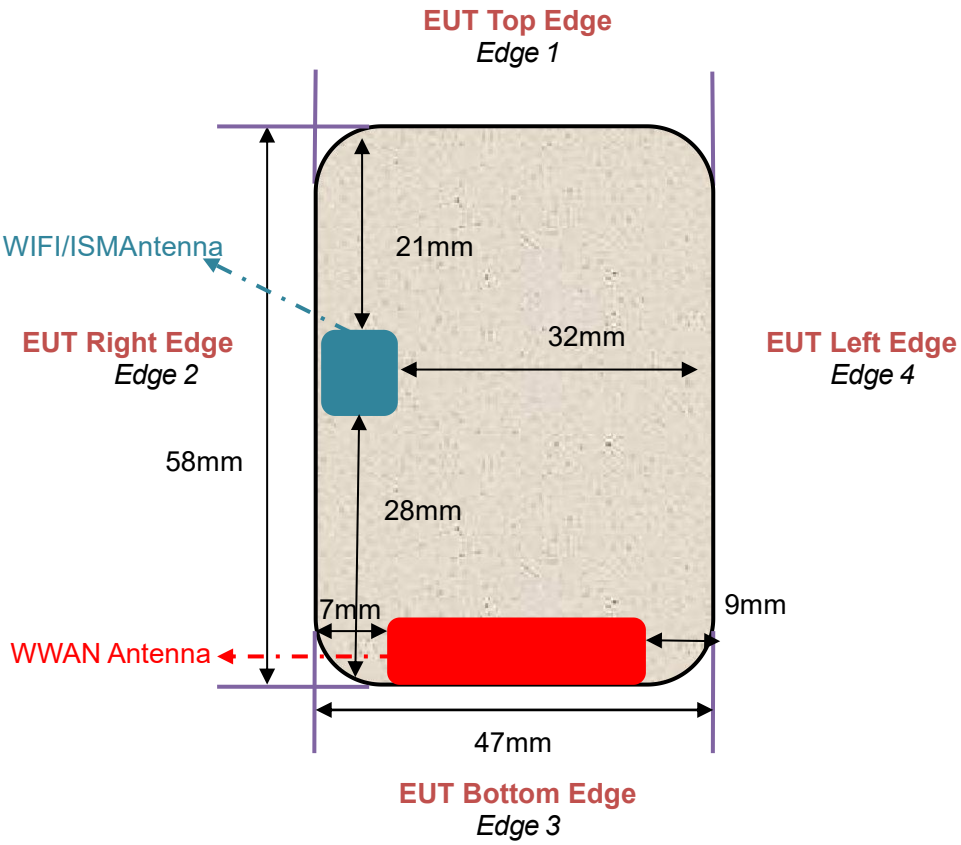
Test Configuration and setting:

The EUT is a model of GSM Portable Mobile Station (MS). It supports GPRS/EGPRS, WCDMA/HSPA, LTE, WIFI, Hotspot mode not supported.

For WWAN SAR testing, the device was controlled by using a base station emulator. Communication between the device and the emulator were established by air link. The distance between the EUT and the antenna is larger than 50cm, and the output power radiated from the emulator antenna is at least 30db smaller than the output power of EUT.

For WLAN testing, the EUT is configured with the WLAN continuous TX tool through engineering command.

Antenna Location: (the back view)



For WWAN mode:

Test Configurations	Antenna to edges/surface	SAR required	Note
Body			
Back	<25mm	Yes	--
Front	<25mm	Yes	--
Edge 1 (Top)	43mm	No	SAR is not required for the distance between the antenna and the edge is >25mm as per KDB 941225 D06 Hotspot SAR
Edge 2 (Right)	7mm	Yes	--
Edge 3 (Bottom)	5mm	Yes	--
Edge 4 (Left)	9mm	Yes	--

For WLAN mode:

Test Configurations	Antenna to edges/surface	SAR required	Note
Body			
Back	<25mm	Yes	--
Front	<25mm	Yes	--
Edge 1 (Top)	21mm	Yes	--
Edge 2 (Right)	5mm	Yes	--
Edge 3 (Bottom)	28mm	No	SAR is not required for the distance between the antenna and the edge is >25mm as per KDB 941225 D06 Hotspot SAR
Edge 4 (Left)	32mm	No	SAR is not required for the distance between the antenna and the edge is >25mm as per KDB 941225 D06 Hotspot SAR

SAR Test Exclusion Consideration for Adjacent Edges
Per KDB 447498 D04 Appendix B:

B.3 MPE-based Exemption: For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP20cm in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{\text{th}}\,(\text{mW}) = ERP_{20\,\text{cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \quad \text{(B.1)}$$

B.4 SAR-based Exemption: This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula (B.2).

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$$P_{\text{th}}\,(\text{mW}) = \begin{cases} ERP_{20\,\text{cm}}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\,\text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \quad \text{(B.2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

:

Function	Fre. (GHz)	Separation distance (cm)	Max Turn up power (dBm)	Max Turn up power (mW)	Pth (mW)
ISM	0.9145	0.5	0.7	1.17	8.14

Note: The Maximum power is less than the Pth, complies with the exemption requirements.

5. TISSUE SIMULATING LIQUID

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15cm. For head SAR testing the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm.The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 10% are listed in 6.2

5.1. The composition of the tissue simulating liquid

Ingredient (% Weight) / **Frequency** (MHz)	**Water**	**Nacl**	**Polysorbate 20**	**DGBE**	**1,2-Propanediol**	**Triton X-100**	**Diethylen glycol monohex ylether**
750 Head	35	2	0.0	0.0	63	0.0	0.0
835 Head	50.36	1.25	48.39	0.0	0.0	0.0	0.0
1750 Head	52.64	0.36	0.0	47	0.0	0.0	0.0
1900 Head	54.9	0.18	0.0	44.92	0.0	0.0	0.0
2300 Head	62.82	0.51	0.0	36.67	0.0	0.0	0.0
2450 Head	71.88	0.16	0.0	7.99	0.0	19.97	0.0
2600 Head	55.242	0.306	0	44.452	0	0	0.0
5000 Head	65.52	0.0	0.0	0.0	0.0	17.24	17.24

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head and body tissue dielectric parameters recommended by the IEEE Std. 1528 have been incorporated in the following table.

Target Frequency (MHz)	head		body	
	εr	σ (S/m)	εr	σ (S/m)
300	45.3	0.87	45.3	0.87
450	43.5	0.87	43.5	0.87
750	**41.9**	**0.89**	**41.9**	**0.89**
835	**41.5**	**0.90**	**41.5**	**0.90**
900	41.5	0.97	41.5	0.97
915	41.5	1.01	41.5	1.01
1450	40.5	1.20	40.5	1.20
1610	40.3	1.29	40.3	1.29
1750	40.1	1.37	40.1	1.37
1800 – 2000	**40.0**	**1.40**	**40.0**	**1.40**
2300	39.5	1.67	39.5	1.67
2450	**39.2**	**1.80**	**39.2**	**1.80**
2600	39.0	1.96	39.0	1.96
3000	38.5	2.40	38.5	2.40
5200	36.0	4.66	36.0	4.66
5300	35.9	4.76	35.9	4.76
5600	35.5	5.07	35.5	5.07
5800	35.3	5.27	35.3	5.27

(εr = relative permittivity, σ = conductivity and ρ = 1000 kg/m3

5.3. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using SATIMO Dielectric Probe Kit and R&S Network Analyzer ZVL6.

Tissue Stimulant Measurement for 750MHz					
	Fr. (MHz)	Dielectric Parameters (±10%)		Tissue Temp [°C]	Test time
		εr 41.9 (37.71-46.09)	δ[s/m] 0.89(0.801-0.979)		
Head	707.5	24.21	0.92	22.5	May 08, 2024
	750	24.35	0.92		

Tissue Stimulant Measurement for 835MHz					
	Fr. (MHz)	Dielectric Parameters (±10%)		Tissue Temp [°C]	Test time
		εr 41.5 (37.35-45.65)	δ[s/m] 0.90(0.81-0.99)		
Head	835	42.32	0.92	23.1	May 09, 2024
	836.4	43.10	0.94		
	836.5	42.41	0.95		
	836.6	42.37	0.94		

Tissue Stimulant Measurement for 1900MHz					
	Fr. (MHz)	Dielectric Parameters (±10%)		Tissue Temp [°C]	Test time
		εr40.00(36.00-44.00)	δ[s/m]1.40(1.26-1.54)		
Head	1880	39.25	1.33	22.1	May 10, 2024
	1900	38.33	1.35		

Tissue Stimulant Measurement for 2450MHz					
	Fr. (MHz)	Dielectric Parameters (±10%)		Tissue Temp [°C]	Test time
		εr39.2(35.28-43.12)	δ[s/m]1.80(1.62-1.98)		
Head	2412	40.32	1.79	21.5	May 14, 2024
	2437	41.22	1.75		
	2450	41.21	1.80		
	2462	40.95	1.78		

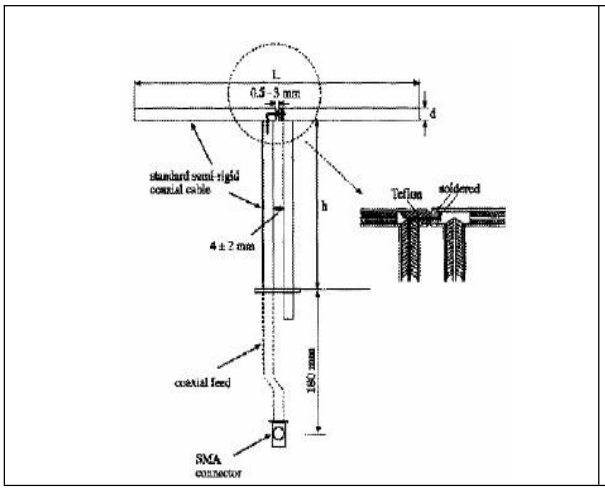
6. SAR SYSTEM CHECK PROCEDURE

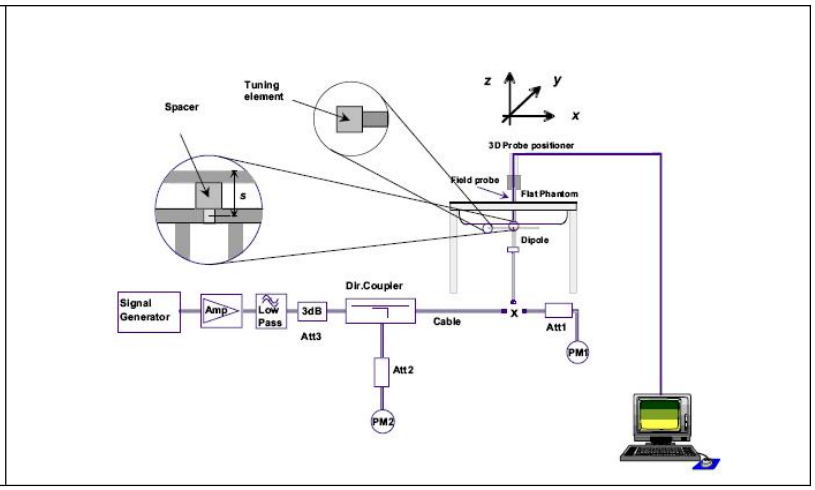
6.1. SAR System Check Procedures

SAR system check is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

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

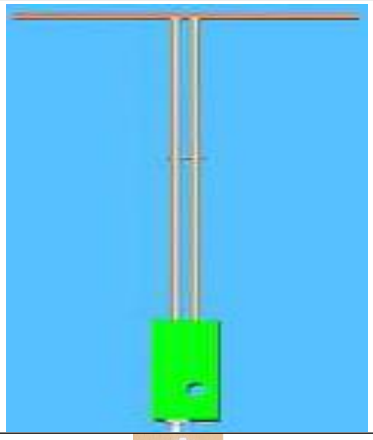
The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system check setup is shown as below.





6.2. SAR System Check

6.2.1. Dipoles

	The dipoles are based on the IEEE-1528 standard, and are complied with mechanical and electrical specifications in line with the requirements of IEEE. the table below provides details for the mechanical and electrical Specifications for the dipoles.
	The dipole is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of IEEE. The table below provides details for the mechanical and electrical specifications for the wave guide.

Frequency	L (mm)	h (mm)	d (mm)
750MHz	176	100	6.35
835MHz	161.0	89.8	3.6
1900MHz	68	39.5	3.6
2450MHz	51.5	30.4	3.6
5000MHz	20.6	40.3	3.6

6.2.2. System Check Result

System Performance Check at 750MHz&835MHz &1900MHz &2450MHz for Head								
Validation Kit: SN 22/16 DIP 0G750-417& SN 15/16 DIP 0G835-399& SN 29/15 DIP 1G900-389& SN 29/15 DIP 2G450-393								
Frequency [MHz]	Target Value(W/kg)		Reference Result (± 10%)		Tested Value(W/kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
750	8.33	5.44	7.497-9.163	4.896-5.984	8.102	5.011	22.5	May 08, 2024
835	9.67	6.14	8.703-10.637	5.526-6.754	9.232	6.033	23.1	May 09, 2024
1900	41.26	20.86	37.134-45.386	18.774-22.946	39.365	19.365	22.1	May 10, 2024
2450	54.32	24.25	48.888-59.752	21.825-26.675	52.336	24.632	21.5	May 14, 2024

Note:
(1) We use a CW signal of 20dBm for system check, and then all SAR value are normalized to 1W forward power. The result must be within ±10% of target value.

