SAR TEST REPORT

Reference No.	:	WTD24D04085741W007
FCC ID.....	:	2BG82-WONDER-PHONE
Applicant	:	Lighko Corp
Address	:	131 Rt 306, Monsey, NY, 10952, USA
Manufacturer	:	Ying Tai Electronics Co., Ltd
Address	:	lingang Industrial Park, Enyang Dist., Bazhong, Sichuan, China
Product.....	:	Wonder Phone
Model(s).....	:	WP01
Brand Name	:	Wonder
Standards.....	:	FCC 47 CFR Part2(2.1093) ANSI/IEEE C95.1-2006 IEC/IEEE 62209-1528:2020 & Published RF Exposure KDB Procedures
Date of Receipt sample....	:	2024-04-19
Date of Test.....	:	2024-07-02 to 2024-07-19
Date of Issue	:	2024-07-24
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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3 Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD24D04085741W007	2024-04-19	2024-07-02 to 2024-07-19	2024-07-24	Original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product:	Wonder Phone
Model(s):	WP01
Model Description:	N/A
Test Sample No.:	1-1/1
GSM Band(s):	GSM 850/1900MHz
GPRS/EGPRS Class:	12
WCDMA Band(s):	FDD Band II/IV/V
LTE Band(s):	FDD Band 2/4/5/7/12/13/66/71
Wi-Fi Specification:	2.4G-802.11b/g/n HT20/ n HT40
Bluetooth Version:	5.0
GPS:	Support
Hardware Version:	P61-MB-V1.1-A
Software Version:	mt6761_P61-v228_20240625
Note:	N/A

4.2 Details of E.U.T.

Operation Frequency:	GSM/GPRS/EDGE 850: 824~849MHz PCS/GPRS/EDGE 1900: 1850~1910MHz WCDMA Band II: 1850~1910MHz WCDMA Band IV:1710~1755MHz WCDMA Band V: 824~849MHz LTE Band 2: 1850~1910MHz LTE Band 4: 1710~1755MHz LTE Band 5: 824~849MHz LTE Band 7: 2500~2570MHz LTE Band 12: 699~716MHz LTE Band 13: 777~787MHz LTE Band 66: 1710~1780MHz LTE Band 71: 663~698MHz 2.4G Wi-Fi: 802.11b/g/n HT20: 2412~2462MHz 802.11n HT40: 2422~2452MHz Bluetooth: 2402~2480MHz BLE:2402-2480MHz
Max. RF output power:	GSM 850: 33.49dBm PCS1900: 28.68dBm WCDMA Band II: 21.98dBm

	WCDMA Band IV: 21.66dBm WCDMA Band V: 21.86dBm LTE Band 2: 20.80dBm LTE Band 4: 21.43dBm LTE Band 5: 23.77dBm LTE Band 7: 19.63dBm LTE Band 12: 24.96dBm LTE Band 13: 23.63dBm LTE Band 66: 20.28dBm LTE Band 71: 25.82dBm 2.4G Wi-Fi: 17.49dBm Bluetooth: 9.53dBm BLE: -0.72dBm
Max.SAR:	0.458W/kg 1g Head Tissue 1.007W/kg 1g Body Tissue 1.014W/kg 1g Hotspot
Max Simultaneous SAR	1.408W/kg
Type of Modulation:	GSM/GPRS: GMSK EDGE: GMSK, 8PSK WCDMA: BPSK LTE: QPSK, 16QAM 2.4G Wi-Fi: CCK, OFDM Bluetooth: GFSK, π/4 DQPSK, 8DPSK BLE: GFSK
Antenna installation	GSM/WCDMA/LTE: PIFA Antenna 2.4G Wi-Fi/Bluetooth/ BLE/: PIFA Antenna
Antenna Gain:	GSM 850: -2.31dBi PCS1900: 0.16dBi WCDMA Band II: 0.16dBi WCDMA Band IV: 0.22dBi WCDMA Band V: -2.32dBi LTE Band 2: 0.16dBi LTE Band 4:0.23dBi LTE Band 5: -2.27dBi LTE Band 7: 0.36dBi LTE Band 12: -2.48dBi LTE Band 13: -2.47dBi LTE Band 66: 0.24dBi LTE Band 71: -2.61dBi 2.4G Wi-Fi: 0.29dBi Bluetooth: 0.29dBi BLE: 0.29dBi

Note:

#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTEK lab has not verified the authenticity of its information.

Ratings:	Battery: DC 3.8V, 2850mAh, 10.83Wh

4.3 Test Facility

The test facility has a test site registered with the following organizations:

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476.

Waltek Testing Group Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration number 523476, September 10, 2019.

5 Equipment Used during Test

5.1 Equipment List

Name of Equipment	Manufacturer	Type/Model	Serial Number	Calibration Date	Calibration Due
6 AXIS ROBOT	KUKA	KR6 R900 SIXX	502635	N/A	N/A
SATIMO Test Software	MVG	OPENSAR	OPENSAR V_4_02_27	N/A	N/A
PHANTOM TABLE	MVG	N/A	SAR_1215_01	N/A	N/A
SAM PHANTOM	MVG	SAM118	SN 11/15 SAM118	N/A	N/A
MultiMeter	Keithley	MiltiMeter 2000	4073942	2024-02-25	2025-02-24
S-Parameter Network Analyzer	Agilent	8753E	JP38160684	2023-09-15	2024-09-14
Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	114798	2023-07-27	2024-07-26
Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	127818	2024-04-22	2025-04-21
E-Field Probe	MVG	SSE2	2523-EPGO-417	2023-07-31	2024-07-30
DIPOLE 750	MVG	SID750	SN 09/15 DIP 0G750-357	2023-08-08	2026-08-07
DIPOLE 835	MVG	SID835	SN 09/15 DIP 0G835-358	2023-08-08	2026-08-07
DIPOLE 1800	MVG	SID1800	SN 09/15 DIP 1G800-360	2023-08-08	2026-08-07
DIPOLE 1900	MVG	SID1900	SN 09/15 DIP 1G900-361	2023-08-08	2026-08-07
DIPOLE 2450	MVG	SID2450	SN 09/15 DIP 2G450-363	2023-08-08	2026-08-07
DIPOLE 2600	MVG	SID2600	SN 16/15 DIP 2G600-376	2023-08-08	2026-08-07
Limesar Dielectric Probe	MVG	SCLMP	SN 11/15 OCPG 69	2024-02-24	2025-02-23
Power Amplifier	BONN	BLWA 0830 -160/100/40D	128740	2023-07-27	2024-07-26
Signal Generator	R&S	SMB100A	105942	2023-07-27	2024-07-26
Power Meter	R&S	NRP2	102031	2023-07-27	2024-07-26
Power Meter	R&S	NRVD	102284	2023-07-27	2024-07-26
USB Wideband Power Sensor	Malaysia Keysight	U2021XA	MY54340009	2023-07-27	2024-07-26
USB Wideband Power Sensor	Malaysia Keysight	U2021XA	MY54340010	2023-07-27	2024-07-26

6 SAR Introduction

6.1 Introduction

This measurement report shows compliance of the EUT with ANSI/IEEE C95.1-2006 and FCC 47 CFR Part2 (2.1093).The test procedures, as described in IEC/IEEE 62209-1528: 2020 Standard for Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –Part 1528: Human models, instrumentation, and procedures(Frequency range of 4 MHz to 10 GHz)

6.2 SAR Definition

- SAR : Specific Absorption Rate
- The SAR characterize the absorption of energy by a quantity of tissue
- This is related to a increase of the temperature of these tissues during a time period.

$$\mathrm{DAS} = \frac{\mathrm{d}}{\mathrm{d}t}\left(\frac{\mathrm{d}W}{\mathrm{d}m}\right) = \frac{\mathrm{d}}{\mathrm{d}t}\left(\frac{\mathrm{d}W}{\rho \mathrm{d}V}\right)$$

$$\mathrm{DAS} = \frac{\sigma E^2}{\rho}$$

$$\mathrm{DAS} = c_{\mathrm{h}} \left.\frac{\mathrm{d}T}{\mathrm{d}t}\right|_{t=0}$$

SAR definition

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

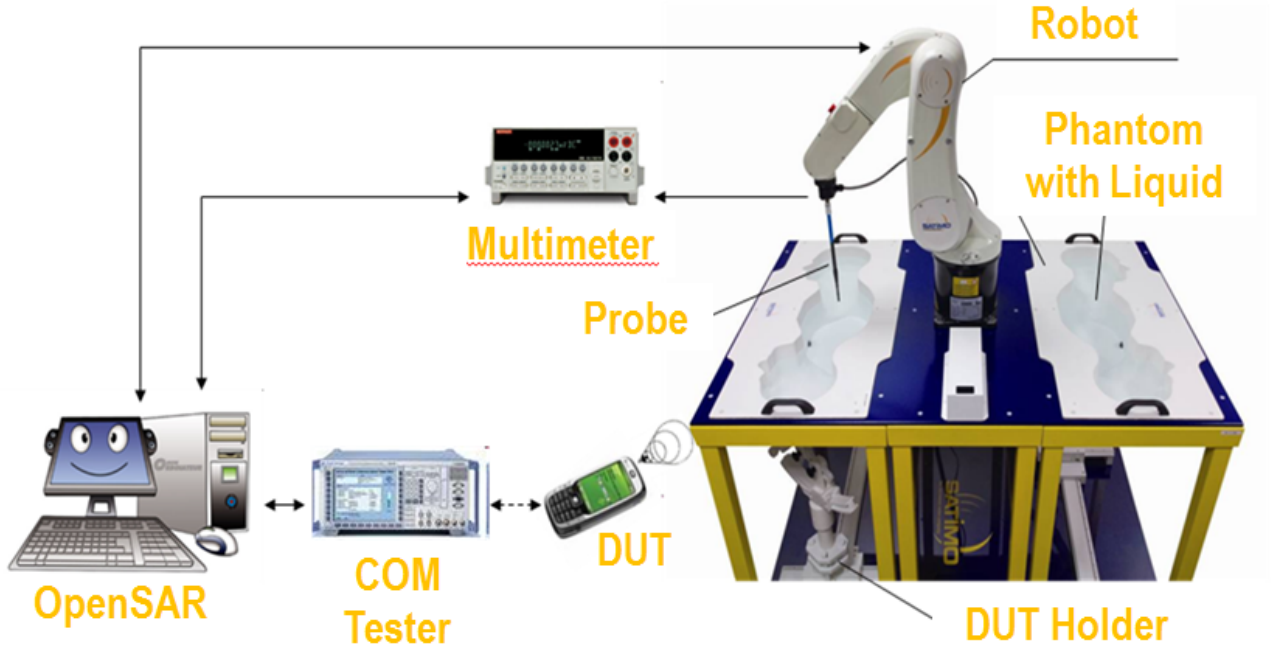
- SAR : Specific Absorption Rate
  - σ : Liquid conductivity
    - $\varepsilon_r = \varepsilon' - j\varepsilon''$ (complex permittivity of liquid)
    - $\sigma = \frac{\varepsilon'' \omega}{\varepsilon_0}$
  - ρ: Liquid density
    - ρ = 1000 g/L = 1000Kg/m³

where:

σ = conductivity of the tissue (S/m)
ρ = mass density of the tissue (kg/m3)
E = rms electric field strength (V/m)

7 SAR Measurement Setup

SAR bench sub-systems



Scanning System (robot)

- It must be able to scan all the volume of the phantom to evaluate the tridimensional distribution of SAR.
- Must be able to set the probe orthogonal of the surface of the phantom (±30°).
- Detects stresses on the probe and stop itself if necessary to keep the integrity of the probe.

SAM Phantom (Specific Anthropomorphic Mannequin)

- The probe scanning of the E-Field is done in the 2 half of the normalized head.
- The normalized shape of the phantom corresponds to the dimensions of 90% of an adult head size.
- The materials for the phantom should not affect the radiation of the device under test (DUT)
  - Permittivity < 5
- The head is filled with tissue simulating liquid.
- The hand holding the DUT does not have to be modeled.

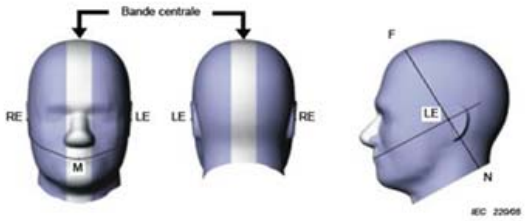
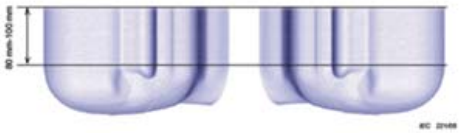
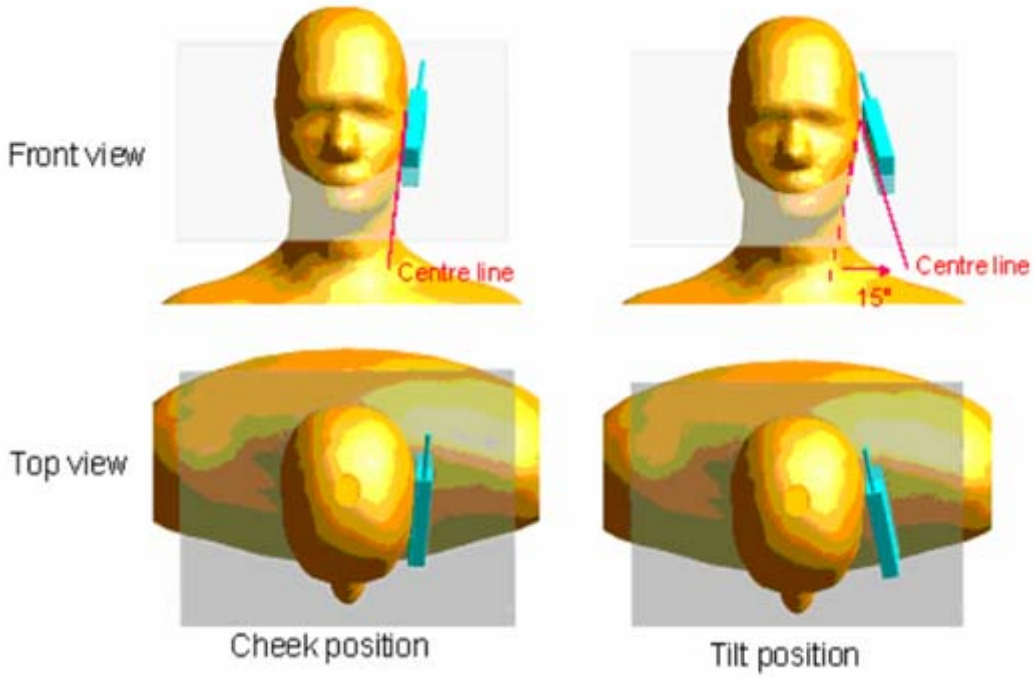


Illustration du fantôme donnant les points de référence des oreilles, RE et LE, le point de référence de la bouche, M, la ligne de référence N-F et la bande centrale



Bi-section sagittale du fantôme avec périmètre étendu (montrée sur le côté comme lors des essais de DAS de l'appareil)



The OPENSAR system for performing compliance tests consist of the following items:

1. A standard high precision 6-axis robot (KUKA) with controller and software.
2. KUKA Control Panel (KCP).
3. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
4. The functions of the PC plug-in card are to perform the time critical task such as signal filtering, surveillance of the robot operation fast movement interrupts.
5. A computer operating Windows 7.
6. OPENSAR software.
7. Remote control with teaches pendant and additional circuitry for robot safety such as warning lamps, etc.
8. The SAM phantom enabling testing left-hand right-hand and body usage.
9. The Position device for handheld EUT.
10. Tissue simulating liquid mixed according to the given recipes (see Application Note).
11. System validation dipoles to validate the proper functioning of the system.

Data Evaluation

The OPENSAR software automatically executes the following procedure to calculate the field units from the microvolt readings at the probe connector. The parameters used in the valuation are stored in the configuration modules of the software:

Probe Parameters	· Sensitivity	$Norm_i$
	· Conversion factor	ConvFi
	· Diode compression point Dcpi	
Device Parameter	· Frequency	f
	· Crest factor	cf
Media Parametrs	· Conductivity	σ
	· Density	ρ

These parameters must be set correctly in the software. They can either be found in the component documents or be imported into the software from the configuration files issued for the OPENSAR components.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as

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

Where V_i = *Compensated signal of channel i (i = x, y, z)*
U_i = *Input signal of channel i (i = x, y, z)*
cf = *Crest factor of exciting field (DASY parameter)*
dcp_i = *Diode compression point (DASY parameter)*

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

H-field probes: $$H_i = \sqrt{Vi} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$$

Where V_i = *Compensated signal of channel i (i = x, y, z)*
$Norm_i$ = *Sensor sensitivity of channel i (i = x, y, z)*
μV/(V/m)2 for E0field Probes
ConvF= Sensitivity enhancement in solution
a_{ij} = *Sensor sensitivity factors for H-field probes*

f = Carrier frequency (GHz)
E_i = Electric field strength of channel i in V/m
H_i = Magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

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

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

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

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

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

The power flow density is calculated assuming the excitation field as a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \text{or} \quad P_{pwe} = H_{tot}^2 \cdot 37.7$$

where P_{pwe} = Equivalent power density of a plane wave in mW/cm2
E_{tot} = total electric field strength in V/m
H_{tot} = total magnetic field strength in A/m

SAR Evaluation – Peak Spatial - Average

The procedure for assessing the peak spatial-average SAR value consists of the following steps

- **Power Reference Measurement**

  The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section's grid reference point or a user point in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

- **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 finer measurement around the hot spot. The sophisticated interpolation routines implemented in OPENSAR software can find the maximum locations even in relatively coarse grids. The scan area is defined by an editable grid. This grid is anchored at the grid reference point of the selected section in the phantom. When the area scan's property sheet is brought-up, grid was at to 15 mm by 15 mm and can be edited by a user.

- **Zoom Scan**

  Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default zoom scan measures 5 x 5 x 7 points within a cube whose base faces are centered around the maximum found in a preceding area scan job within the same procedure. If the preceding Area Scan job indicates more then one maximum, the number of Zoom Scans has to be enlarged accordingly (The default number inserted is 1).

- **Power Drift measurement**

  The drift job measures the field at the same location as the most recent reference job within the same procedure, and with the same settings. The drift measurement gives the field difference in dB from the reading conducted within the last reference measurement. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test within a batch process. In the properties of the Drift job, the user can specify a limit for the drift and have OPENSAR software stop the measurements if this limit is exceeded.

SAR Evaluation – Peak SAR

The procedure for spatial peak SAR evaluation has been implemented according to the IEEE1528 standard. It can be conducted for 1 g and 10 g. The OPENSAR system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maximum searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation.
They are used in the Cube Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the fourth order least square polynomial method for extrapolation. For a grid using 5x5x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1 g and 10 g cubes.

Definition of Reference Points

Ear Reference Point

Figure 6.2 shows the front, back and side views of the SAM Phantom. The point "M" is the reference point for the center of the mouth, "LE" is the left ear reference point (ERP), and "RE" is the right ERP. The ERPs are 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 6.1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front) is perpendicular to the reference plane and passing through the RE (or LE) is called the Reference Pivoting Line (see Figure 6.1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

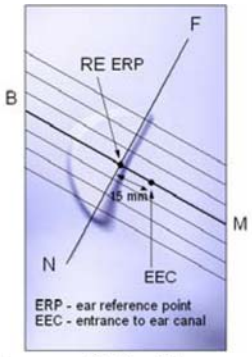


Figure 6.1 Close-up side view of ERP's

Figure 6.2 Front, back and side view of SAM

Device Reference Points

Two imaginary lines on the device need to be established: the vertical centerline and the horizontal line. The test device is placed in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point" (See Fig. 6.3). The "test device reference point" is than located at the same level as the center of the ear reference point. The test device is positioned so that the "vertical centerline" is bisecting the front surface of the device at it's top and bottom edges, positioning the "ear reference point" on the outer surface of both the left and right head phantoms on the ear reference point [5].

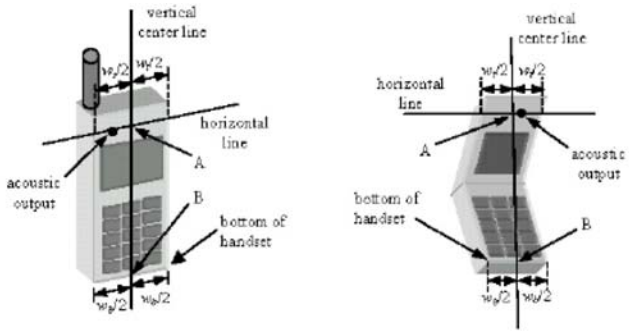


Figure 6.3 Handset Vertical Center & Horizontal Line Reference Points

Test Configuration – Positioning for Cheek / Touch

1. Position the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure below), such that the plane defined by the vertical center line and the horizontal line of the device is approximately parallel to the sagittal plane of the phantom

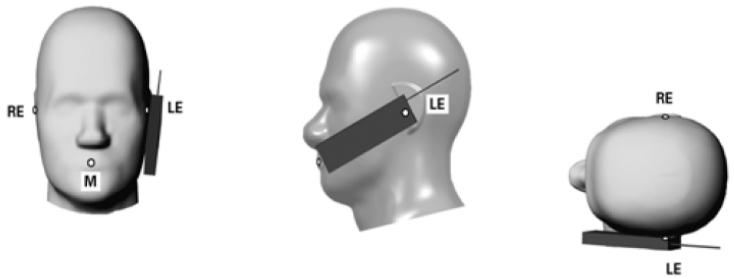


Figure 7.1 Front, Side and Top View of Cheek/Touch Position

2. Translate the device towards the phantom along the line passing through RE and LE until the device touches the ear.

3. While maintaining the device in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to MB-NF including the line MB (called the reference plane).
4. Rotate the device around the vertical centerline until the device (horizontal line) is symmetrical with respect to the line NF.

5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE and maintaining the device contact with the ear, rotate the device about the line NF until any point on the device is in contact with a phantom point below the ear (cheek). See Figure below.

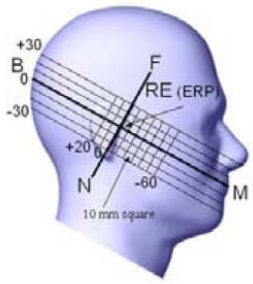


Figure 7.2 Side view w/ relevant markings

Test Configuration – Positioning for Ear / 15° Tilt

With the test device aligned in the Cheek/Touch Position":

1. While maintaining the orientation of the device, retracted the device parallel to the reference plane far enough to enable a rotation of the device by 15 degrees.

2. Rotate the device around the horizontal line by 15 degrees.

3. While maintaining the orientation of the device, move the device parallel to the reference plane until any part of the device touches the head. (In this position, point A is located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, the angle of the device shall be reduced. The tilted position is obtained when any part of the device is in contact with the ear as well as a second part of the device is in contact with the head (see Figure below).

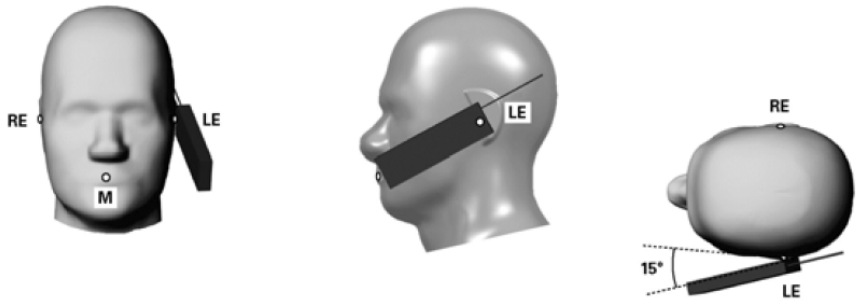
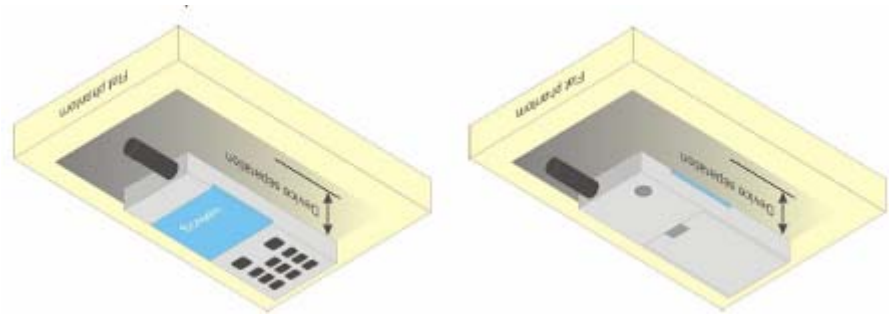


Figure 7.3 Front, Side and Top View of Ear/15˚ Tilt Position

Test Position – Body Configurations

Body Worn Position
(a) To position the device parallel to the phantom surface with either keypad up or down.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 1.0 cm or holster surface and the flat phantom to 0 cm.



8 Exposure limit

In order for users to be aware of the body-worn operating requirements for meeting RF exposure compliance, operating instructions and cautions statements are included in the user's manual.

Uncontrolled Environment

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

Controlled Environment

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

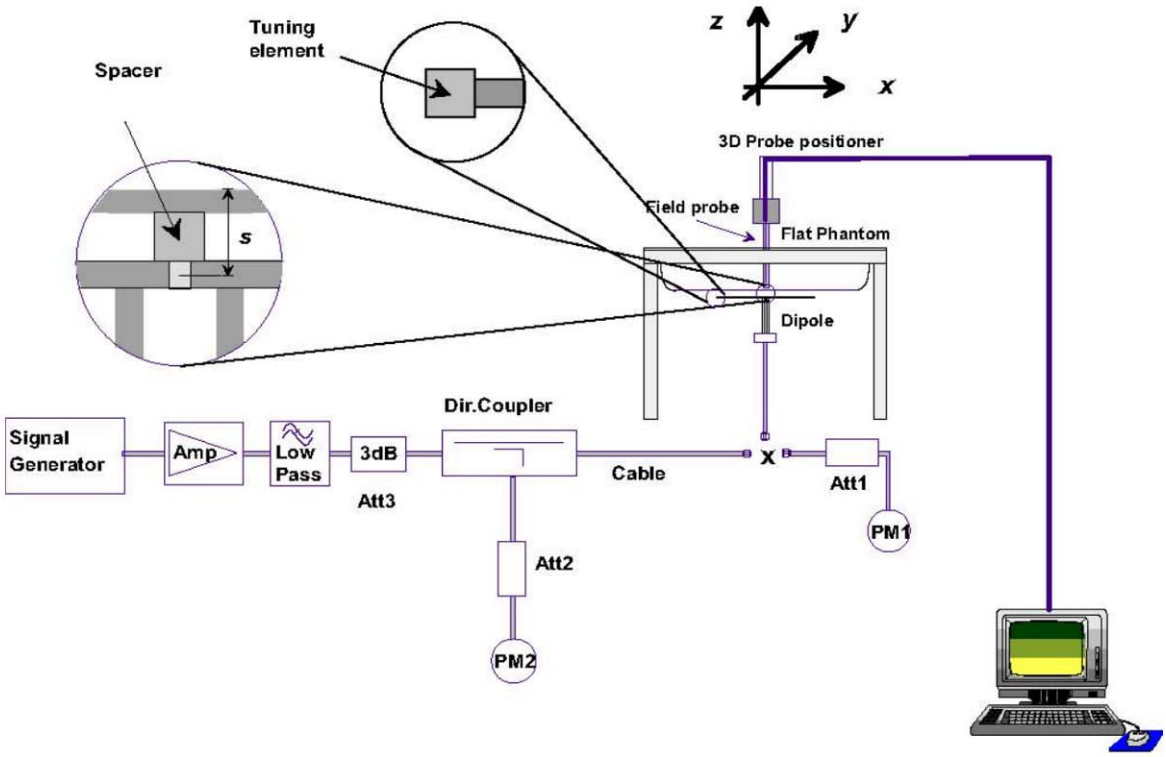
Table 8.1 Human Exposure Limits

	UNCONTROLLED ENVIRONMENT General Population (W/kg) or (mW/g)	CONTROLLED ENVIROMENT Professional Population (W/kg) or (mW/g)
SPATIAL PEAK SAR[1] Brain	1.60	8.00
SPATIAL AVERAGE SAR[2] Whole Body	0.08	0.40
SPATIAL PEAK SAR[3] Hands, Feet, Ankles, Wrists	4.00	20.00

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

9 System and liquid validation

9.1 System validation



Verification Setup Block Diagram

Dipole Antenna Setup Photo

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

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

1. Signal Generator
2. Amplifier
3. Directional Coupler
4. Power Meter
5. Calibrated Dipole

The output power on dipole port must be calibrated to 30 dBm (1000 mW) before dipole is connected.