7. EUT TEST POSITION

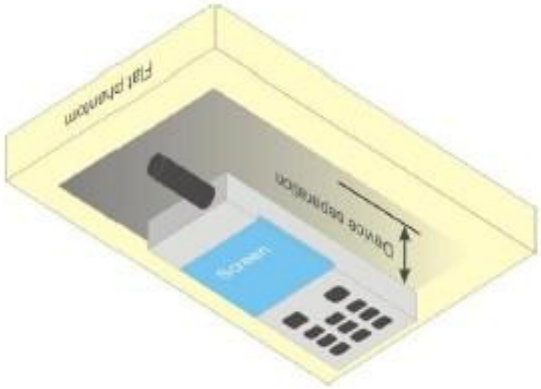
This EUT was tested in **Body back, Body front and 4 edges.**

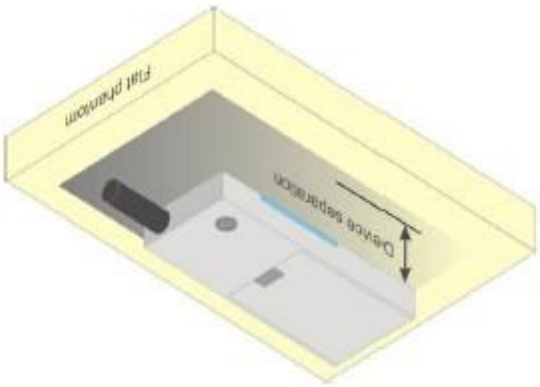
7.1. Body Worn Position

(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 **0mm.**





8. SAR EXPOSURE LIMITS

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

Type Exposure	Uncontrolled Environment Limit (W/kg)
Spatial Peak SAR (1g cube tissue for brain or body)	1.60
Spatial Average SAR (Whole body)	0.08
Spatial Peak SAR (Limbs)	4.0

9. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

10. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Software version	Current calibration date	Next calibration date
SAR Probe	MVG	2023-EPGO-414	N/A	Apr. 30, 2024	Apr. 29, 2025
Phantom	SATIMO	SN_4511_SAM90	N/A	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	N/A	N/A	Validated. No cal required.	Validated. No cal required.
Comm Tester	Agilent-8960	GB46310822	A.13.07	Jun. 03, 2023	Jun. 02, 2024
Comm Tester	R&S- CMW500	121209	V3.7.40	Jun. 01, 2023	May 31, 2024
Multimeter	Keithley 2000	4114939	N/A	Jun. 01, 2023	May 31, 2024
SAR Software	MVG-OpenSAR	N/A	OpenSAR V4_02_35	N/A	N/A
Dipole	SATIMO SID750	SN 22/16 DIP 0G750-417	N/A-	Apr. 28,2022	Apr. 27,2025
Dipole	SATIMO SID835	SN 15/16 DIP 0G835-399	N/A	Apr. 28,2022	Apr. 27,2025
Dipole	SATIMO SID1900	SN 29/15 DIP 1G900-389	N/A	Apr. 28,2022	Apr. 27,2025
Dipole	SATIMO SID2450	SN 29/15 DIP 2G450-393	N/A	Apr. 28,2022	Apr. 27,2025
Signal Generator	Agilent-E4438C	US41461365	V5.03	Jun. 01, 2023	May 31, 2024
Vector Analyzer	Agilent / E4440A	MY44303916	N/A	Jun. 01, 2023	May 31, 2024
Network Analyzer	Rhode & Schwarz ZVL6	SN101443	3.2	Sep. 21, 2023	Sep. 20, 2024
Attenuator	Warison /WATT-6SR1211	S/N:WRJ34AYM2F1	N/A	June 07, 2023	June 06, 2024
Attenuator	Mini-circuits / VAT-10+	31405	N/A	June 07, 2023	June 06, 2024
Amplifier	AS0104-55_55	1004793	N/A	N/A	N/A
Directional Couple	Werlatone/ C5571-10	SN99463	N/A	Feb. 01, 2024	Jan. 31, 2026
Directional Couple	Werlatone/ C6026-10	SN99482	N/A	Feb. 01, 2024	Jan. 31, 2026
Power Sensor	NRP-Z21	1137.6000.02	N/A	Sep. 05, 2023	Sep. 04, 2024
Power Sensor	NRP-Z23	100323	N/A	Jun. 06, 2023	Jun. 05, 2024
Power Viewer	R&S	V2.3.1.0	N/A	N/A	N/A
Calibration standard parts for network sub - port	R&S/ ZV-Z132	N/A	V2.3.1.0	Nov. 11, 2023	Nov. 10, 2024

Note: Per KDB 865664 Dipole SAR Validation, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:
1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.

11. MEASUREMENT UNCERTAINTY

SATIMO Uncertainty- 2024-EPGO-414 Measurement uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	7.000	N	1	1	1	7.000	7.000	∞
Axial Isotropy	E.2.2	1.695	R	1.732	0.707	0.707	0.692	0.692	∞
Hemispherical Isotropy	E.2.2	1.695	R	1.732	0.707	0.707	0.692	0.692	∞
Boundary effect	E.2.3	1.000	R	1.732	1	1	0.577	0.577	∞
Linearity	E.2.4	2.250	R	1.732	1	1	1.299	1.299	∞
System detection limits	E.2.4	1.000	R	1.732	1	1	0.577	0.577	∞
Modulation response	E2.5	3.000	R	1.732	1	1	1.732	1.732	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0.000	R	1.732	1	1	0.000	0.000	∞
Integration Time	E.2.8	1.400	R	1.732	1	1	0.808	0.808	∞
RF ambient conditions-Noise	E.6.1	3.000	R	1.732	1	1	1.732	1.732	∞
RF ambient conditions-reflections	E.6.1	3.000	R	1.732	1	1	1.732	1.732	∞
Probe positioner mechanical tolerance	E.6.2	1.400	R	1.732	1	1	0.808	0.808	∞
Probe positioning with respect to phantom shell	E.6.3	1.400	R	1.732	1	1	0.808	0.808	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.300	R	1.732	1	1	1.328	1.328	∞
Test sample Related									
Test sample positioning	E.4.2	2.6	N	1	1	1	2.60	2.60	∞
Device holder uncertainty	E.4.1	3	N	1	1	1	3.00	3.00	∞
Output power variation—SAR drift measurement	E.2.9	5	R	1.732	1	1	2.89	2.89	∞
SAR scaling	E.6.5	5	R	1.732	1	1	2.89	2.89	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	1.732	1	1	2.309	2.309	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.900	1.596	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.120	2.840	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.150	1.300	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	1.732	0.78	0.71	1.126	1.025	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	1.732	0.23	0.26	0.332	0.375	∞
Combined Standard Uncertainty			RSS				10.616	10.432	
Expanded Uncertainty (95% Confidence interval)			K=2				21.232	20.865	

SATIMO Uncertainty- 2024-EPGO-414 System Validation uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	7.000	N	1	1	1	7.000	7.000	∞
Axial Isotropy	E.2.2	1.695	R	1.732	1.000	1.000	0.979	0.979	∞
Hemispherical Isotropy	E.2.2	1.695	R	1.732	0.000	0.000	0.000	0.000	∞
Boundary effect	E.2.3	1.000	R	1.732	1.000	1.000	0.577	0.577	∞
Linearity	E.2.4	2.250	R	1.732	1.000	1.000	1.299	1.299	∞
System detection limits	E.2.4	1.000	R	1.732	1.000	1.000	0.577	0.577	∞
Modulation response	E2.5	3.000	R	1.732	0.000	0.000	0.000	0.000	∞
Readout Electronics	E.2.6	0.021	N	1.000	1.000	1.000	0.021	0.021	∞
Response Time	E.2.7	0.000	R	1.732	0.000	0.000	0.000	0.000	∞
Integration Time	E.2.8	1.400	R	1.732	0.000	0.000	0.000	0.000	∞
RF ambient conditions-Noise	E.6.1	3.000	R	1.732	1.000	1.000	1.732	1.732	∞
RF ambient conditions-reflections	E.6.1	3.000	R	1.732	1.000	1.000	1.732	1.732	∞
Probe positioner mechanical tolerance	E.6.2	1.400	R	1.732	1.000	1.000	0.808	0.808	∞
Probe positioning with respect to phantom shell	E.6.3	1.400	R	1.732	1.000	1.000	0.808	0.808	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.300	R	1.732	1.000	1.000	1.328	1.328	∞
System validation source									
Deviation of experimental dipole from numerical dipole	E.6.4	5	N	1	1	1	5	5	∞
Input power and SAR drift measurement	8,6.6.4	5	R	1.732	1	1	2.887	2.887	∞
Dipole axis to liquid distance	8,E.6.6	2	R	1.732	1	1	1.155	1.155	∞
Phantom and set-up									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	1.732	1	1	2.309	2.309	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.9	1.596	∞
Liquid conductivity（temperature uncertainty）	E.3.3	4	N	1	0.78	0.71	3.12	2.84	∞
Liquid conductivity（measured）	E.3.3	5	N	1	0.23	0.26	1.15	1.3	M
Liquid permittivity（temperature uncertainty）	E.3.4	2.5	R	1.732	0.78	0.71	1.126	1.025	∞
Liquid permittivity（measured）	E.3.4	2.5	R	1.732	0.23	0.26	0.332	0.375	M
Combined Standard Uncertainty			RSS				10.572	10.387	
Expanded Uncertainty (95% Confidence interval)			K=2				21.143	20.775	

SATIMO Uncertainty- 2024-EPGO-414 System Check uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration drift	E.2.1.3	0.5	N	1	1	1	0.5	0.5	∞
Axial Isotropy	E.2.2	1.695	R	√3	0	0	0	0	∞
Hemispherical Isotropy	E.2.2	1.695	R	√3	0	0	0	0	∞
Boundary effect	E.2.3	1.000	R	√3	0	0	0	0	∞
Linearity	E.2.4	2.250	R	√3	0	0	0	0	∞
System detection limits	E.2.4	1	R	√3	0	0	0	0	∞
Modulation response	E2.5	3	R	√3	0	0	0	0	∞
Readout Electronics	E.2.6	0.021	N	√3	0	0	0	0	∞
Response Time	E.2.7	0	R	√3	0	0	0	0	∞
Integration Time	E.2.8	1.4	R	√3	0	0	0	0	∞
RF ambient conditions-Noise	E.6.1	3	R	√3	0	0	0	0	∞
RF ambient conditions-reflections	E.6.1	3	R	√3	0	0	0	0	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	√3	0	0	0	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	2	N	1	1	1	2	2	∞
Input power and SAR drift measurement	8,6.6.4	5	R	√3	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2	R	√3	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1.000	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1.000	0.78	0.71	3.12	2.84	∞
Liquid permittivity measurement	E.3.3	5	N	1.000	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	√3	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	√3	0.23	0.26	0.33	0.38	M
Combined Standard Uncertainty			RSS				5.562	5.203	
Expanded Uncertainty (95% Confidence interval)			K=2				11.124	10.406	

12. CONDUCTED POWER MEASUREMENT

GSM BAND

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GPRS 850 （1 Slot）	824.2	28.93	-9	19.93
	836.6	28.85	-9	19.85
	848.8	28.52	-9	19.52
GPRS 850 （2 Slot）	824.2	28.78	-6	22.78
	836.6	28.7	-6	22.7
	848.8	28.42	-6	22.42
GPRS 850 （3 Slot）	824.2	**28.41**	**-4.26**	**24.15**
	836.6	28.33	-4.26	24.07
	848.8	28.09	-4.26	23.83
GPRS 850 （4 Slot）	824.2	26.83	-3	23.83
	836.6	26.89	-3	23.89
	848.8	26.85	-3	23.85
EGPRS 850 （1 Slot）	824.2	23.18	-9	14.18
	836.6	23.38	-9	14.38
	848.8	23.5	-9	14.5
EGPRS 850 （2 Slot）	824.2	23.41	-6	17.41
	836.6	23.16	-6	17.16
	848.8	23.59	-6	17.59
EGPRS 850 （3 Slot）	824.2	22.28	-4.26	18.02
	836.6	22.39	-4.26	18.13
	848.8	22.44	-4.26	18.18
EGPRS 850 （4 Slot）	824.2	20.79	-3	17.79
	836.6	20.63	-3	17.63
	848.8	21.06	-3	18.06

GSM BAND CONTINUE

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GPRS1900 （1 Slot）	1850.2	23.56	-9	14.56
	1880	24.25	-9	15.25
	1909.8	23.78	-9	14.78
GPRS1900 （2 Slot）	1850.2	23.91	-6	17.91
	1880	23.75	-6	17.75
	1909.8	23.47	-6	17.47
GPRS1900 （3 Slot）	1850.2	23.13	-4.26	18.87
	1880	22.86	-4.26	18.6
	1909.8	22.68	-4.26	18.42
GPRS1900 （4 Slot）	1850.2	21.26	-3	18.26
	1880	21.64	-3	18.64
	1909.8	21.5	-3	18.5
EGPRS1900 （1 Slot）	1850.2	23.83	-9	14.83
	1880	23.83	-9	14.83
	1909.8	23.64	-9	14.64
EGPRS1900 （2 Slot）	1850.2	23.87	-6	17.87
	1880	23.28	-6	17.28
	1909.8	23.83	-6	17.83
EGPRS1900 （3 Slot）	1850.2	**23.16**	**-4.26**	**18.9**
	1880	23	-4.26	18.74
	1909.8	22.62	-4.26	18.36
EGPRS1900 （4 Slot）	1850.2	21.5	-3	18.5
	1880	21.37	-3	18.37
	1909.8	21.23	-3	18.23

Note 1:
The Frame Power (Source-based time-averaged Power) is scaled the maximum burst average power based on time slots. The calculated methods are show as following:
Frame Power = Max burst power (1 Up Slot) – 9 dB
Frame Power = Max burst power (2 Up Slot) – 6 dB
Frame Power = Max burst power (3 Up Slot) – 4.26 dB
Frame Power = Max burst power (4 Up Slot) – 3 dB
Note 2:
SAR is not required for GPRS (1 Slot) Mode because its output power is less than of Voice Mode

UMTS BAND
HSDPA Setup Configuration:

·The EUT was connected to Base Station Agilent-8960 referred to the Setup Configuration.

·The RF path losses were compensated into the measurements.

·A call was established between EUT and Based Station with following setting:

(1) Set Gain Factors(βc and βd) parameters set according to each

(2) Set RMC 12.2Kbps+HSDPA mode.

(3) Set Cell Power=-86dBm

(4) Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)

(5) Select HSDPA Uplink Parameters

(6) Set Delta ACK, Delta NACK and Delta CQI=8

(7) Set Ack - Nack Repetition Factor to 3

(8) Set CQI Feedback Cycle (k) to 4ms

(9) Set CQI Repetition Factor to 2

(10) Power Ctrl Mode=All Up bits

·The transmitted maximum output power was recorded.

Table C.10.2.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	βc (Note5)	βd	βd (SF)	βc/βd	βHS (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15(Note 4)	15/15(Note 4)	64	12/15(Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: ΔACK, ΔNACK and ΔCQI = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, ΔACK and ΔNACK = 30/15 with β_{hs} = 30/15 * β_c, and ΔCQI = 24/15 with β_{hs} = 24/15 * β_c.
Note 3: CM = 1 for βc/βd =12/15, hs/ c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 4: For subtest 2 the c/ d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to c = 11/15 and d = 15/15.

HSUPA Setup Configuration:

· The EUT was connected to Base Station Agilent-8960 referred to the Setup Configuration.

· The RF path losses were compensated into the measurements.

· A call was established between EUT and Base Station with following setting * :

(1) Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK

(2) Set the Gain Factors (βc and βd) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121

(3) Set Cell Power = -86 dBm

(4) Set Channel Type = 12.2k + HSPA

(5) Set UE Target Power

(6) Power Ctrl Mode= Alternating bits

(7) Set and observe the E-TFCI

(8) Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI

· The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	βc	βd	βd (SF)	βc/βd	βHS (Note 1)	βec	βed (Note 4) (Note 5)	βed (SF)	βed (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	βed1: 47/15 βed2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, ΔACK, ΔNACK and ΔCQI = 30/15 with β_{hs} = 30/15 * β_c . For sub-test 5, ΔACK, ΔNACK and ΔCQI = 5/15 with β_{hs} = 5/15 * β_c .
Note 2: CM = 1 for β c/ β d =12/15, hs/ c=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.
Note 3: For subtest 1 the c/ d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to c = 10/15 and d = 15/15.
Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 5: βed cannot be set directly; it is set by Absolute Grant Value.
Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

UMTS BAND II

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 1900 RMC	1852.4	22.52
	1880	22.43
	1907.6	**22.60**
HSDPA Subtest 1	1852.4	21.26
	1880	20.97
	1907.6	19.79
HSDPA Subtest 2	1852.4	19.96
	1880	21.12
	1907.6	21.01
HSDPA Subtest 3	1852.4	20.36
	1880	19.66
	1907.6	21.27
HSDPA Subtest 4	1852.4	21.19
	1880	20.00
	1907.6	20.16
HSUPA Subtest 1	1852.4	20.33
	1880	21.01
	1907.6	20.77
HSUPA Subtest 2	1852.4	21.08
	1880	20.31
	1907.6	20.3
HSUPA Subtest 3	1852.4	21.03
	1880	20.48
	1907.6	21.15
HSUPA Subtest 4	1852.4	20.23
	1880	20.43
	1907.6	21.07
HSUPA Subtest 5	1852.4	20.6
	1880	21.32
	1907.6	20.46

UMTS BAND V

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 850 RMC	826.4	22.63
	836.4	**22.61**
	846.6	22.42
HSDPA Subtest 1	826.4	21.37
	836.4	21.04
	846.6	20.11
HSDPA Subtest 2	826.4	19.96
	836.4	21.26
	846.6	21.13
HSDPA Subtest 3	826.4	20.48
	836.4	20.17
	846.6	21.18
HSDPA Subtest 4	826.4	20.96
	836.4	20.04
	846.6	19.83
HSUPA Subtest 1	826.4	20.44
	836.4	21.12
	846.6	20.63
HSUPA Subtest 2	826.4	21.44
	836.4	20.66
	846.6	20.51
HSUPA Subtest 3	826.4	21.14
	836.4	20.71
	846.6	21.41
HSUPA Subtest 4	826.4	20.59
	836.4	20.28
	846.6	20.94
HSUPA Subtest 5	826.4	20.47
	836.4	21.21
	846.6	20.43

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

Table 6.1aA: 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 β_c/β_d=12/15, β_{hs}/β_c=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.

LTE (TDD) Considerations

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Table 4.2-2: Uplink-downlink configurations

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle(%)
		0	1	2	3	4	5	6	7	8	9	
0	5ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5ms	D	S	U	U	U	D	S	U	U	D	53.33

Note：Calculated Duty Cycle = Extended cyclic prefix in uplink x (Ts) x # of S + # of U
Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%
where
Ts = 1/(15000 x 2048) seconds

LTE Band

Conducted Power of LTE Band 2(dBm)							
Bandwidth	**Modulation**	**RB size**	**RB offset**	**Target MPR**	**Channel**	**Channel**	**Channel**
					18607	**18900**	**19193**
1.4MHz	QPSK	1	0	0	22.39	22.18	22.41
			3	0	22.46	22.33	22.5
			5	0	22.49	22.28	22.38
		3	0	0	22.27	22.38	22.47
			2	0	22.43	22.54	22.57
			3	0	22.32	22.41	22.35
		6	0	1	21.26	21.29	21.53
	16QAM	1	0	1	21.15	21.02	21.97
			3	1	21.12	21.1	21.53
			5	1	21	20.95	21.25
		3	0	1	21.37	21.07	21.32
			2	1	21.5	21.06	21.26
			3	1	21.55	21.08	21.14
		6	0	2	20.49	20.37	20.46
Bandwidth	**Modulation**	**RB size**	**RB offset**	**Target MPR**	**Channel**	**Channel**	**Channel**
					18615	**18900**	**19185**
3MHz	QPSK	1	0	0	22.4	22.11	22.77
			7	0	22.89	22.51	22.67
			14	0	22.68	22.39	22.42
		8	0	1	21.37	21.32	21.57
			4	1	21.25	21.32	21.54
			7	1	21.27	21.38	21.64
		15	0	1	21.4	21.36	21.59
	16QAM	1	0	1	21.04	21.11	22.12
			7	1	21.13	21.25	21.71
			14	1	21.06	21.24	21.43
		8	0	2	20.36	20.31	20.49
			4	2	20.42	20.19	20.26
			7	2	20.25	20.25	20.13
		15	0	2	20.25	20.24	20.49

Conducted Power of LTE Band 2(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 18625	Channel 18900	Channel 19175
5MHz	QPSK	1	0	0	22.14	22.05	22.57
			13	0	22.64	22.3	22.4
			24	0	22.37	22.07	22.38
		12	0	1	21.31	21.4	21.61
			6	1	21.31	21.33	21.53
			13	1	21.23	21.35	21.34
		25	0	1	21.3	21.26	21.48
	16QAM	1	0	1	21.27	20.96	21.11
			13	1	21.16	21.48	21.07
			24	1	20.86	21.09	20.5
		12	0	2	19.96	20.31	20.72
			6	2	19.9	20.16	20.53
			13	2	19.92	20.29	20.16
		25	0	2	20.19	20.28	20.5
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 18650	Channel 18900	Channel 19150
10MHz	QPSK	1	0	0	22.29	22.34	22.35
			25	0	22.59	22.24	22.93
			49	0	22.74	22.02	22.46
		25	0	1	21.31	21.35	21.49
			13	1	21.32	21.23	21.68
			25	1	21.29	21.23	21.57
		50	0	1	21.24	21.36	21.63
	16QAM	1	0	1	/	/	/
			25	1	/	/	/
			49	1	/	/	/
		25	0	2	/	/	/
			13	2	/	/	/
			25	2	/	/	/
		50	0	2	/	/	/

Conducted Power of LTE Band 2(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 18675	Channel 18900	Channel 19125
15MHz	QPSK	1	0	0	22.72	22.5	22.7
			38	0	22.9	22.53	23.38
			74	0	22.7	22.12	22.55
		36	0	1	21.31	21.41	21.48
			18	1	21.37	21.27	21.56
			39	1	21.34	21.2	21.51
		75	0	1	21.32	21.27	21.52
	16QAM	1	0	1	/	/	/
			38	1	/	/	/
			74	1	/	/	/
		36	0	2	/	/	/
			18	2	/	/	/
			39	2	/	/	/
		75	0	2	/	/	/
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 18700	Channel 18900	Channel 19100
20MHz	QPSK	1	0	0	22.18	22.49	22.17
			50	0	22.36	22.69	22.7
			99	0	22.49	22.72	22.63
		50	0	1	21.34	21.43	21.18
			25	1	21.4	21.32	21.45
			50	1	21.34	21.19	23.4
		100	0	1	21.24	21.41	21.47
	16QAM	1	0	1	/	/	/
			50	1	/	/	/
			99	1	/	/	/
		50	0	2	/	/	/
			25	2	/	/	/
			50	2	/	/	/
		100	0	2	/	/	/

Conducted Power of LTE Band 5(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					20407	20525	20643
1.4MHz	QPSK	1	0	0	22.85	22.53	22.65
			3	0	22.92	22.61	22.58
			5	0	22.86	22.55	22.47
		3	0	0	22.93	22.72	22.79
			2	0	22.92	22.7	22.71
			3	0	22.82	22.72	22.62
		6	0	1	22.07	21.78	21.83
	16QAM	1	0	1	21.53	21.62	21.96
			3	1	21.55	21.69	21.83
			5	1	21.52	21.84	21.53
		3	0	1	21.76	22.02	21.84
			2	1	21.93	21.9	21.77
			3	1	22.02	21.69	21.46
		6	0	2	21.14	20.56	20.84
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					20415	20525	20635
3MHz	QPSK	1	0	0	22.91	22.65	22.82
			7	0	23.22	22.85	22.71
			14	0	23.3	22.49	22.54
		8	0	1	21.84	21.99	21.78
			4	1	21.96	21.77	21.69
			7	1	21.89	21.83	21.67
		15	0	1	21.87	21.84	21.8
	16QAM	1	0	1	21.64	21.47	22.03
			7	1	21.7	21.99	22.21
			14	1	21.73	21.65	21.51
		8	0	2	20.82	20.99	20.88
			4	2	20.86	20.68	20.72
			7	2	20.98	20.84	20.51
		15	0	2	20.73	20.71	20.74

Conducted Power of LTE Band 5(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					20425	20525	20625
5MHz	QPSK	1	0	0	22.66	22.73	22.52
			13	0	23.04	22.64	22.89
			24	0	22.71	22.24	22.54
		12	0	1	21.81	21.84	21.64
			6	1	21.95	21.79	21.69
			13	1	21.77	21.86	21.69
		25	0	1	21.74	21.75	21.7
	16QAM	1	0	1	21.59	21.44	21.19
			13	1	22.01	21.96	22.3
			24	1	21.78	21.32	21.12
		12	0	2	20.36	20.8	20.38
			6	2	20.74	20.55	20.6
			13	2	20.74	20.62	20.59
		25	0	2	20.72	20.88	20.51
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					20450	20525	20600
10MHz	QPSK	1	0	0	22.72	22.66	22.66
			25	0	23.01	22.64	23.03
			49	0	23.04	22.51	22.92
		25	0	1	21.71	21.88	21.66
			13	1	21.84	21.63	21.70
			25	1	21.88	21.73	21.76
		50	0	1	23.35	21.80	21.64
	16QAM	1	0	1	/	/	/
			25	1	/	/	/
			49	1	/	/	/
		25	0	2	/	/	/
			13	2	/	/	/
			25	2	/	/	/
		50	0	2	/	/	/

Conducted Power of LTE Band 12(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23017	23095	23173
1.4MHz	QPSK	1	0	0	20.93	20.86	21.32
			3	0	21.27	20.98	21.34
			5	0	21.16	20.82	21.22
		3	0	0	20.9	21.02	21.56
			2	0	20.92	21.05	21.42
			3	0	20.87	21.01	21.33
		6	0	1	19.92	20.2	20.55
	16QAM	1	0	1	19.64	20.22	20.63
			3	1	19.66	20.18	20.46
			5	1	19.64	19.89	20.26
		3	0	1	19.61	20.01	20.86
			2	1	19.97	20.11	20.73
			3	1	19.84	19.98	20.33
		6	0	2	19.1	19.31	19.8
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23025	23095	23165
3MHz	QPSK	1	0	0	21.06	20.8	21.33
			7	0	21.32	20.87	21.32
			14	0	21.17	20.83	21.29
		8	0	1	19.74	20.17	20.4
			4	1	19.92	20.06	20.31
			7	1	19.97	20.07	20.28
		15	0	1	19.8	20.09	20.43
	16QAM	1	0	1	19.6	19.98	20.64
			7	1	20.41	20.24	20.42
			14	1	19.74	20.03	20.25
		8	0	2	18.71	19.23	19.45
			4	2	18.67	19.03	19.17
			7	2	18.85	18.89	19.18
		15	0	2	18.66	18.87	19.27

Conducted Power of LTE Band 12(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23035	23095	23155
5MHz	QPSK	1	0	0	20.59	20.48	21.03
			13	0	21.02	20.67	21.18
			24	0	20.58	20.87	21.09
		12	0	1	19.66	20.01	20.14
			6	1	19.83	19.94	20.15
			13	1	19.72	19.96	20.17
		25	0	1	19.65	19.96	20.07
	16QAM	1	0	1	19.62	19.42	19.53
			13	1	19.96	19.65	20.28
			24	1	19.77	19.86	19.21
		12	0	2	18.2	18.83	19.14
			6	2	18.78	18.71	19.29
			13	2	18.82	18.66	19.09
		25	0	2	18.5	18.8	19.17
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23060	23095	23130
10MHz	QPSK	1	0	0	20.88	20.58	20.81
			25	0	20.96	21.60	21.52
			49	0	20.80	21.06	21.21
		25	0	1	19.65	19.71	19.93
			13	1	19.46	19.87	20.16
			25	1	19.78	20.06	20.34
		50	0	1	19.87	19.86	20.15
	16QAM	1	0	1	/	/	/
			25	1	/	/	/
			49	1	/	/	/
		25	0	2	/	/	/
			13	2	/	/	/
			25	2	/	/	/
		50	0	2	/	/	/

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.
UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3.3-1 of the 3GPP TS36.101.

Table 6.2.3.3-1 Maximum Power Reduction (MPR) for Power class3

Modulation	Maximum Power Reduction (MPR) for Power[RB]						MPR(dB)
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
QPSK	＞5	＞4	＞8	＞12	＞16	＞18	≤1
16QAM	≤5	≤4	≤8	≤12	≤16	≤18	≤1
16QAM	＞5	＞4	＞8	＞12	＞16	＞18	≤2

The allowed A-MPR values specified below in Table 6.2.4.3-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.3

Table 6.2.4.3-1: Additional Maximum Power Reduction (A-MPR) / Spectrum Emission requirements

Network Signaling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.2-1	1.4,3,5,10,15,20	Table 5.4.2-1	N/A
NS_03	6.6.2.2.3.1	2,4,10, 23, 25,35,36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.3.2	41	5	>6	≤1
			10, 15, 20	Table 6.2.4.3-4	
NS_05	6.6.3.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.4.2-1	N/A
NS_07	6.6.2.2.3.3 6.6.3.3.3.2	13	10	Table 6.2.4.3-2	Table 6.2.4.3-2
NS_08	6.6.3.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4.3-3	Table 6.2.4.3-3
NS_11	6.6.2.2.1 6.6.3.3.13	231	1.4, 3, 5, 10,15,20	Table 6.2.4.3-5	Table 6.2.4.3-5
NS_12	6.6.3.3.5	26	1.4, 3, 5	Table 6.2.4.3-6	Table 6.2.4.3-6
NS_13	6.6.3.3.6	26	5	Table 6.2.4.3-7	Table 6.2.4.3-7
NS_14	6.6.3.3.7	26	10, 15	Table 6.2.4.3-8	Table 6.2.4.3-8
NS_15	6.6.3.3.8	26	1.4, 3, 5, 10, 15	Table 6.2.4.3-9 Table 6.2.4.3-10	Table 6.2.4.3-9, Table 6.2.4.3-10
NS_16	6.6.3.3.9	27	3, 5, 10	Table 6.2.4.3-11, Table 6.2.4.3-12, Table 6.2.4.3-13	
NS_17	6.6.3.3.10 6.6.3.3.11	28 28	5, 10	Table 5.4.2-1	N/A
			5	≥ 2	≤ 1
NS_18			10, 15, 20	≥ 1	≤ 4
NS_19			10, 15, 20	Table 6.2.4.3-15	Table 6.2.4.3-15
NS_20			5, 10, 15, 20	Table 6.2.4.3-14	Table 6.2.4.3-14
…					
NS_20	-	-	-	-	-

WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Avg. Burst Power(dBm)
802.11b	1	01	2412	17.08
		06	2437	17.56
		11	2462	16.86
802.11g	6	01	2412	15.73
		06	2437	15.48
		11	2462	15.49
802.11n(20)	6.5	01	2412	14.74
		06	2437	15.11
		11	2462	16.11

ISM

ISM			
Mode	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
FSK	914.5	0.67	1.17
	917.5	-1.15	0.77
	921	-0.85	0.82

13. TEST RESULTS

13.1. SAR Test Results Summary

13.1.1. Test position and configuration

According to IEEE 1528-2013, Body-worn and 4 Edges SAR was performed with the device 0mm from the phantom.

13.1.2. Operation Mode

1. Per KDB 447498 D01 v06 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
2. Per KDB 865664 D01 v01r04,for each frequency band, if the measured SAR is ≥0.8W/kg, testing for repeated SAR measurement is required , that the highest measured SAR is only to be tested. When the SAR results are near the limit, the following procedures are required for each device to verify these types of SAR measurement related variation concerns by repeating the highest measured SAR configuration in each frequency band.
   (1) When the original highest measured SAR is ≥0.8W/kg, repeat that measurement once.
   (2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is >1.20 or when the original or repeated measurement is ≥1.45 W/kg.
   (3) Perform a third repeated measurement only if the original, first and second repeated measurement is ≥1.5 W/kg and ratio of largest to smallest SAR for the original, first and second measurement is ≥ 1.20.
3. Body-worn exposure conditions are intended to voice call operations, therefore GSM voice call mode is selected to be test.
4. Per KDB 648474 D04 v01r03,when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤1.2W/kg, SAR testing with a headset connected is not required.
5. Per KDB 248227 D01v02r02,for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤1.2W/kg.
6. Per KDB 248227 D01 v02r02 Chapter 5.3.4, SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, the procedures in 5.3.2 are applied to determine the test configuration. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.
   (1) When SAR test exclusion provisions of KDB Publication 447498 D01 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
   (2) When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

7. Per KDB 941225 D06 V02r01, When the same wireless mode transmission configurations for voice and data are required for SAR measurements, the more conservative configuration with a smaller separation distance should be tested for the overlapping SAR configurations.
8. Maximum Scaling SAR in order to calculate the Maximum SAR values to test under the standard Peak Power, Calculation method is as follows:
   Maximum Scaling SAR =tested SAR (Max.) ×[maximum turn-up power (mw)/ maximum measurement output power(mw)]
9. Proximity sensor, just for avoiding the wrong operation in the phone screen when call, and has no influence on output power or SAR result
10. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1RB allocation using the RB offset and required test channel combination with highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
11. Per KDB 941125 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
12. Per KDB 941125 D05v02r05. 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 1RB allocation and the highest reported SAR is >1.45 W/kg, the remaining required test channels must also be tested.
13. Per KDB 941125 D05v02r05. 16QAM output power for each RB allocation configuration is not 1/2 dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤1.45W/kg, Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
14. Per KDB 941125 D05v02r05. Smaller bandwidth output power for each RB allocation configuration is >not 1/2 dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤1.45W/kg. Per KDB 941125 D05v02r05, smaller bandwidth SAR testing is not required.