Numerical reference SAR values (W/kg) for reference dipole and flat phantom

Frequency (MHz)	1g SAR	10g SAR	Local SAR at surface(above feed-point)	Local SAR at surface(y = 2 cm offset from feedpoint)
300	3.02	2.04	4.40	2.10
450	4.92	3.28	7.20	3.20
750	8.49	5.55	12.6	4.59
835	9.56	6.22	14.1	4.90
900	10.9	6.99	16.4	5.40
1450	29.0	16.0	50.2	6.50
1800	38.4	20.1	69.5	6.80
1900	39.7	20.5	72.1	6.60
2000	41.1	21.1	74.6	6.50
2450	52.4	24.0	104	7.70
2600	55.3	24.6	113	8.29
3000	63.8	25.7	140	9.50

Table 1: system validation (1g)

Measurement Date	Frequency (MHz)	Liquid Type (head/body)	1W Target SAR1g (W/kg)	Measured SAR1g (W/kg)	1W Normalized SAR1g (W/kg)	Desired Tolerance (%)	Actual Tolerance (%)
2024-07-17	750	head	8.78	0.921	9.21	±10	4.90
2024-07-17	835	head	9.57	0.943	9.43	±10	-1.46
2024-07-16	1800	head	38.73	4.124	41.24	±10	6.48
2024-07-16	1900	head	39.51	3.988	39.88	±10	0.94
2024-07-10	2450	head	54.33	5.535	55.35	±10	1.88

Remark: 1. system check input power: 100mW.

2. Referring to IEEE 1528:2013, Section 8.2, The system check shall be performed at a test frequency that is within ±10% or ±100 MHz of the compliance test mid-band frequency, so the 1750 MHz system verification is made of 1800MHz Dipole.

9.2 liquid validation

The dielectric parameters were checked prior to assessment using the HP85070C dielectric probe kit. The dielectric parameters measured are reported in each correspondent section.

KDB 865664 recommended Tissue Dielectric Parameters

The head and body tissue parameters given in this below table should be used to measure the SAR of transmitters operating in 100 MHz to 6 GHz frequency range. The tissue dielectric parameters of the tissue medium at the test frequency should be within the tolerance required in this document. The dielectric parameters should be linearly interpolated between the closest pair of target frequencies to determine the applicable dielectric parameters corresponding to the device test frequency.

The head tissue dielectric parameters recommended by IEEE Std 1528-2013 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in 1528 are derived from tissue dielectric parameters computed from the 4-Cole-Cole equations described above and extrapolated according to the head parameters specified in 1528.

Target Frequency	Head Tissue		Body Tissue	
MHz	εr	σ (S/m)	εr	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
750	**41.9**	**0.89**	**55.5**	**0.96**
835	**41.5**	**0.90**	**55.2**	**0.97**
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	**40.0**	**1.40**	**53.3**	**1.52**
2450	**39.2**	**1.80**	**52.7**	**1.95**
2600	39.0	1.96	52.5	2.16
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness Power drifts in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Table 2: Recommended Dielectric Performance of Tissue

Recommended Dielectric Performance of Tissue						
Head/Body						
Ingredients (% by weight)	Frequency (MHz)					
	750	835	1800	1900	2450	2600
Water	40.52	41.45	55.2	54.9	62.7	54.8
Salt (Nacl)	1.61	1.45	0.3	0.18	0.5	0.1
Sugar	57.67	56.0	0.0	0.0	0.0	0.0
HEC	0.1	1.0	0.0	0.0	0.0	0.0
Bactericide	0.1	0.1	0.0	0.0	0.0	0.0
Triton x-100	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	44.5	44.92	0.0	45.1
Dielectric	40.93	42.54	40.0	39.9	39.8	39.0
Conductivity	0.87	0.91	1.40	1.42	1.88	1.96

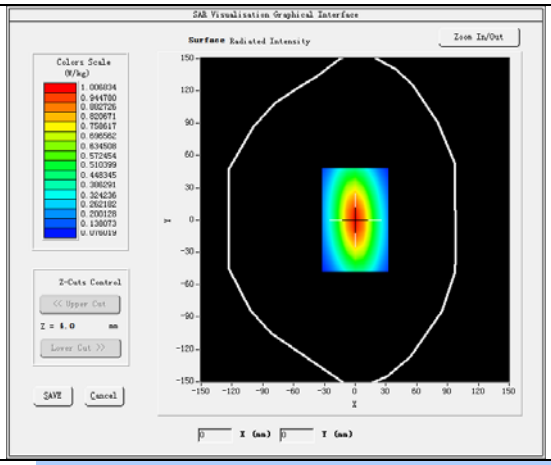
Table 3: Dielectric Performance of Head Tissue Simulating Liquid

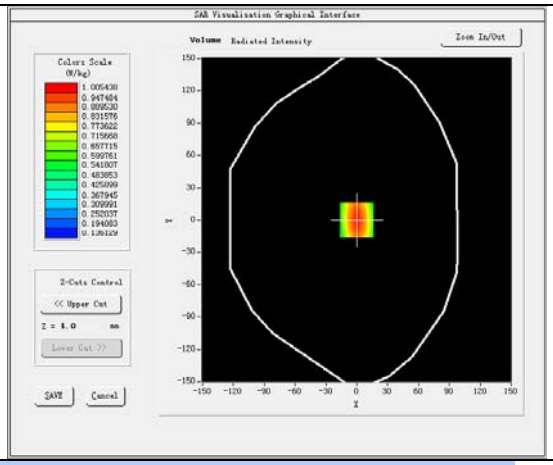
Temperature: 24.1°C , Relative humidity: 56%				
Frequency(MHz)	**Measured Date**	**Description**	**Dielectric Parameters**	
			εr	**σ(s/m)**
750	2024-07-17	Target Value ±5% window	41.90 39.81 — 44.00	0.89 0.85 — 0.93
		Measurement Value	41.91	0.90
835	2024-07-17	Target Value ±5% window	41.50 39.43 — 43.58	0.90 0.86 — 0.95
		Measurement Value	41.58	0.92
1800	2024-07-16	Target Value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47
		Measurement Value	39.35	1.40
1900	2024-07-16	Target Value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47
		Measurement Value	40.08	1.39
2450	2024-07-10	Target Value ±5% window	39.2 37.24— 41.16	1.80 1.71 — 1.89
		Measurement Value	39.16	1.84

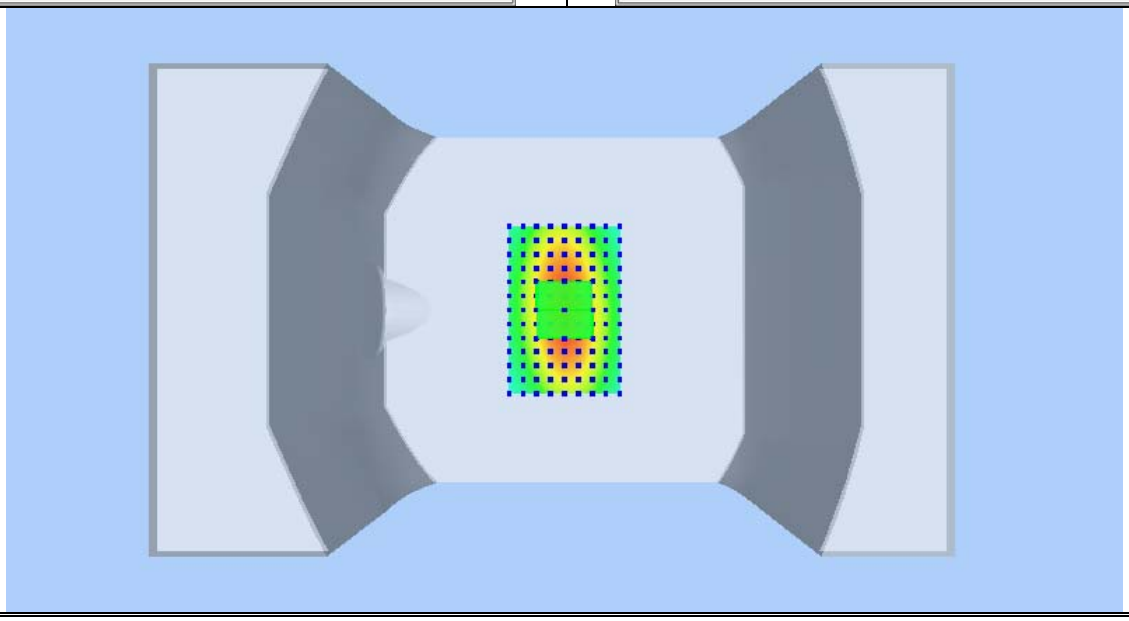
System Verification Plots

Product Description: Dipole
Model: SID750
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	750.000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Input power	100mW
Crest factor	1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.21
SAR 10g (W/kg)	0.590557
SAR 1g (W/kg)	0.920652
SURFACE SAR	**VOLUME SAR**