13.1.3. Test Result

SAR MEASUREMENT										
Depth of Liquid (cm):>15				Relative Humidity (%): 55						
Product: Buddi Mini										
Test Mode: GSM850 with GMSK modulation										
Position	**Mode**	**Ch.**	**Freq. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) with 100% duty cycle (W/kg)**	**SAR (1g) with 0.22% duty cycle (W/kg)**	**Max. Tune up Power**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit (W/kg)**
SIM 1 Card										
Body back	GPRS-3 slot	190	836.6	2.82	0.354	0.0008	28.5	28.33	0.0008	1.6
Body front	GPRS-3 slot	190	836.6	-1.29	3.316	0.0073	28.5	28.33	0.0076	1.6
Edge 1(Right)	GPRS-3 slot	190	836.6	0.69	0.2	0.0004	28.5	28.33	0.0005	1.6
Edge 2(Bottom)	GPRS-3 slot	190	836.6	-2.05	0.638	0.0014	28.5	28.33	0.0015	1.6
Edge 3(Left)	GPRS-3 slot	190	836.6	1.94	0.316	0.0007	28.5	28.33	0.0007	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds,
so duty cycle is 0.22%.

SAR MEASUREMENT										
Depth of Liquid (cm):>15				Relative Humidity (%): 55						
Product: Buddi Mini										
Test Mode: PCS1900 with GMSK modulation										
Position	**Mode**	**Ch.**	**Freq. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) with 100% duty cycle (W/kg)**	**SAR (1g) with 0.22% duty cycle (W/kg)**	**Max. Tune up Power**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit (W/kg)**
SIM 1 Card										
Body back	EGPRS-3 slot	661	1880	1.27	2.105	0.0046	23.5	23.16	0.0050	1.6
Body front	EGPRS-3 slot	661	1880	2.72	5.619	0.0124	23.5	23.16	0.0134	1.6
Edge 1(Right)	EGPRS-3 slot	661	1880	-2.86	2.765	0.0061	23.5	23.16	0.0066	1.6
Edge 2(Bottom)	EGPRS-3 slot	661	1880	2.30	0.893	0.0020	23.5	23.16	0.0021	1.6
Edge 3(Left)	EGPRS-3 slot	661	1880	-3.26	1.372	0.0030	23.5	23.16	0.0033	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds,
so duty cycle is 0.22%.

SAR MEASUREMENT										
Depth of Liquid (cm):>15			Relative Humidity (%): 55							
Product: Buddi Mini										
Test Mode: WCDMA Band II with QPSK modulation										
Position	**Mode**	**Ch.**	**Freq. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) with 100% duty cycle (W/kg)**	**SAR (1g) with 0.22% duty cycle (W/kg)**	**Max. Tune up Power**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit (W/kg)**
Body back	RMC 12.2kbps	9400	1880	-1.27	1.872	0.0041	22.43	23	0.0036	1.6
Body front	RMC 12.2kbps	9400	1880	0.39	5.501	0.0121	22.43	23	0.0106	1.6
Edge 1(Right)	RMC 12.2kbps	9400	1880	-1.58	2.976	0.0065	22.43	23	0.0057	1.6
Edge 2(Bottom)	RMC 12.2kbps	9400	1880	-1.19	0.952	0.0021	22.43	23	0.0018	1.6
Edge 3(Left)	RMC 12.2kbps	9400	1880	3.92	1.523	0.0034	22.43	23	0.0029	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds, so duty cycle is 0.22%.

SAR MEASUREMENT										
Depth of Liquid (cm):>15			Relative Humidity (%): 55							
Product: Buddi Mini										
Test Mode: WCDMA Band V with QPSK modulation										
Position	**Mode**	**Ch.**	**Freq. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) with 100% duty cycle (W/kg)**	**SAR (1g) with 0.22% duty cycle (W/kg)**	**Max. Tune up Power**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit (W/kg)**
Body back	RMC 12.2kbps	4183	836.4	-3.69	0.403	0.0009	23	22.61	0.0010	1.6
Body front	RMC 12.2kbps	4183	836.4	1.17	2.043	0.0045	23	22.61	0.0049	1.6
Edge 1(Right)	RMC 12.2kbps	4183	836.4	3.10	1.372	0.0030	23	22.61	0.0033	1.6
Edge 2(Bottom)	RMC 12.2kbps	4183	836.4	-0.83	0.633	0.0014	23	22.61	0.0015	1.6
Edge 3(Left)	RMC 12.2kbps	4183	836.4	2.15	0.882	0.0019	23	22.61	0.0021	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds, so duty cycle is 0.22%.

SAR MEASUREMENT													
Depth of Liquid (cm):>15					Relative Humidity (%):								
Product: Buddi Mini													
Test Mode: LTE Band 2													
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) with 100% duty cycle (W/kg)	SAR (1g) with 0.22% duty cycle (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/kg)	Limit (W/kg)
			UL RB Allocation	UL RB START									
20	QPSK	Body back	1	0	18900	1880	3.68	1.499	0.0033	23	22.49	0.0037	1.6
		Body front	1	0	18900	1880	-2.66	4.705	0.0103	23	22.49	0.0116	1.6
		Edge 1(Right)	1	0	18900	1880	-0.81	2.105	0.0046	23	22.49	0.0052	1.6
		Edge 2(Bottom)	1	0	18900	1880	2.72	0.693	0.0015	23	22.49	0.0017	1.6
		Edge 3(Left)	1	0	18900	1880	2.17	1.416	0.0031	23	22.49	0.0035	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds,
so duty cycle is 0.22%.

SAR MEASUREMENT													
Depth of Liquid (cm):>15					Relative Humidity (%):								
Product: Buddi Mini													
Test Mode: LTE Band 5													
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) with 100% duty cycle (W/kg)	SAR (1g) with 0.22% duty cycle (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/kg)	Limit (W/kg)
			UL RB Allocation	UL RB START									
10	QPSK	Body back	1	0	20525	836.5	-1.36	0.364	0.0008	23.5	22.66	0.0010	1.6
		Body front	1	0	20525	836.5	2.81	1.314	0.0029	23.5	22.66	0.0035	1.6
		Edge 1(Right)	1	0	20525	836.5	2.67	0.133	0.0003	23.5	22.66	0.0004	1.6
		Edge 2(Bottom)	1	0	20525	836.5	0.13	0.193	0.0004	23.5	22.66	0.0005	1.6
		Edge 3(Left)	1	0	20525	836.5	-3.59	0.111	0.0002	23.5	22.66	0.0003	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds,
so duty cycle is 0.22%.

SAR MEASUREMENT													
Depth of Liquid (cm):>15					Relative Humidity (%):								
Product: Buddi Mini													
Test Mode: LTE Band 12													
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) with 100% duty cycle (W/kg)	SAR (1g) with 0.22% duty cycle (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/kg)	Limit (W/kg)
			UL RB Allocation	UL RB START									
10	QPSK	Body back	1	0	23095	707.5	-0.69	0.274	0.0006	22	20.58	0.0008	1.6
		Body front	1	0	23095	707.5	-2.58	0.215	0.0005	22	20.58	0.0007	1.6
		Edge 1(Right)	1	0	23095	707.5	-0.12	0.206	0.0005	22	20.58	0.0006	1.6
		Edge 2(Bottom)	1	0	23095	707.5	2.92	0.156	0.0003	22	20.58	0.0005	1.6
		Edge 3(Left)	1	0	23095	707.5	1.17	0.180	0.0004	22	20.58	0.0005	1.6

Note:
· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 10mm of all above table.
· As for 2G/3G/4G function:1 transmission a maximum of every 15 minutes, an uplink average of 2 seconds connected to the GPRS/3G network for each transmission. Over a 1hour period the transmission is 8 seconds,
so duty cycle is 0.22%.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%):					
Product: Buddi Mini									
Test Mode:802.11b									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/kg)	Limit (W/kg)
Body back	DTS	6	2437	0.24	0.06	18	17.56	0.0664	1.6
Body front	DTS	1	2412	-0.48	0.133	18	17.08	0.1644	1.6
Body front	DTS	6	2437	3.84	0.17	18	17.56	0.1881	1.6
Body front	DTS	11	2462	-3.51	0.141	18	16.86	0.1833	1.6
Edge 1 (Top)	DTS	6	2437	2.91	0.048	18	17.56	0.0531	1.6
Edge 2(Right)	DTS	6	2437	3.59	0.162	18	17.56	0.1793	1.6

Note:
· According to KDB248227, SAR is not required for 802.11n HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11a/b channels.
· All of above “DTS” means data transmitters.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

Simultaneous Multi-band Transmission Evaluation:

Application Simultaneous Transmission information:

NO	Simultaneous state	Portable Handset		
		Head	Body-worn	Hotspot
1	GSM (Data) + WLAN 2.4GHz	-	Yes	-
2	WCDMA+ WLAN 2.4GHz	-	Yes	-
3	LTE + WLAN 2.4GHz	-	Yes	-
4	GSM (Data) + ISM	-	Yes	-
5	WCDMA+ ISM	-	Yes	-
6	LTE + ISM	-	Yes	-

NOTE:

1. Simultaneous with every transmitter must be the same test position.
2. According to KDB 447498 D01 4.3.1, Standalone SAR test exclusion is as follow:
   For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
   [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR[30], where
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation[31]
   - The result is rounded to one decimal place for comparison
   - The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

   The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.
3. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
4. According to KDB 447498 D01 4.3.2, simultaneous transmission SAR test exclusion is as follow:
   (1) 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.
   (2) Any transmitters and antennas should be considered when calculating simultaneous mode.
   (3) For mobile phone and PC, it's the sum of all transmitters and antennas at the same mode with same position in each applicable exposure condition
   (4)When the standalone SAR test exclusion of section 4.3.2 is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to det
   (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
   where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

5. When the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The simultaneous transmitting antennas in each operating mode and exposure condition combination must be considered one pair at a time to determine the SAR to peak location separation ratio to qualify for test exclusion. The ratio is determined by (SAR1 + SAR2)1.5/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.
6. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.

Estimated SAR		Max Power including Tune-up Tolerance		Separation Distance (mm)	Estimated SAR (W/kg)
		dBm	mW		
ISM	Body	0.5	1.122	≤5	0.0286

Sum of the SAR for GSM 850 &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		GSM 850	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0008	0.0664	0.0286	0.0672	No
	Body front	0.0076	0.1881	0.0286	0.1957	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0005	0.1793	0.0286	0.1798	No
	Edge (Bottom)	0.0015	-	-	0.0015	No
	Edge (Left)	0.0007	-	-	0.0007	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.

·SPLSR mean is “The SAR to Peak Location Separation Ratio “

Sum of the SAR for GSM 1900 &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		PCS 1900	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0050	0.0664	0.0286	0.0714	No
	Body front	0.0134	0.1881	0.0286	0.2015	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0066	0.1793	0.0286	0.1859	No
	Edge (Bottom)	0.0021	-	-	0.0021	No
	Edge (Left)	0.0033	-	-	0.0033	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.
·SPLSR mean is “The SAR to Peak Location Separation Ratio “

Sum of the SAR for WCDMA Band II &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		WCDMA Band II	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0036	0.0664	0.0286	0.0700	No
	Body front	0.0106	0.1881	0.0286	0.1987	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0057	0.1793	0.0286	0.1850	No
	Edge (Bottom)	0.0018	-	-	0.0018	No
	Edge (Left)	0.0029	-	-	0.0029	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.
·SPLSR mean is “The SAR to Peak Location Separation Ratio “

Sum of the SAR for WCDMA Band V &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		WCDMA Band V	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0010	0.0664	0.0286	0.0674	No
	Body front	0.0049	0.1881	0.0286	0.1930	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0033	0.1793	0.0286	0.1826	No
	Edge (Bottom)	0.0015	-	-	0.0015	No
	Edge (Left)	0.0021	-	-	0.0021	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.
·SPLSR mean is “The SAR to Peak Location Separation Ratio “

Sum of the SAR for LTE Band 2 &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		LTE Band 2	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0037	0.0664	0.0286	0.0701	No
	Body front	0.0116	0.1881	0.0286	0.1998	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0052	0.1793	0.0286	0.1845	No
	Edge (Bottom)	0.0017	-	-	0.0017	No
	Edge (Left)	0.0035	-	-	0.0035	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.
·SPLSR mean is “The SAR to Peak Location Separation Ratio “

Sum of the SAR for LTE Band 5 &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		LTE Band 5	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0010	0.0664	0.0286	0.0674	No
	Body front	0.0035	0.1881	0.0286	0.1916	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0004	0.1793	0.0286	0.1797	No
	Edge (Bottom)	0.0005	-	-	0.0005	No
	Edge (Left)	0.0003	-	-	0.0003	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.
·SPLSR mean is “The SAR to Peak Location Separation Ratio “

Sum of the SAR for LTE Band 12 &Wi-Fi&ISM:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/kg)	SPLSR (Yes/No)
		LTE Band 12	WI-Fi DTS Band	ISM		
Body-worn	Body back	0.0008	0.0664	0.0286	0.0672	No
	Body front	0.0007	0.1881	0.0286	0.1888	No
	Edge (Top)	-	0.0531	0.0286	0.0531	No
	Edge (Right)	0.0006	0.1793	0.0286	0.1799	No
	Edge (Bottom)	0.0005	-	-	0.0005	No
	Edge (Left)	0.0005	-	-	0.0005	No

Note:

·According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/kg, SPLSR assessment is not required.
·SPLSR mean is “The SAR to Peak Location Separation Ratio “

APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab **Date: May 08, 2024**

System Check Head 750 MHz

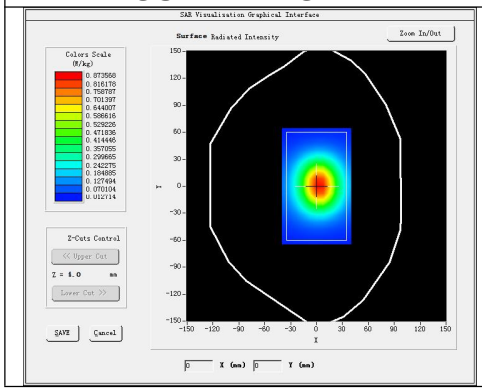
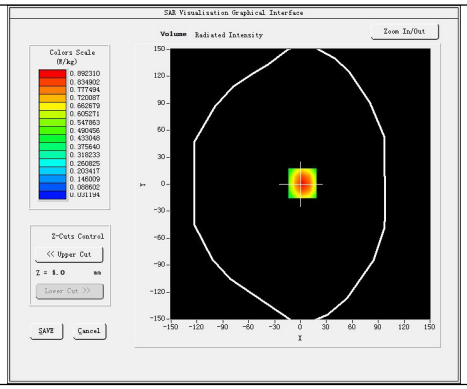
DUT: Dipole 750 MHz Type: SID 750

Communication System CW; Communication System Band: D750 (750.0 MHz); Duty Cycle: 1:1; Conv.F=2.04
Frequency: 750 MHz; Medium parameters used: f = 750 MHz; σ=0.921 mho/m; εr =24.35; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=20dBm
Ambient temperature (℃):22.7, Liquid temperature (℃): 22.5

SATIMO Configuration:

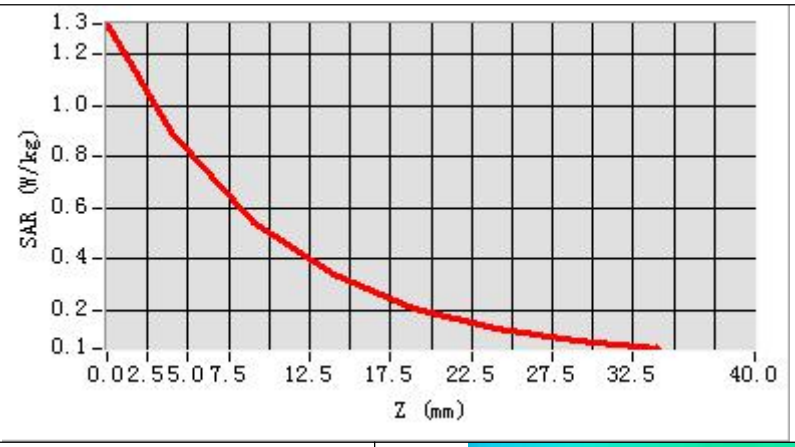
- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

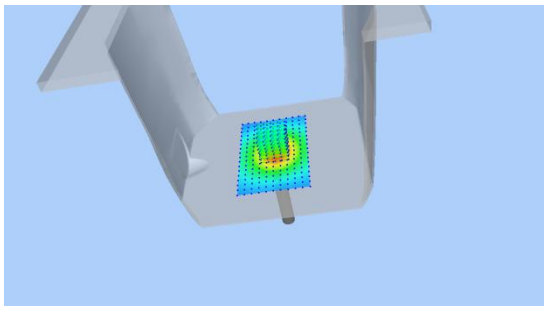
Configuration/System Check 750MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 750MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

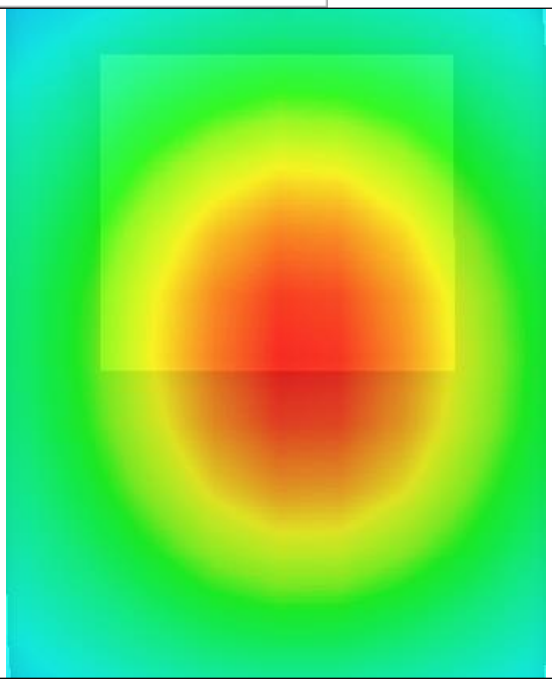
SURFACE SAR	VOLUME SAR
	

Maximum location: X=2.00, Y=1.00

SAR 10g (W/Kg)	0.501125
SAR 1g (W/Kg)	0.810153





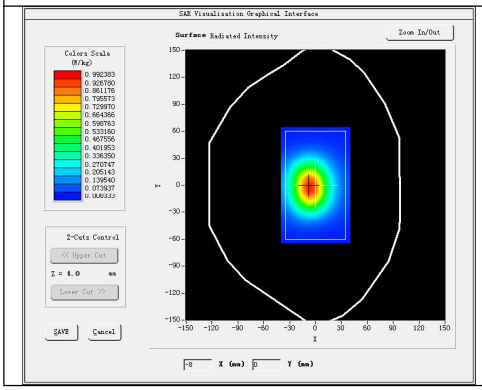
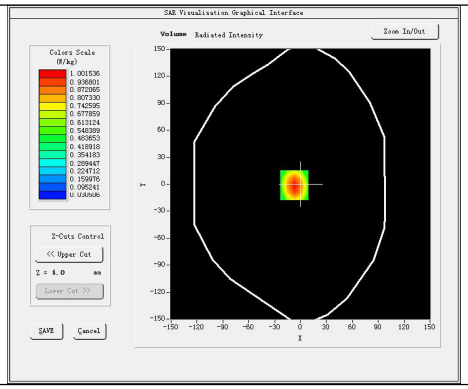


Test Laboratory: AGC Lab **Date: May 09, 2024**
System Check Head 835 MHz
DUT: Dipole 835 MHz Type: SID 835
Communication System CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1; Conv.F=1.89
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.92 mho/m; εr =42.32; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=20dBm
Ambient temperature (℃):23.3, Liquid temperature (℃): 23.1

SATIMO Configuration:

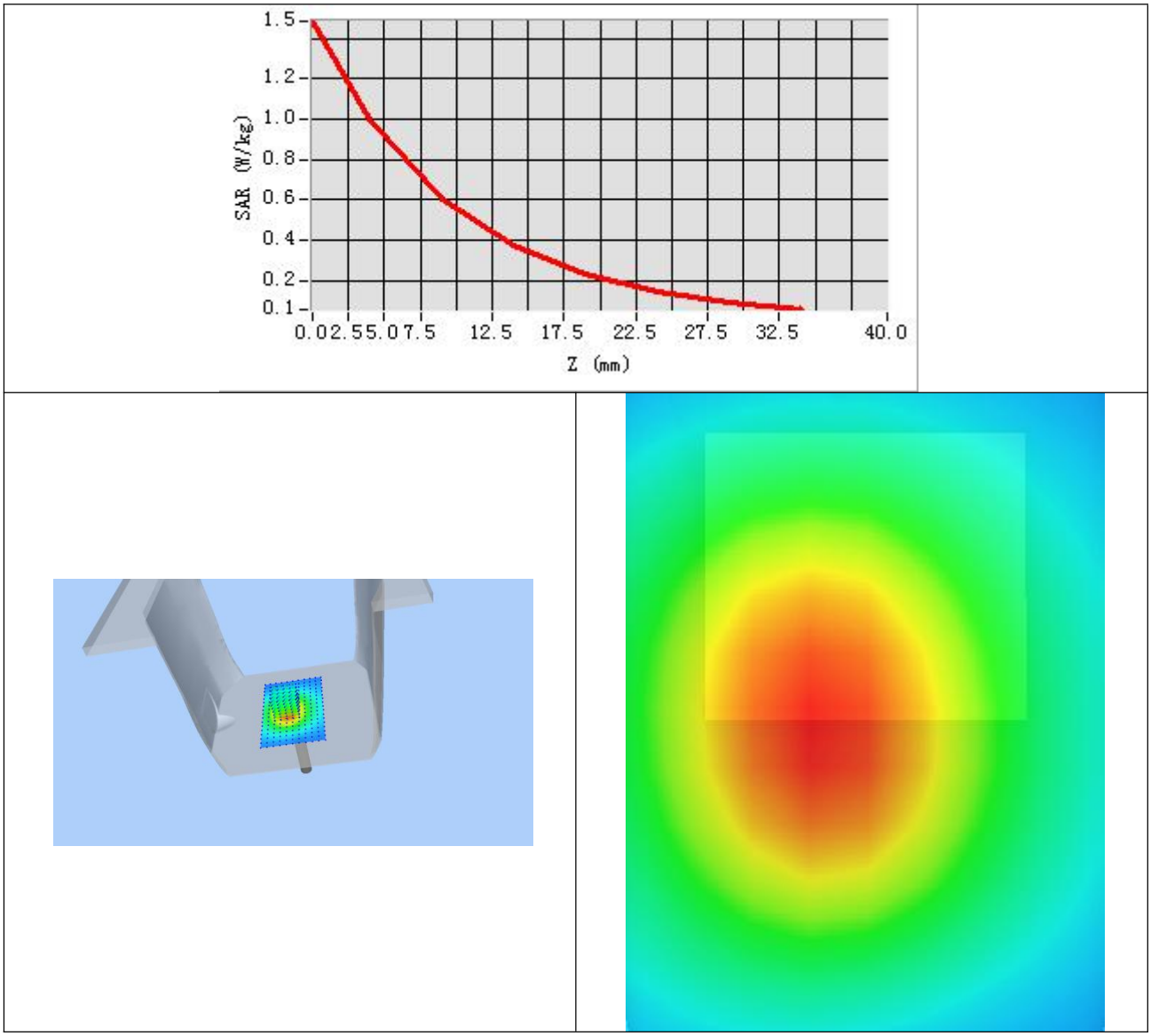
- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 835MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 835MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-7.00, Y=-1.00

SAR 10g (W/Kg)	0.603321
SAR 1g (W/Kg)	0.923223

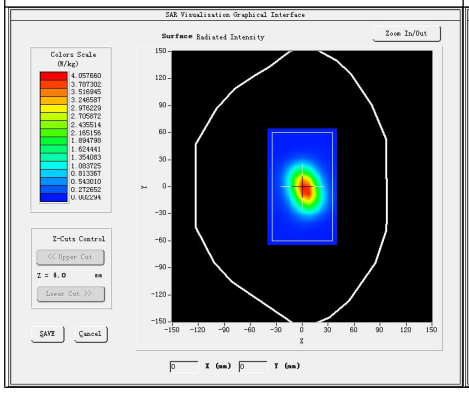
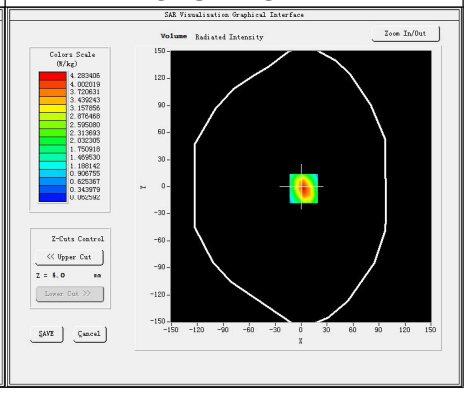


Test Laboratory: AGC Lab **Date: May 10, 2024**
System Check Head 1900MHz
DUT: Dipole 1900 MHz; Type: SID 1900
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1; Conv.F=2.08
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.35 mho/m; εr =38.33; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=20dBm
Ambient temperature (℃):22.3, Liquid temperature (℃): 22.1

SATIMO Configuration:
Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

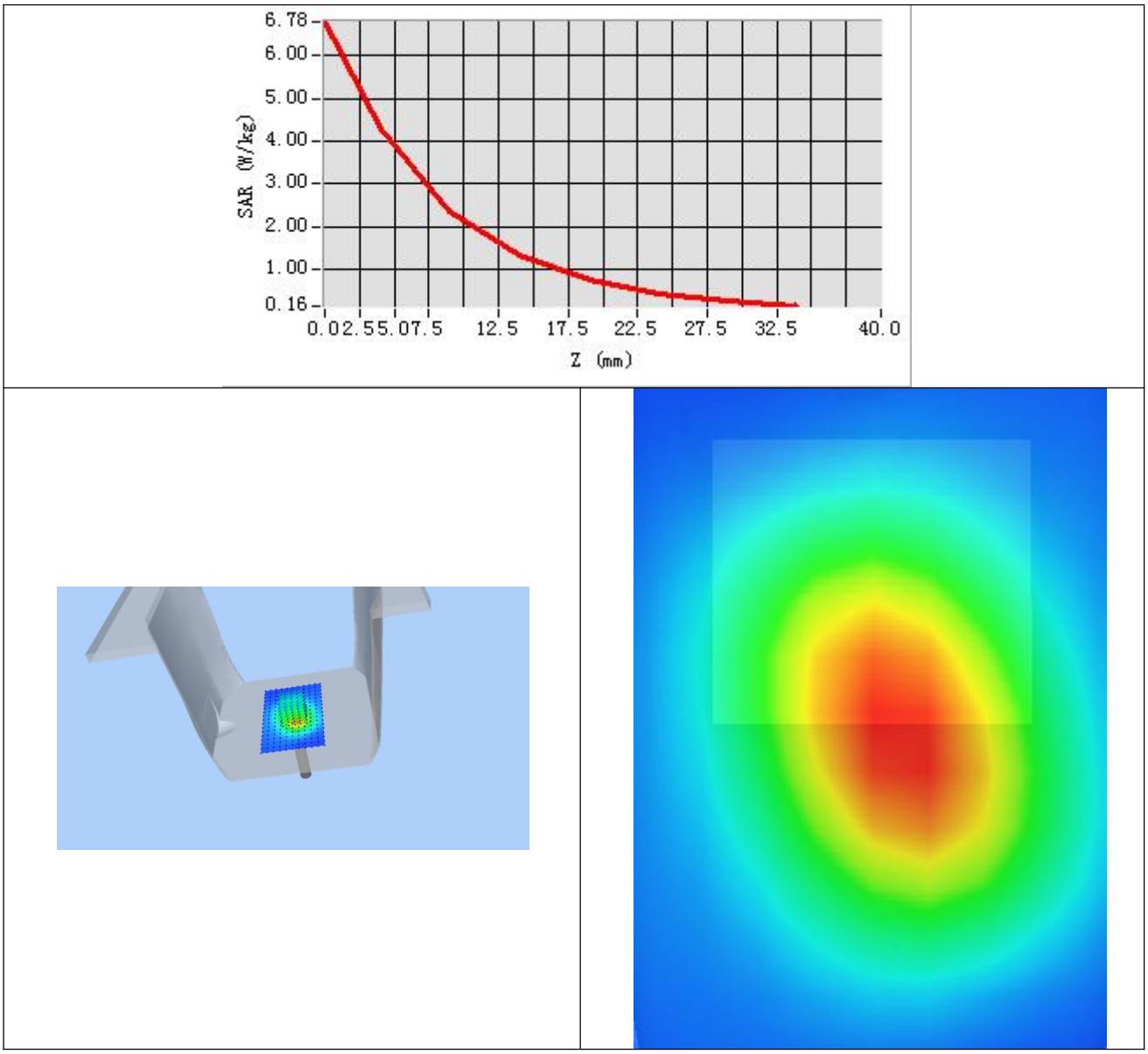
Configuration/System Check 1900MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 1900MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=-2.00