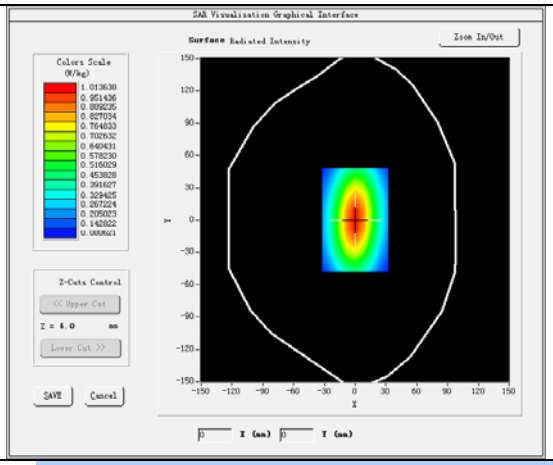


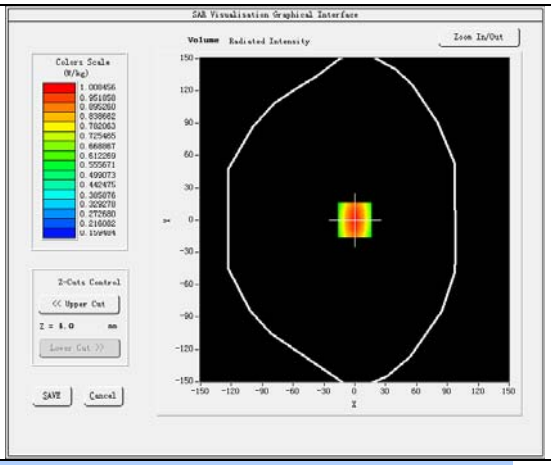


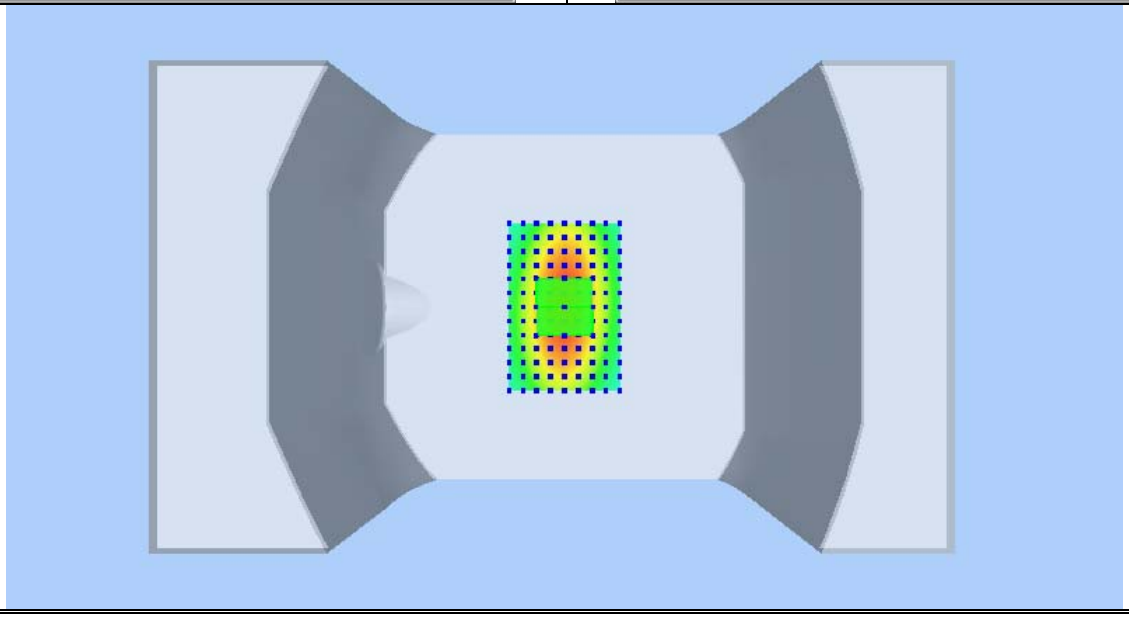


Product Description: Dipole
Model: SID835
Test Date: 2024-07-17

Medium(liquid type)	HL850
Frequency (MHz)	835.000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Input power	100mW
Crest factor	1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	2.35
SAR 10g (W/kg)	0.613409
SAR 1g (W/kg)	0.943065
SURFACE SAR	**VOLUME SAR**

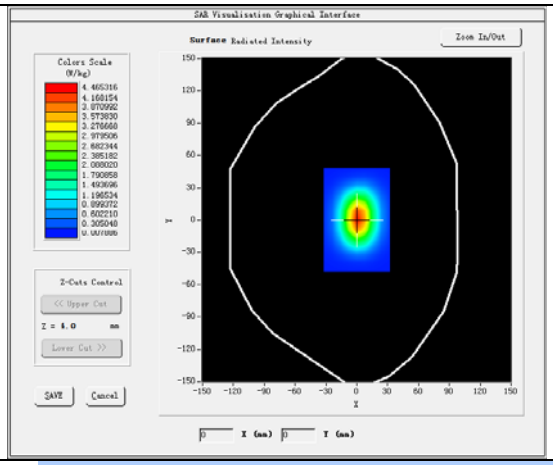


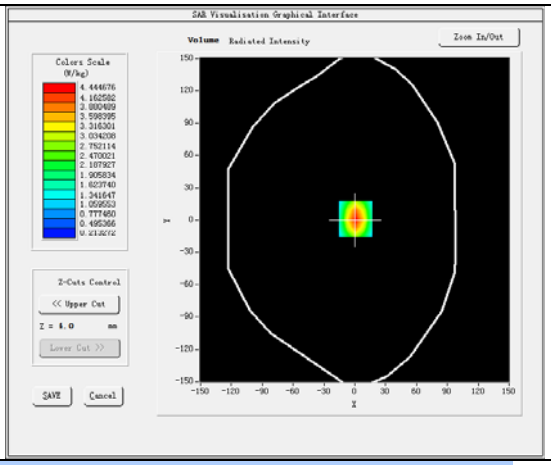


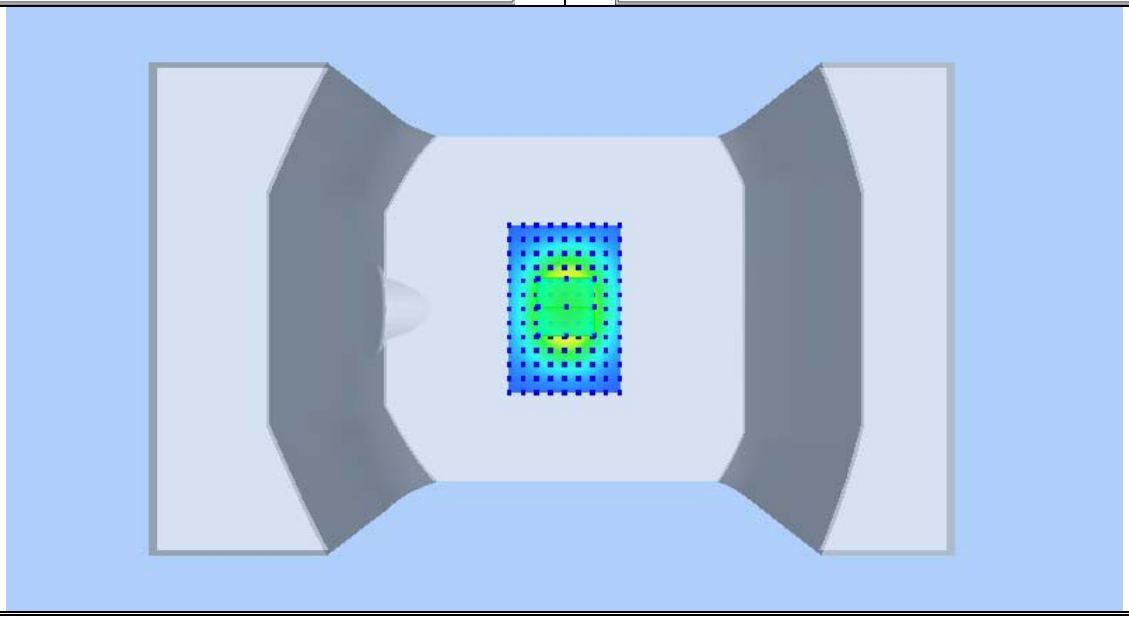


Product Description: Dipole
Model: SID1800
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1800.000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Input power	100mW
Crest factor	1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-1.60
SAR 10g (W/kg)	2.122985
SAR 1g (W/kg)	4.123960
SURFACE SAR	**VOLUME SAR**

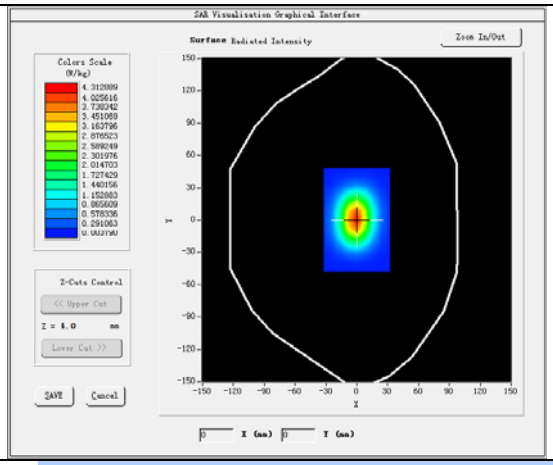


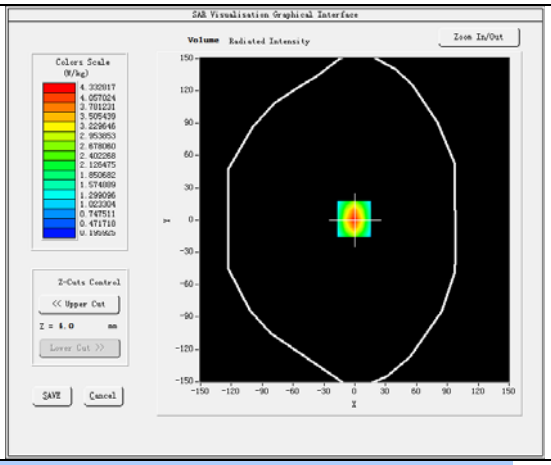


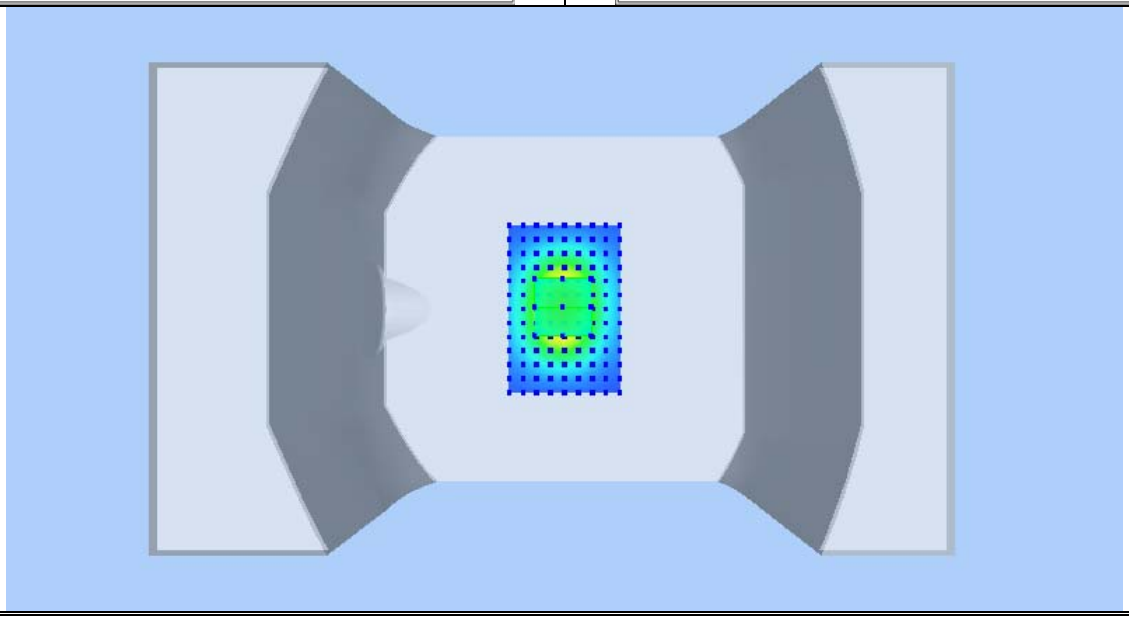


Product Description: Dipole
Model: SID1900
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1900.000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Input power	100mW
Crest factor	1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.28
SAR 10g (W/kg)	2.103220
SAR 1g (W/kg)	3.988017
SURFACE SAR	**VOLUME SAR**