SAR 10g (W/Kg)	1.936455
SAR 1g (W/Kg)	3.936484

Z Axis Scan

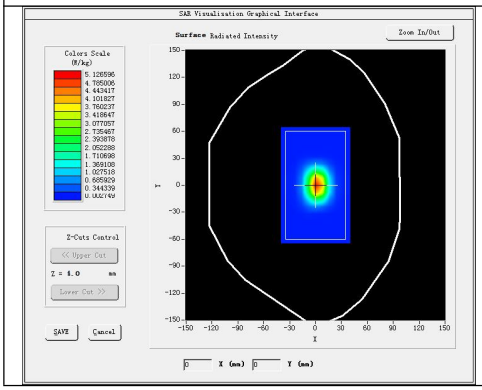
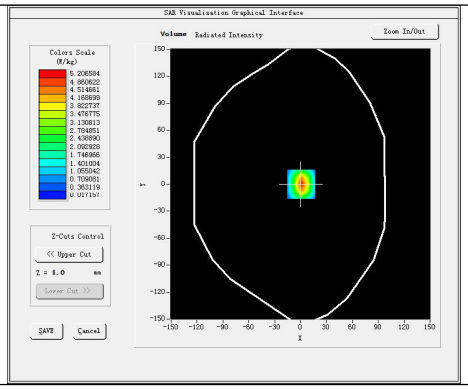


Test Laboratory: AGC Lab **Date: May 14, 2024**
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450
Communication System CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=2.16
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ=1.80 mho/m; εr =41.21; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=20dBm
Ambient temperature (℃):21.8, Liquid temperature (℃): 21.5

SATIMO Configuration

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

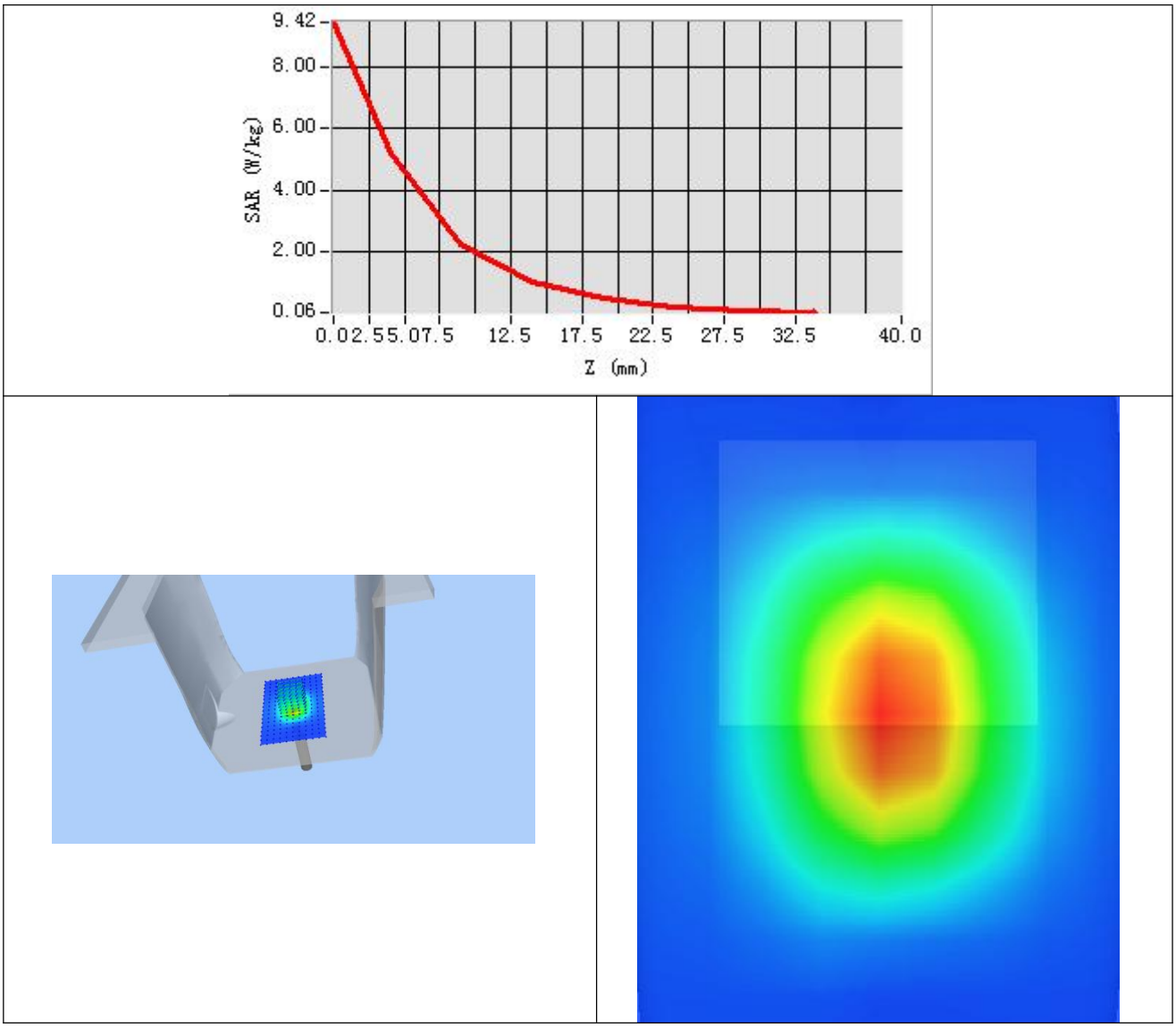
Configuration/System Check 2450MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 2450MHz Head/Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	2.463114
SAR 1g (W/Kg)	5.233592

Z Axis Scan



APPENDIX B. SAR MEASUREMENT DATA

Test Laboratory: AGC Lab **Date: May 09, 2024**
GPRS 850 Mid- Body- Front
DUT: Buddi Mini; Type: 7600004

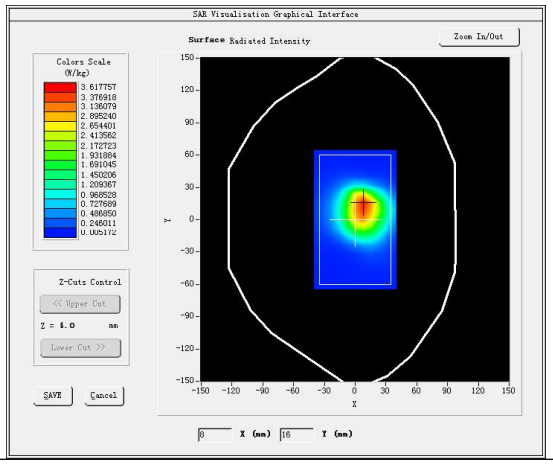
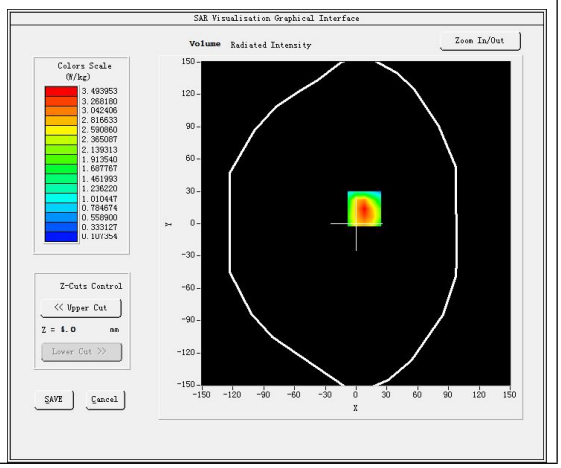
Communication System: GPRS-3 Slot; Communication System Band: GSM 850; Duty Cycle: 1:4.2; Conv.F=1.89; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.94 mho/m; εr = 42.37; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃): 23.3, Liquid temperature (℃): 23.1

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/GPRS 850 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 850 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

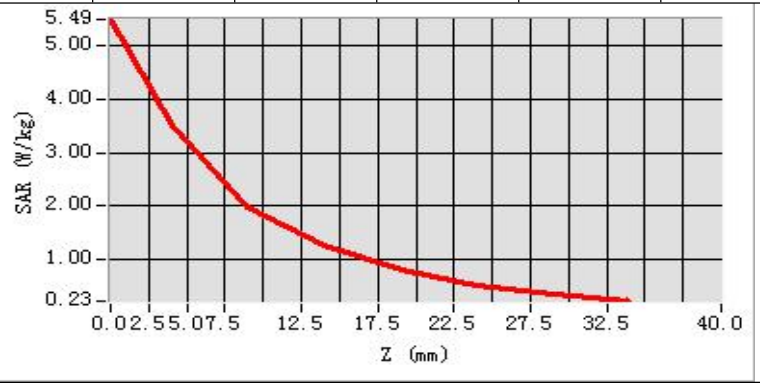
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 4.0)

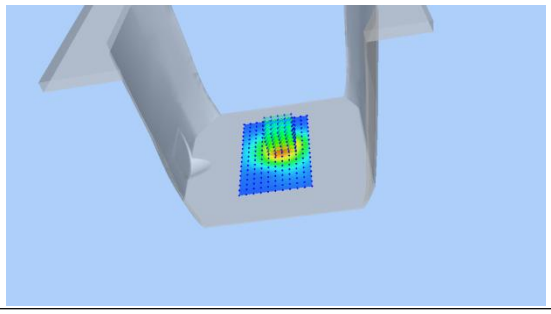
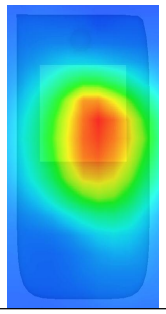
SURFACE SAR	VOLUME SAR
	

Maximum location: X=8.00, Y=14.00
SAR Peak: 5.62 W/kg

SAR 10g (W/Kg)	1.849531
SAR 1g (W/Kg)	3.316007

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.4901	3.4940	1.9965	1.2747	0.8249	0.5135	0.3444



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 10, 2024**
PCS 1900 Mid-Body- Front (MS)<SIM 1>
DUT: Buddi Mini; Type: 7600004

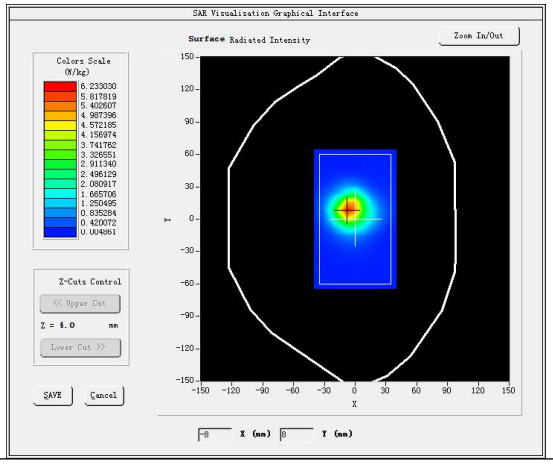
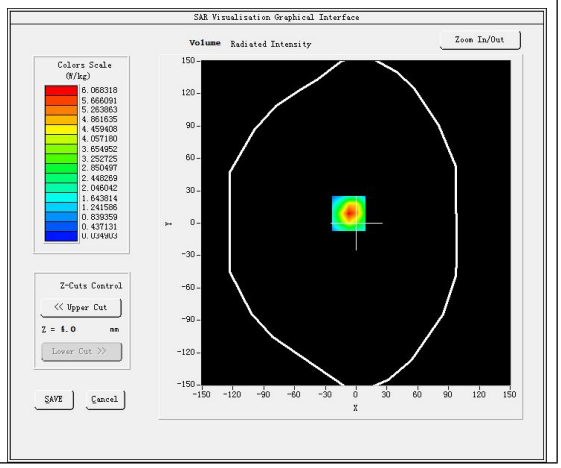
Communication System: EGPRS-3 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=2.08; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.33 mho/m; εr =39.25; ρ= 1000 kg/m³ ; Phantom section: Flat Section
Ambient temperature (℃): 22.3, Liquid temperature (℃): 22.1

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/PCS1900 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

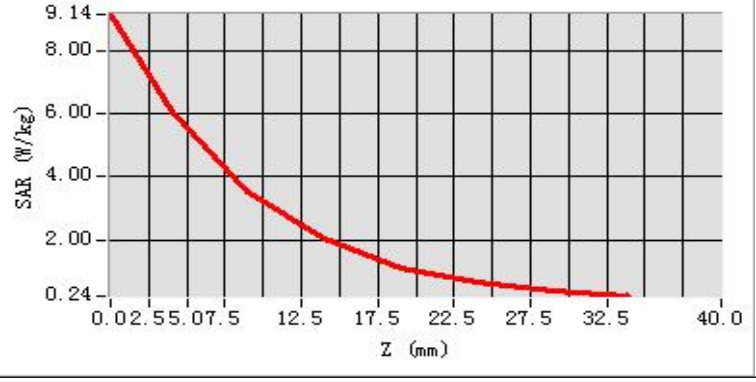
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

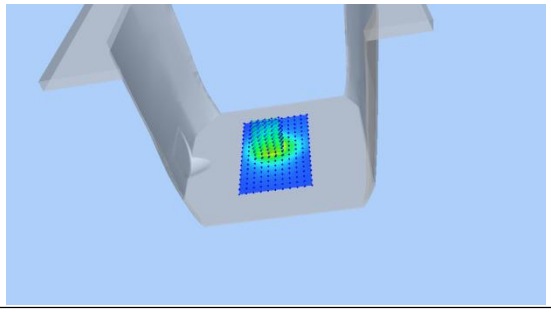
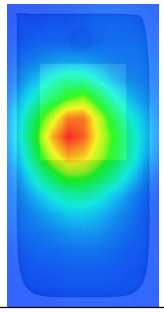
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-7.00, Y=9.00
SAR Peak: 9.48 W/kg

SAR 10g (W/Kg)	2.789634
SAR 1g (W/Kg)	5.618548

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	9.1366	6.0683	3.5088	2.0229	1.1176	0.6474	0.3840



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 10, 2024**
WCDMA Band II Mid- Front (RMC 12.2kbps)
DUT: Buddi Mini; Type: 7600004

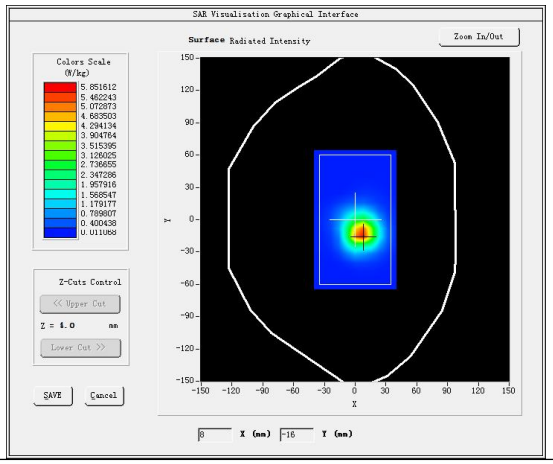
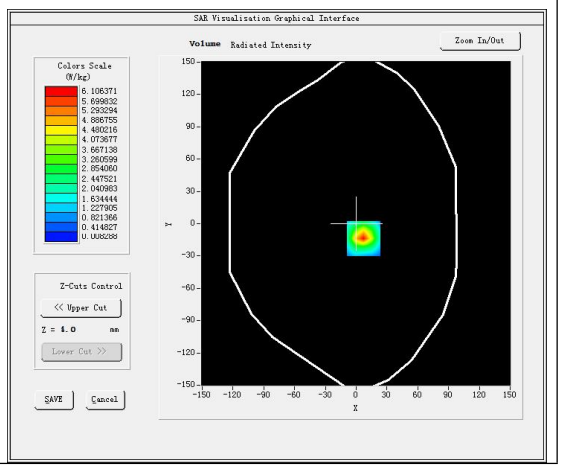
Communication System: UMTS; Communication System Band: Band II UTRA/FDD ;Duty Cycle:1:1; Conv.F=2.08;
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ=1.33 mho/m; εr =39.25; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 22.3, Liquid temperature (℃): 22.1

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ WCDMA band II Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band II Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5m;

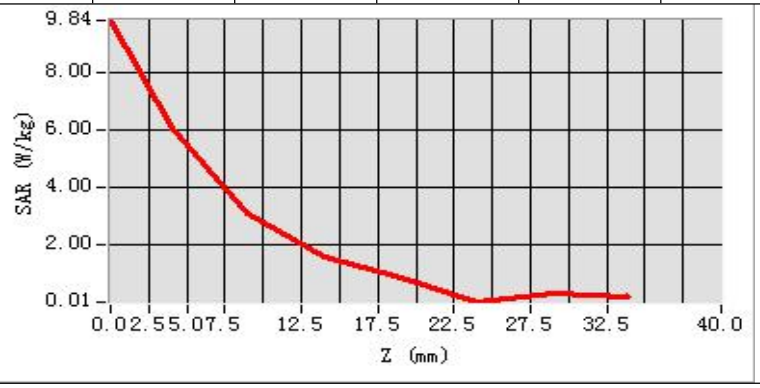
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA band II
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

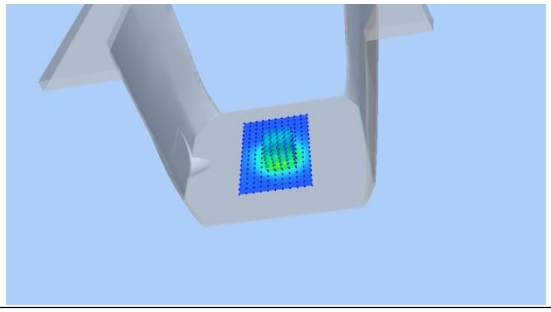
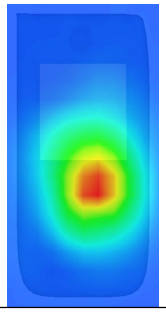
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=7.00, Y=-14.00
SAR Peak: 9.79 W/kg

SAR 10g (W/Kg)	2.449955
SAR 1g (W/Kg)	5.501250

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	9.8434	6.1064	3.0867	1.6070	0.8852	0.0125	0.2944



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 09, 2024**

WCDMA Band Ⅴ Mid- Front (RMC)

DUT: Buddi Mini; Type: 7600004

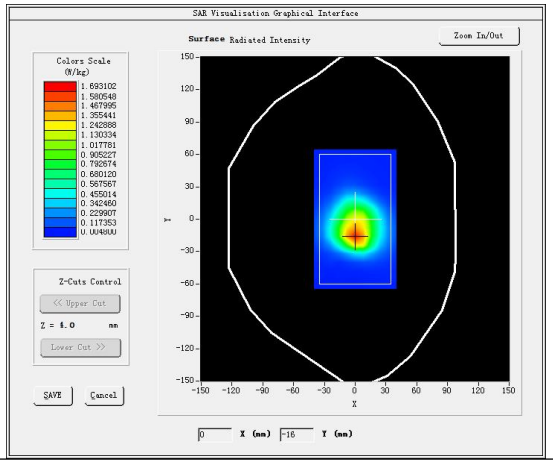
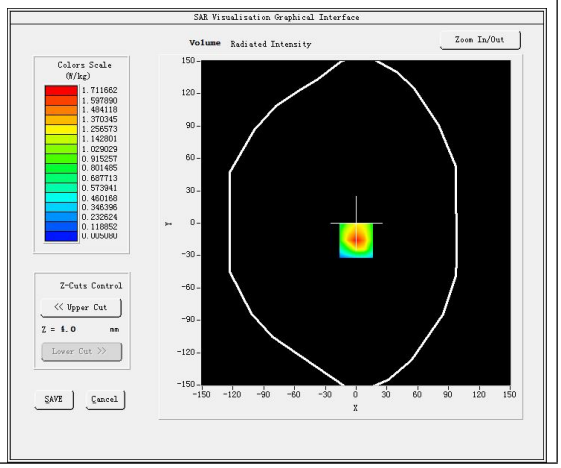
Communication System: UMTS; Communication System Band: BAND V UTRA/FDD; Duty Cycle:1: 1; Conv.F=1.89; Frequency: 836.4 MHz; Medium parameters used: f = 835MHz; σ= 0.94 mho/m; εr = 43.10; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 23.3, Liquid temperature (℃): 23.1

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ WCDMA Band V Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA Band V Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band V
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

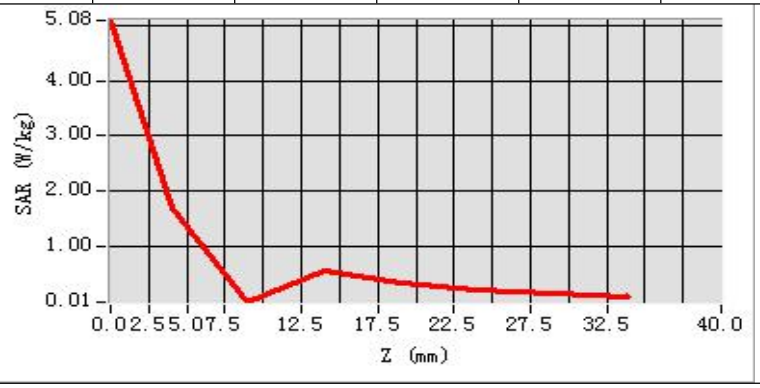
SURFACE SAR	VOLUME SAR
	

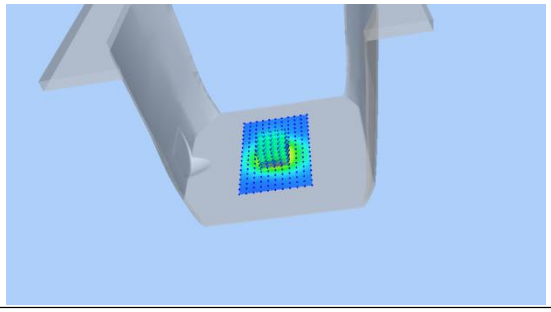
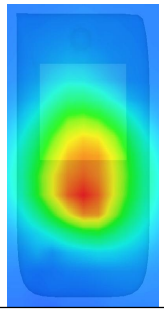
Maximum location: X=0.00, Y=-16.00

SAR Peak: 4.77 W/kg

SAR 10g (W/Kg)	0.859021
SAR 1g (W/Kg)	2.042761

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.0804	1.7117	0.0072	0.5656	0.3489	0.2269	0.1509



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 10, 2024**
LTE Band 2 Mid-Body- Front (1 RB#0)
DUT: Buddi Mini; Type: 7600004

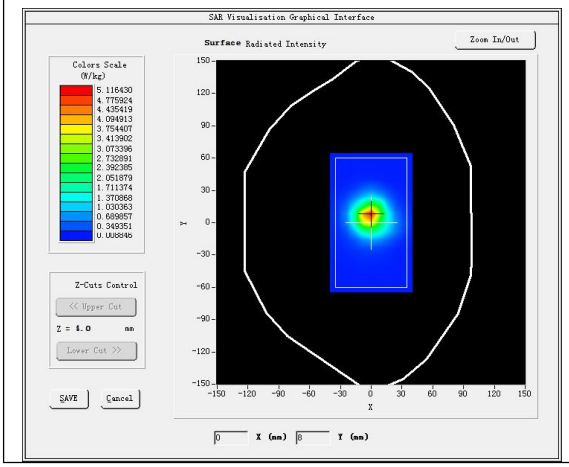
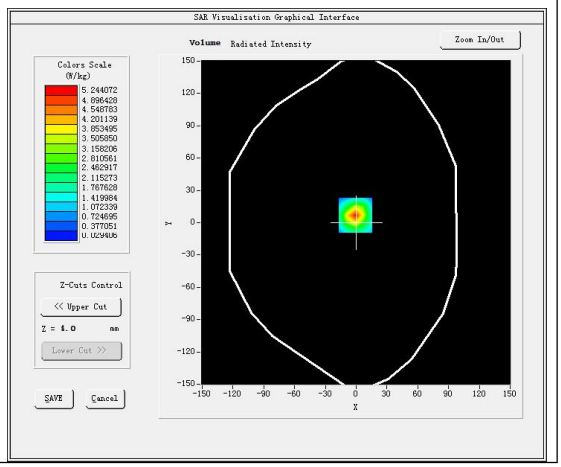
Communication System: LTE; Communication System Band: LTE Band 2; Duty Cycle:1:1; Conv.F=2.08; Frequency:1880MHz; Medium parameters used: f = 1900 MHz; σ= 1.33 mho/m; εr =39.25; ρ= 1000 kg/m³ ; Phantom section: Flat Section
Ambient temperature (℃): 22.3 Liquid temperature (℃): 22.1

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE Band 2 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ LTE Band 2 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5m;

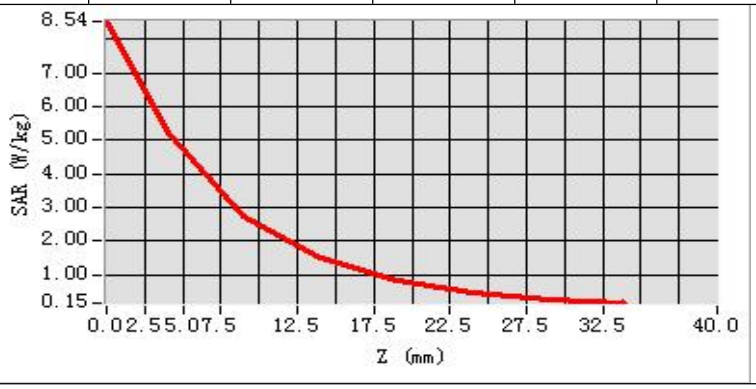
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE Band 2
Channels	Middle
Signal	OFDM (Crest factor: 1.0)

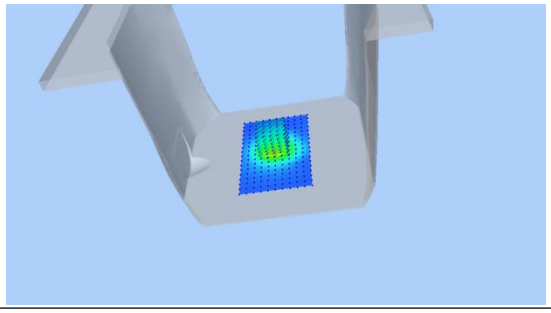
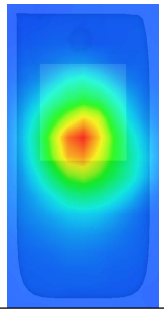
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=7.00
SAR Peak: 8.53 W/kg

SAR 10g (W/Kg)	2.163687
SAR 1g (W/Kg)	4.705385

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.5386	5.2441	2.7579	1.4740	0.8277	0.4412	0.2550



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 09, 2024**
LTE Band 5 Mid-Body- Front (1 RB#0)
DUT: Buddi Mini; Type: 7600004

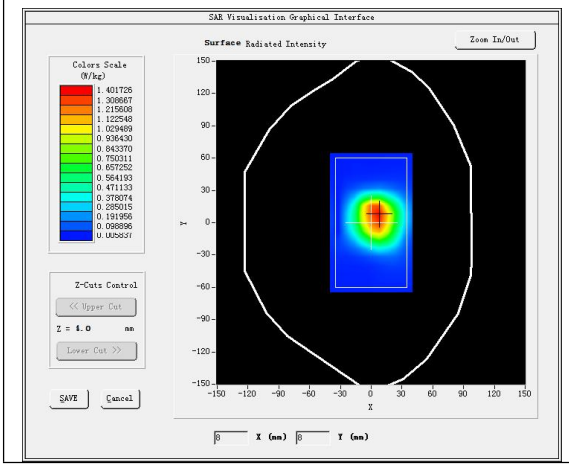
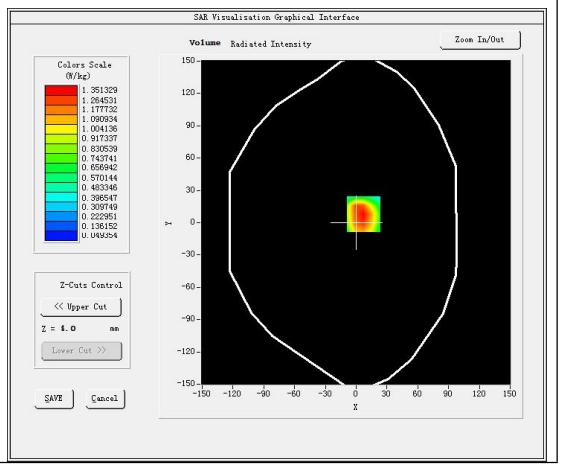
Communication System: LTE; Communication System Band: LTE Band 5; Duty Cycle:1:1; Conv.F=2.02
Frequency:836.5 MHz; Medium parameters used: f = 835 MHz; σ=0.95mho/m; εr =42.41; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 23.3, Liquid temperature (℃): 23.1

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE Band 5 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ LTE Band 5 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5m;

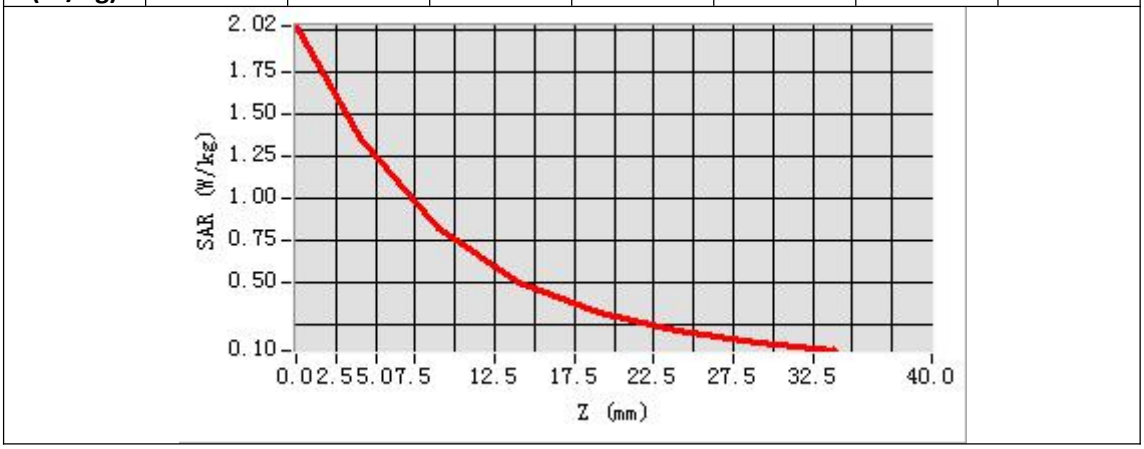
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE Band 5
Channels	Middle
Signal	OFDM (Crest factor: 1.0)

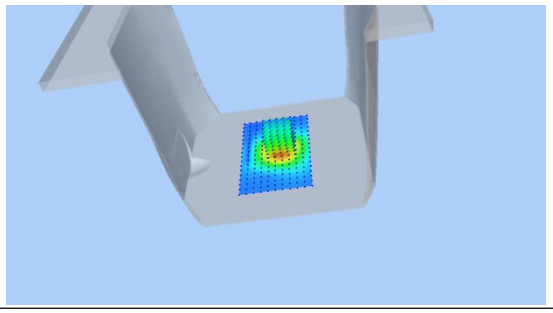
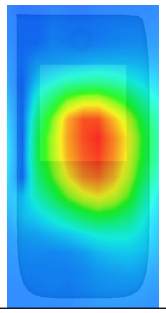
SURFACE SAR	VOLUME SAR
	