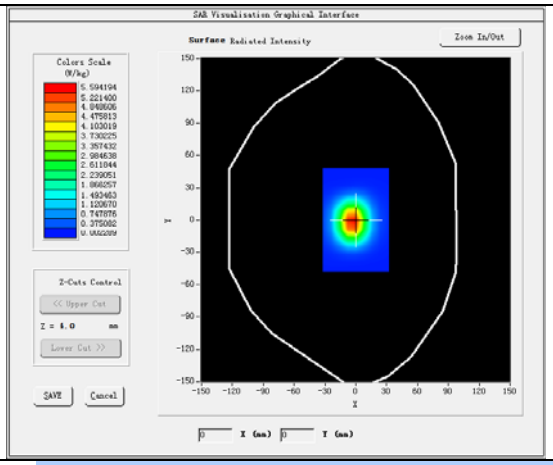


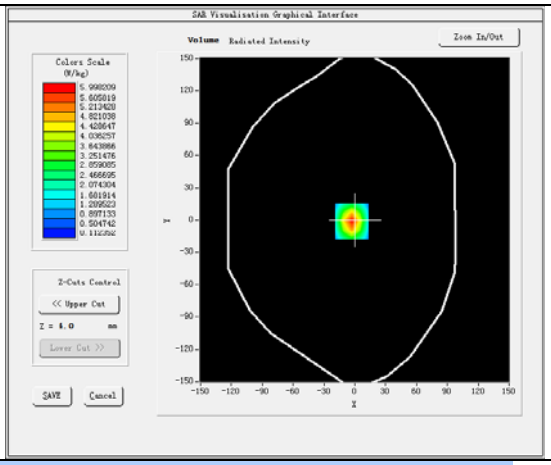


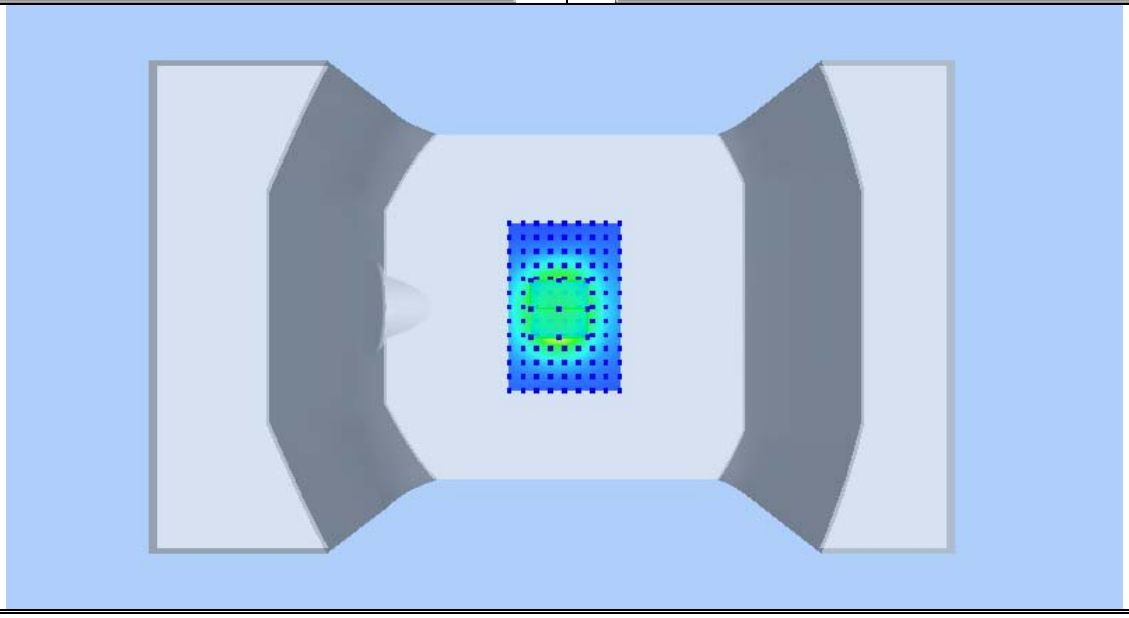


Product Description: Dipole
Model: SID2450
Test Date: 2024-07-10

Medium(liquid type)	HL2450
Frequency (MHz)	2450.000
Relative permittivity (real part)	39.16
Conductivity (S/m)	1.84
Input power	100mW
Crest factor	1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	3.03
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-2.14
SAR 10g (W/kg)	2.608531
SAR 1g (W/kg)	5.535496
SURFACE SAR	**VOLUME SAR**







10 Type a Measurement Uncertainty

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience and specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in Table below :

Uncertainty Distribution	Normal	Rectangle	Triangular	U Shape
Multi-plying Factor(a)	1/k(b)	1 / √3	1 / √6	1 / √2

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity
(b) κ is the coverage factor

Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type -sum- by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %.

The COMOSAR Uncertainty Budget is show in below table:

UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK								
a	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System								
Probe calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	√3	(1_Cp) ^1/2	(1_Cp)^1/ 2	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	√3	(Cp)^1 /2	(Cp)^1/2	2.41	2.41	∞
Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
Linearity	4.7	R	√ 3	1	1	2.71	2.71	∞
System detection limits	1.0	R	√3	1	1	0.58	0.58	∞
Modulation response	0.00	N	1	1	1	0.00	0.00	∞
Readout Electronics	0.50	N	1	1	1	0.50	0.50	∞
Reponse Time	0.0	R	√3	1	1	0.00	0.00	∞
Integration Time	1.4	R	√3	1	1	0.81	0.81	∞
RF ambient Conditions - Noise	3.0	R	√3	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3.0	R	√3	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.40	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	2.3	R	√3	1	1	1.33	1.33	∞
Dipole								
Deviation of experimental source from numerical source	4.00	N	1	1	1	4.00	4.00	∞
Input power and SAR drift measurement	5.00	R	√3	1	1	2.89	2.89	∞
Dipole axis to liquid Distance	2.00	R	√3	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and thickness tolerances)	4.00	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2.00	N	1	1	1	2.00	1.68	∞
Liquid conductivity (temperature uncertainty)	2.50	N	1	0.78	0.71	1.95	1.77	∞
Liquid conductivity - measurement uncertainty	4.00	N	1	0.23	0.26	0.92	1.04	M
Liquid permittivity (temperature uncertainty)	2.50	N	1	0.78	0.71	1.95	1.77	∞
Liquid permittivity - measurement uncertainty	5.00	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				10.21	10.12	
Expanded Uncertainty (95% Confidence interval)		k				19.91	19.73	

UNCERTAINTY EVALUATION FOR HANDSET SAR TEST								
a	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System								
Probe calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	√3	(1_Cp) ^ 1/2	(1_Cp)^1/2	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	√3	(Cp)^ 1/2	(Cp)^ 1/2	2.41	2.41	∞
Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
Linearity	4.7	R	√3	1	1	2.71	2.71	∞
System detection limits	1.0	R	√3	1	1	0.58	0.58	∞
Modulation response	3.00	N	1	1	1	3.00	3.00	∞
Readout Electronics	0.50	N	1	1	1	0.50	0.50	∞
Reponse Time	0.0	R	√3	1	1	0.00	0.00	∞
Integration Time	1.4	R	√3	1	1	0.81	0.81	∞
RF ambient Conditions - Noise	3.0	R	√3	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3.0	R	√3	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.40	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	2.3	R	√3	1	1	1.33	1.33	∞
Test sample Related								
Test sample positioning	2.60	N	1	1	1	2.60	2.60	N-1
Device Holder Uncertainty	3.00	N	1	1	1	3.00	3.00	N-1
Output power Variation - SAR drift measurement	5.00	R	√3	1	1	2.89	2.89	∞
SAR scaling	2.00	R	√3	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and thickness tolerances)	4.00	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2.00	N	1	1	1	2.00	1.68	∞
Liquid conductivity (temperature uncertainty)	2.50	N	1	0.78	0.71	1.95	1.77	∞
Liquid conductivity - measurement uncertainty	4.00	N	1	0.23	0.26	0.92	1.04	M
Liquid permittivity (temperature uncertainty)	2.50	N	1	0.78	0.71	1.95	1.77	∞
Liquid permittivity - measurement uncertainty	5.00	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				10.63	10.54	
Expanded Uncertainty (95% Confidence interval)		k				20.73	20.56	

11 Output Power Verification

11.1 Test Condition

1. Conducted Measurement
   EUT was set for low, mid, high channel with modulated mode and highest RF output power.
   The base station simulator was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
3. Environmental Conditions

Temperature	24.1°C
Relative Humidity	56%
Atmospheric Pressure	1015mbar

11.2 Test Procedures

Wonder Phone radio output power measurement

1. The transmitter output port was connected to base station emulator.
2. Establish communication link between emulator and EUT and set EUT to operate at maximum output power all the time.
3. Select lowest, middle, and highest channels for each band and different possible test mode.
4. Measure the conducted peak burst power and conducted average burst power from EUT antenna port.

Other radio output power measurement:

The output power was measured using power meter at low, mid, and hi channels.

Source-based Time Averaged Burst Power Calculation:

For TDMA, the following duty cycle factor was used to calculate the source-based time average power

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Duty cycle factor	-9.03 dB	-6.02 dB	-4.26 dB	-3.01 dB
Crest Factor	8	4	2.66	2

Remark: *Time slot duty cycle factor = 10 * log (Time Slot Duty Cycle)*
Source based time averaged power = Maximum burst averaged power (1 Uplink) – 9.03 dB
Source based time averaged power = Maximum burst averaged power (2 Uplink) – 6.02 dB
Source based time averaged power = Maximum burst averaged power (3 Uplink) – 4.26 dB
Source based time averaged power = Maximum burst averaged power (4 Uplink) – 3.01 dB

11.3 Test Result

Burst Average Power (dBm)								
Band	**GSM850**				**PCS1900**			
Channel	128	190	251	Tune up Power tolerant	512	661	810	Tune up Power tolerant
Frequency (MHz)	824.2	836.6	848.8	/	1850.2	1880	1909.8	/
GSM Voice	33.36	**33.49**	33.41	33±1	**28.63**	28.50	28.42	28±1
GPRS 1 slots	32.91	32.98	33.02	33±1	28.68	28.53	28.47	28±1
GPRS 2 slots	31.83	31.68	31.64	31±1	27.91	27.49	27.51	27±1
GPRS 3 slots	30.54	30.24	30.57	30±1	26.33	26.57	26.82	26±1
GPRS 4 slots	29.61	**29.73**	29.47	29±1	25.71	**25.91**	25.19	25±1
EGPRS 1 slots	26.15	26.17	26.39	26±1	25.02	24.96	24.98	25±1
EGPRS 2 slots	25.31	25.48	25.64	25±1	24.05	23.84	23.76	24±1
EGPRS 3 slots	24.56	24.31	24.81	24±1	23.25	22.69	22.82	23±1
EGPRS 4 slots	23.81	23.76	23.57	23±1	22.61	21.86	21.94	22±1

Remark :
GPRS, CS1 coding scheme.
EGPRS, MCS5 coding scheme.
Multi 1 Slot , Support Max 4 downlink, 1 uplink , 5 working link
Multi 2 Slots , Support Max 4 downlink, 2 uplink , 5 working link
Multi 3 Slots , Support Max 4 downlink, 3 uplink , 5 working link
Multi 4 Slots , Support Max 4 downlink, 4 uplink , 5 working link

Source Based time Average Power (dBm)								
Band	**GSM850**				**PCS1900**			
Channel	128	190	251	Time Average factor	512	661	810	Time Average factor
Frequency (MHz)	824.2	836.6	848.8	/	1850.2	1880	1909.8	/
GSM Voice	24.33	24.46	24.38	-9.03	19.60	19.47	19.39	-9.03
GPRS 1 slots	23.88	23.95	23.99	-9.03	19.65	19.50	19.44	-9.03
GPRS 2 slots	25.81	25.66	25.62	-6.02	21.89	21.47	21.49	-6.02
GPRS 3 slots	26.28	25.98	26.31	-4.26	22.07	22.31	22.56	-4.26
GPRS 4 slots	26.60	**26.72**	26.46	-3.01	22.70	**22.90**	22.18	-3.01
EGPRS 1 slots	17.12	17.14	17.36	-9.03	15.99	15.93	15.95	-9.03
EGPRS 2 slots	19.29	19.46	19.62	-6.02	18.03	17.82	17.74	-6.02
EGPRS 3 slots	20.30	20.05	20.55	-4.26	18.99	18.43	18.56	-4.26
EGPRS 4 slots	20.80	20.75	20.56	-3.01	19.60	18.85	18.93	-3.01
Remark : Time average factor = 1 uplink , 10*log(1/8)=-9.03dB , 2 uplink , 10*log(2/8)=-6.02dB , 3 uplink , 10*log(3/8)=-4.26dB ,4 uplink , 10*log(4/8)=-3.01dB Source based time average power = Burst Average power + Time Average factor								

Note: DUT were set in GPRS(4Tx slots) for GSM 900 and GSM 1800 due to the Maximum source-base time average output power for body SAR.

WCDMA - Average Power (dBm)								
Band	**WCDMA Band II**				**WCDMA Band V**			
Channel	**9262**	**9400**	**9538**	**Tune up Power tolerant**	**4132**	**4183**	**4233**	**Tune up Power tolerant**
Frequency (MHz)	**1852.4**	**1880**	**1907.6**	**/**	**826.4**	**836.6**	**846.6**	**/**
RMC 12.2k	21.94	21.76	**21.98**	21±1	21.85	**21.86**	21.76	21±1
HSDPA Subtest-1	20.85	20.71	20.90	20±1	20.80	20.81	20.68	20±1
HSDPA Subtest-2	20.74	20.65	20.82	20±1	20.77	20.68	20.53	20±1
HSDPA Subtest-3	20.62	20.58	20.73	20±1	20.65	20.59	20.46	20±1
HSDPA Subtest-4	20.58	20.46	20.68	20±1	20.54	20.47	20.35	20±1
HSUPA Subtest-1	20.52	20.26	20.49	20±1	20.43	20.34	20.27	20±1
HSUPA Subtest-2	20.43	20.13	20.36	20±1	20.34	20.28	20.19	20±1
HSUPA Subtest-3	20.35	20.06	20.27	20±1	20.29	20.18	20.08	20±1
HSUPA Subtest-4	20.25	19.95	20.18	20±1	20.18	20.04	19.95	20±1
HSUPA Subtest-5	20.16	19.84	20.04	20±1	20.07	19.97	19.86	20±1

WCDMA - Average Power (dBm)				
Band	**WCDMA Band IV**			
Channel	**1312**	**1413**	**1513**	**Tune up Power tolerant**
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**	**/**
RMC 12.2k	21.58	21.61	**21.66**	21±1
HSDPA Subtest-1	20.46	20.52	20.57	20±1
HSDPA Subtest-2	20.34	20.42	20.45	20±1
HSDPA Subtest-3	20.29	20.37	20.39	20±1
HSDPA Subtest-4	20.15	20.29	20.25	20±1
HSUPA Subtest-1	20.06	20.13	20.10	20±1
HSUPA Subtest-2	19.93	20.07	20.02	20±1
HSUPA Subtest-3	19.87	19.94	19.93	19±1
HSUPA Subtest-4	19.76	19.85	19.87	19±1
HSUPA Subtest-5	19.67	19.78	19.68	19±1

LTE Power Reduction

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

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 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-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 Signalling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling 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 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