Maximum location: X=7.00, Y=8.00
SAR Peak: 2.24 W/kg

SAR 10g (W/Kg)	0.733820
SAR 1g (W/Kg)	1.313572

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.0198	1.3513	0.8171	0.5054	0.3266	0.2154	0.1407



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 08, 2024**
LTE Band 12 Mid-Body- Front (1 RB#0)
DUT: Buddi Mini; Type: 7600004

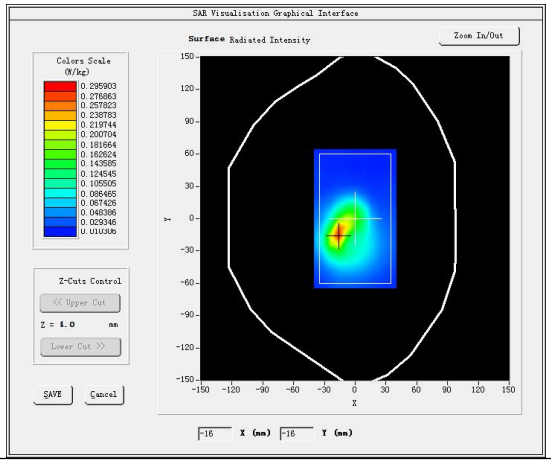
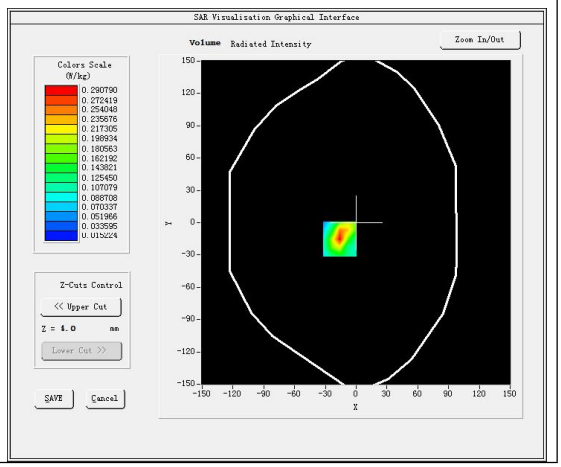
Communication System: LTE; Communication System Band: LTE Band 12; Duty Cycle:1:1; Conv.F=2.04;
Frequency: 707.5 MHz; Medium parameters used: f = 750 MHz; σ=0.92 mho/m; εr =24.21; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 22.7, Liquid temperature (℃): 22.5

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ LTE Band 12 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ LTE Band 12 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5m;

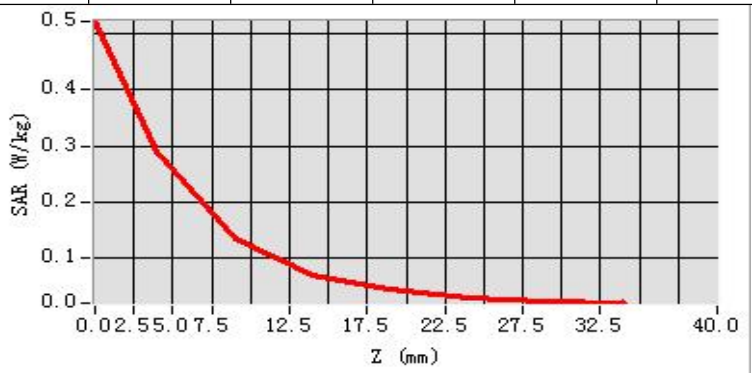
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE Band 12
Channels	Middle
Signal	OFDM (Crest factor: 1.0)

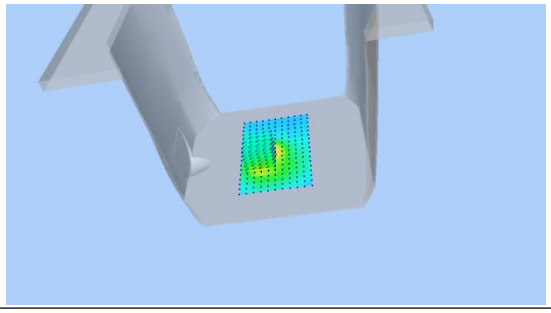
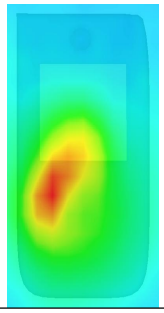
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-16.00, Y=-15.00
SAR Peak: 0.52 W/kg

SAR 10g (W/Kg)	0.127691
SAR 1g (W/Kg)	0.274045

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.5219	0.2908	0.1333	0.0706	0.0445	0.0284	0.0233



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: May 14, 2024**
802.11b Mid-Body-Worn- Front
DUT: Buddi Mini; Type: 7600004

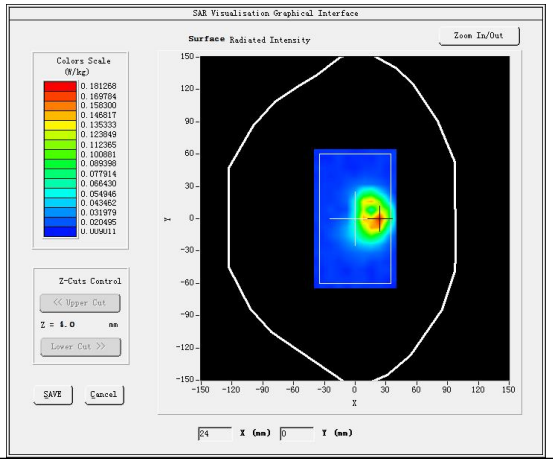
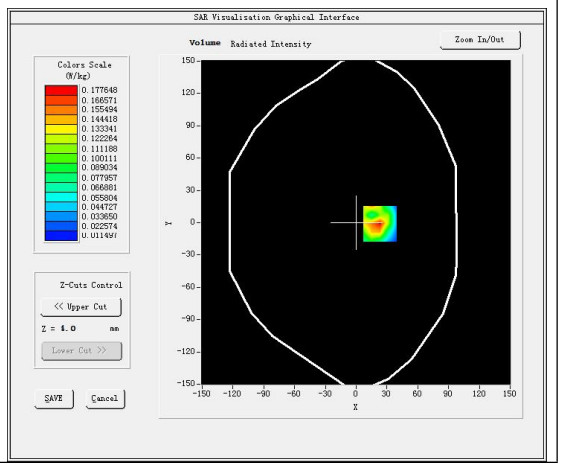
Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=2.16;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.75mho/m; εr =41.22; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃):21.8, Liquid temperature (℃): 21.5

SATIMO Configuration:

- Probe: SSE2; Calibrated: May 31, 2023; Serial No.: 2023-EPGO-414
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11b Mid- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid- Body- Back /Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm;

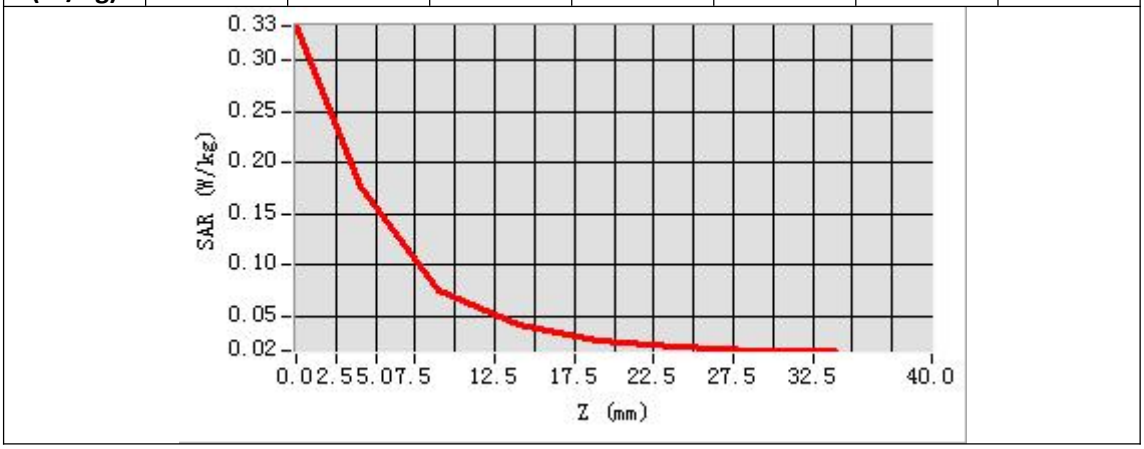
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	2450MHz
Channels	Middle
Signal	Crest factor: 1.0

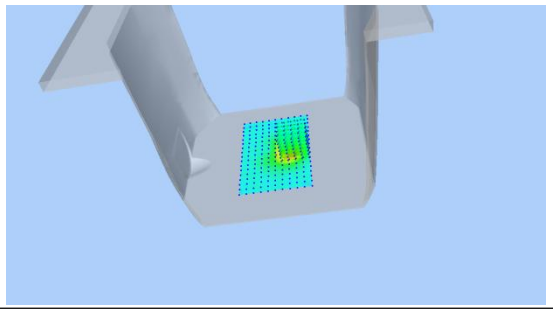
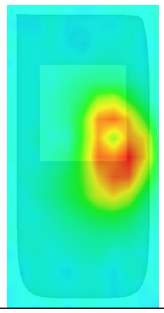
SURFACE SAR	VOLUME SAR
	

Maximum location: X=23.00, Y=-1.00
SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.079719
SAR 1g (W/Kg)	0.170236

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3340	0.1776	0.0756	0.0412	0.0264	0.0189	0.0160



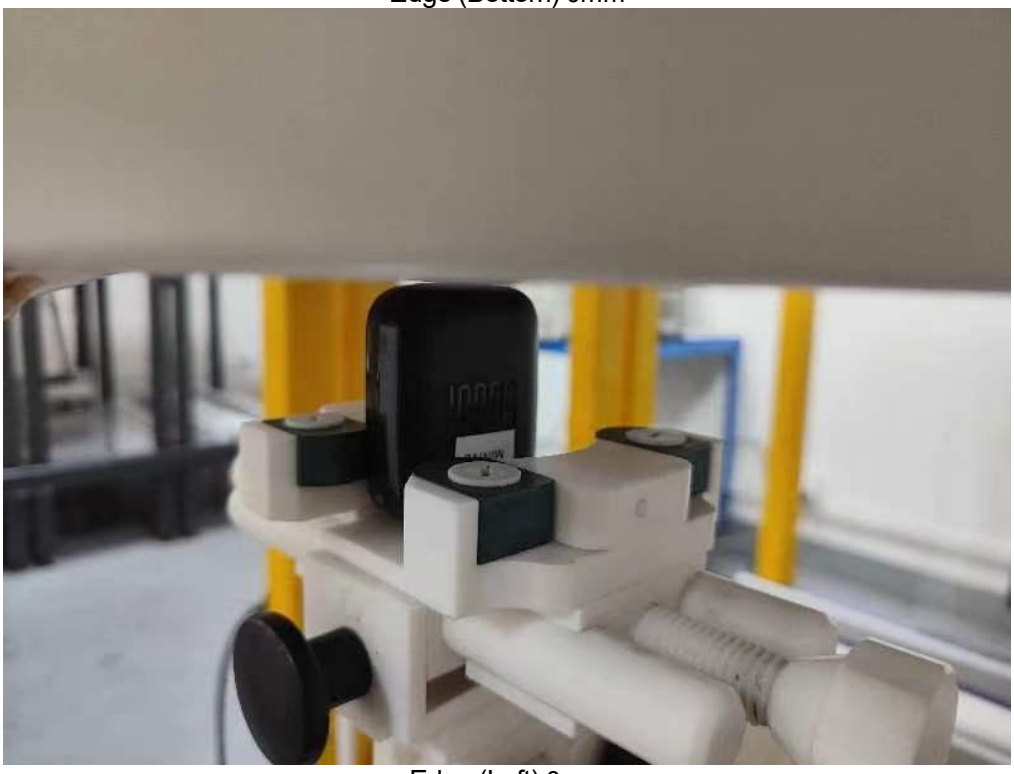
3D screen shot	Hot spot position
	

APPENDIX C. TEST SETUP PHOTOGRAPHS

Body Back 0mm

Body Front 0mm

Edge (Bottom) 0mm



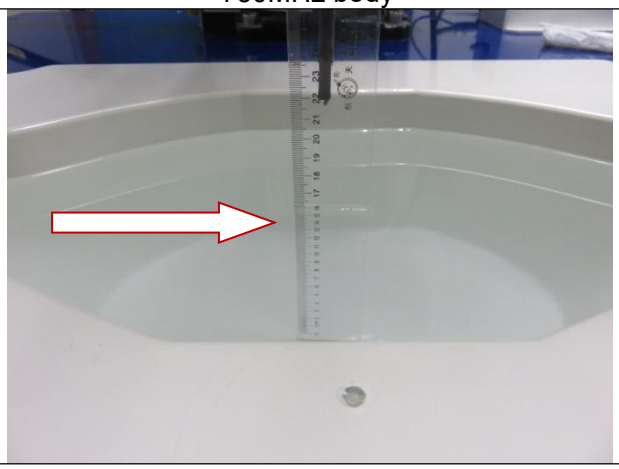
Edge (Left) 0mm

Edge (Right) 0mm

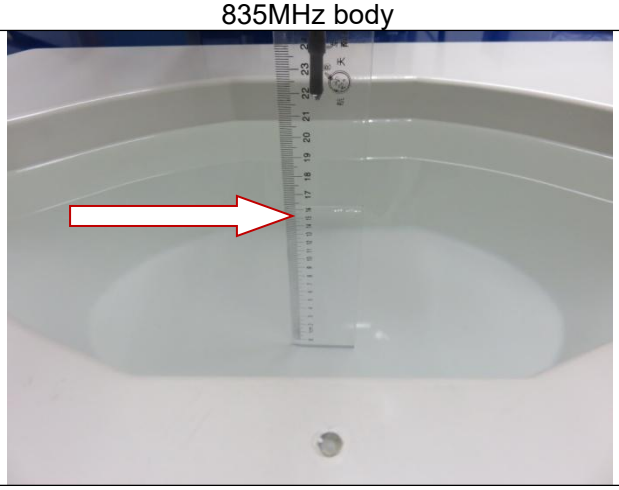
DEPTH OF THE LIQUID IN THE PHANTOM—ZOOM IN

Note：The position used in the measurement were according to IEEE 1528-2013

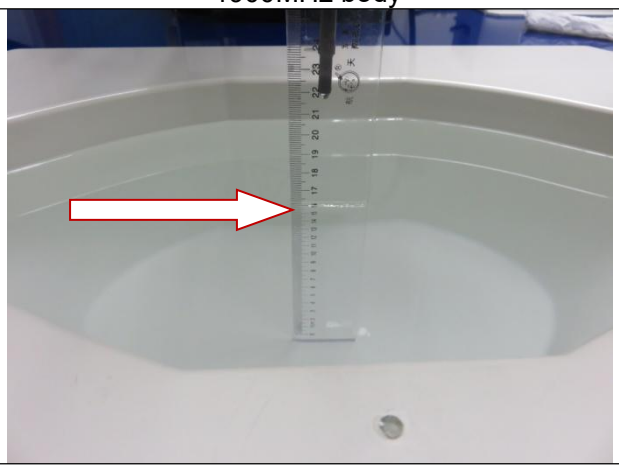
750MHz body



835MHz body



1900MHz body



2450MHz body

APPENDIX D. CALIBRATION DATA

Refer to Attached files.

----END OF REPORT----

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.