LTE Band 2:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	18607	1850.7	QPSK	1	0	20.68	20.0±1	/
				1	2	20.79	20.0±1	/
				1	5	20.6	20.0±1	/
				3	0	20.66	20.0±1	/
				3	1	20.74	20.0±1	/
				3	2	20.71	20.0±1	/
				6	0	19.68	20.0±1	1.0
			16QAM	1	0	19.81	19.0±1	1.0
				1	2	19.99	19.0±1	1.0
				1	5	19.79	19.0±1	1.0
				3	0	19.8	19.0±1	1.0
				3	1	19.81	19.0±1	1.0
				3	2	19.8	19.0±1	1.0
				6	0	18.85	19.0±1	1.0
	18900	1880	QPSK	1	0	19.91	19.5±1	/
				1	2	20.07	19.5±1	/
				1	5	19.94	19.5±1	/
				3	0	20.05	19.5±1	/
				3	1	20.06	19.5±1	/
				3	2	20.03	19.5±1	/
				6	0	18.99	19.5±1	1.0
			16QAM	1	0	19.37	18.5±1	1.0
				1	2	19.49	18.5±1	1.0
				1	5	19.35	18.5±1	1.0
				3	0	19.31	18.5±1	1.0
				3	1	19.26	18.5±1	1.0
				3	2	19.27	18.5±1	1.0
				6	0	17.89	18.5±1	1.0
	19193	1909.3	QPSK	1	0	19.81	19.0±1	/
				1	2	19.96	19.0±1	/
				1	5	19.77	19.0±1	/
				3	0	19.94	19.0±1	/
				3	1	19.93	19.0±1	/
				3	2	19.97	19.0±1	/
				6	0	18.88	19.0±1	1.0
			16QAM	1	0	18.87	19.0±1	1.0
				1	2	19.12	19.0±1	1.0
				1	5	18.91	19.0±1	1.0
				3	0	19.13	19.0±1	1.0
				3	1	19.17	19.0±1	1.0
				3	2	19.13	19.0±1	1.0
				6	0	18.07	19.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	18615	1851.5	QPSK	1	0	20.75	20.0±1	/
				1	8	20.62	20.0±1	/
				1	14	20.58	20.0±1	/
				6	0	19.78	20.0±1	1.0
				6	4	19.73	20.0±1	1.0
				6	9	19.69	20.0±1	1.0
				15	0	19.72	20.0±1	1.0
			16QAM	1	0	19.77	19.0±1	1.0
				1	8	19.7	19.0±1	1.0
				1	14	19.63	19.0±1	1.0
				6	0	18.92	19.0±1	1.0
				6	4	18.85	19.0±1	1.0
				6	9	18.81	19.0±1	1.0
				15	0	18.77	19.0±1	1.0
	18900	1880	QPSK	1	0	20.04	20.0±1	/
				1	8	20.03	20.0±1	/
				1	14	19.98	20.0±1	/
				6	0	19.05	20.0±1	1.0
				6	4	19.06	20.0±1	1.0
				6	9	19.04	20.0±1	1.0
				15	0	19.07	20.0±1	1.0
			16QAM	1	0	19.41	19.0±1	1.0
				1	8	19.47	19.0±1	1.0
				1	14	19.48	19.0±1	1.0
				6	0	18.15	19.0±1	1.0
				6	4	18.15	19.0±1	1.0
				6	9	18.11	19.0±1	1.0
				15	0	18.08	19.0±1	1.0
	19185	1908.5	QPSK	1	0	19.93	19.0±1	/
				1	8	19.89	19.0±1	/
				1	14	19.91	19.0±1	/
				6	0	18.98	19.0±1	1.0
				6	4	18.97	19.0±1	1.0
				6	9	18.92	19.0±1	1.0
				15	0	18.96	19.0±1	1.0
			16QAM	1	0	19.06	18.5±1	1.0
				1	8	18.99	18.5±1	1.0
				1	14	18.92	18.5±1	1.0
				6	0	18	18.5±1	1.0
				6	4	18.02	18.5±1	1.0
				6	9	17.97	18.5±1	1.0
				15	0	17.9	18.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	18625	1852.5	QPSK	1	0	20.61	20.0±1	/
				1	12	20.68	20.0±1	/
				1	24	20.45	20.0±1	/
				12	0	19.72	20.0±1	1.0
				12	6	19.65	20.0±1	1.0
				12	11	19.53	20.0±1	1.0
				25	0	19.65	20.0±1	1.0
			16QAM	1	0	19.82	19.0±1	1.0
				1	12	19.83	19.0±1	1.0
				1	24	19.69	19.0±1	1.0
				12	0	18.76	19.0±1	1.0
				12	6	18.74	19.0±1	1.0
				12	11	18.57	19.0±1	1.0
				25	0	18.63	19.0±1	1.0
	18900	1880	QPSK	1	0	19.88	19.5±1	/
				1	12	20.03	19.5±1	/
				1	24	19.82	19.5±1	/
				12	0	19	19.5±1	1.0
				12	6	19.03	19.5±1	1.0
				12	11	18.85	19.5±1	1.0
				25	0	18.91	19.5±1	1.0
			16QAM	1	0	19.43	18.6±1	1.0
				1	12	19.54	18.6±1	1.0
				1	24	19.33	18.6±1	1.0
				12	0	18.09	18.6±1	1.0
				12	6	18.15	18.6±1	1.0
				12	11	18.02	18.6±1	1.0
				25	0	17.97	18.6±1	1.0
	19175	1907.5	QPSK	1	0	19.79	19.0±1	/
				1	12	19.88	19.0±1	/
				1	24	19.71	19.0±1	/
				12	0	19	19.0±1	1.0
				12	6	18.9	19.0±1	1.0
				12	11	18.78	19.0±1	1.0
				25	0	18.88	19.0±1	1.0
			16QAM	1	0	18.99	18.5±1	1.0
				1	12	19.05	18.5±1	1.0
				1	24	18.91	18.5±1	1.0
				12	0	18.05	18.5±1	1.0
				12	6	17.98	18.5±1	1.0
				12	11	17.81	18.5±1	1.0
				25	0	17.87	18.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	18650	1855	QPSK	1	0	20.59	20.0±1	/
				1	24	20.62	20.0±1	/
				1	49	20.37	20.0±1	/
				25	0	19.86	20.0±1	1.0
				25	12	19.62	20.0±1	1.0
				25	24	19.49	20.0±1	1.0
				50	0	19.7	20.0±1	1.0
			16QAM	1	0	19.64	19.0±1	1.0
				1	24	19.65	19.0±1	1.0
				1	49	19.41	19.0±1	1.0
				25	0	18.89	19.0±1	1.0
				25	12	18.63	19.0±1	1.0
				25	24	18.53	19.0±1	1.0
				50	0	18.67	19.0±1	1.0
	18900	1880	QPSK	1	0	19.93	19.5±1	/
				1	24	20.11	19.5±1	/
				1	49	19.84	19.5±1	/
				25	0	19.08	19.5±1	1.0
				25	12	19.03	19.5±1	1.0
				25	24	18.95	19.5±1	1.0
				50	0	19.05	19.5±1	1.0
			16QAM	1	0	19.37	18.6±1	1.0
				1	24	19.57	18.6±1	1.0
				1	49	19.29	18.6±1	1.0
				25	0	18.16	18.6±1	1.0
				25	12	18.06	18.6±1	1.0
				25	24	17.98	18.6±1	1.0
				50	0	18.05	18.6±1	1.0
	19150	1905	QPSK	1	0	19.93	19.0±1	/
				1	24	19.98	19.0±1	/
				1	49	19.77	19.0±1	/
				25	0	19.07	19.0±1	1.0
				25	12	18.96	19.0±1	1.0
				25	24	18.74	19.0±1	1.0
				50	0	18.95	19.0±1	1.0
			16QAM	1	0	18.99	18.5±1	1.0
				1	24	19.13	18.5±1	1.0
				1	49	18.85	18.5±1	1.0
				25	0	18.13	18.5±1	1.0
				25	12	18.04	18.5±1	1.0
				25	24	17.85	18.5±1	1.0
				50	0	17.97	18.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
15MHz	18675	1857.5	QPSK	1	0	20.41	20.0±1	/
				1	37	20.41	20.0±1	/
				1	74	20.09	20.0±1	/
				36	0	19.69	20.0±1	1.0
				36	16	19.51	20.0±1	1.0
				36	35	19.4	20.0±1	1.0
				75	0	19.5	20.0±1	1.0
			16QAM	1	0	19.47	19.0±1	1.0
				1	37	19.49	19.0±1	1.0
				1	74	19.13	19.0±1	1.0
				36	0	18.66	19.0±1	1.0
				36	16	18.5	19.0±1	1.0
				36	35	18.36	19.0±1	1.0
				75	0	18.55	19.0±1	1.0
	18900	1880	QPSK	1	0	19.85	19.0±1	/
				1	37	19.91	19.0±1	/
				1	74	19.63	19.0±1	/
				36	0	18.99	19.0±1	1.0
				36	16	18.94	19.0±1	1.0
				36	35	18.84	19.0±1	1.0
				75	0	18.89	19.0±1	1.0
			16QAM	1	0	19.29	18.5±1	1.0
				1	37	19.38	18.5±1	1.0
				1	74	19.11	18.5±1	1.0
				36	0	18.01	18.5±1	1.0
				36	16	18	18.5±1	1.0
				36	35	17.85	18.5±1	1.0
				75	0	17.87	18.5±1	1.0
	19125	1902.5	QPSK	1	0	19.68	19.0±1	/
				1	37	19.87	19.0±1	/
				1	74	19.57	19.0±1	/
				36	0	18.89	19.0±1	1.0
				36	16	18.92	19.0±1	1.0
				36	35	18.7	19.0±1	1.0
				75	0	18.78	19.0±1	1.0
			16QAM	1	0	19.2	18.5±1	1.0
				1	37	19.41	18.5±1	1.0
				1	74	19.13	18.5±1	1.0
				36	0	17.81	18.5±1	1.0
				36	16	17.92	18.5±1	1.0
				36	35	17.66	18.5±1	1.0
				75	0	17.76	18.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
20MHz	18700	1860	QPSK	1	0	20.63	20.0±1	/
				1	49	**20.80**	20.0±1	/
				1	99	19.86	20.0±1	/
				50	0	19.83	20.0±1	1.0
				50	24	19.48	20.0±1	1.0
				50	49	19.44	20.0±1	1.0
				100	0	19.64	20.0±1	1.0
			16QAM	1	0	19.92	20.0±1	1.0
				1	49	20.16	20.0±1	1.0
				1	99	19.4	20.0±1	1.0
				50	0	18.86	18.0±1	1.0
				50	24	18.56	18.0±1	1.0
				50	49	18.49	18.0±1	1.0
				100	0	18.65	18.0±1	1.0
	18900	1880	QPSK	1	0	19.86	19.5±1	/
				1	49	20.15	19.5±1	/
				1	99	19.47	19.5±1	/
				50	0	18.95	19.5±1	1.0
				50	24	19.02	19.5±1	1.0
				50	49	18.79	19.5±1	1.0
				100	0	18.92	19.5±1	1.0
			16QAM	1	0	19.34	18.7±1	1.0
				1	49	19.65	18.7±1	1.0
				1	99	19.05	18.7±1	1.0
				50	0	18.01	18.7±1	1.0
				50	24	18.01	18.7±1	1.0
				50	49	17.78	18.7±1	1.0
				100	0	17.89	18.7±1	1.0
	19100	1900	QPSK	1	0	19.32	19.5±1	/
				1	49	20.03	19.5±1	/
				1	99	19.43	19.5±1	/
				50	0	18.75	19.5±1	1.0
				50	24	18.9	19.5±1	1.0
				50	49	18.68	19.5±1	1.0
				100	0	18.73	19.5±1	1.0
			16QAM	1	0	18.82	18.5±1	1.0
				1	49	19.48	18.5±1	1.0
				1	99	18.96	18.5±1	1.0
				50	0	17.72	18.5±1	1.0
				50	24	17.9	18.5±1	1.0
				50	49	17.66	18.5±1	1.0
				100	0	17.71	18.5±1	1.0

LTE Band 4:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	19957	1710.7	QPSK	1	0	21.3	21.0±1	/
				1	2	21.41	21.0±1	/
				1	5	21.25	21.0±1	/
				3	0	21.41	21.0±1	/
				3	1	21.41	21.0±1	/
				3	2	21.36	21.0±1	/
				6	0	20.38	21.0±1	1.0
			16QAM	1	0	20.44	20.0±1	1.0
				1	2	20.63	20.0±1	1.0
				1	5	20.41	20.0±1	1.0
				3	0	20.48	20.0±1	1.0
				3	1	20.47	20.0±1	1.0
				3	2	20.46	20.0±1	1.0
				6	0	19.5	20.0±1	1.0
	20175	1732.5	QPSK	1	0	20.74	20.0±1	/
				1	2	20.94	20.0±1	/
				1	5	20.76	20.0±1	/
				3	0	20.82	20.0±1	/
				3	1	20.89	20.0±1	/
				3	2	20.84	20.0±1	/
				6	0	19.83	20.0±1	1.0
			16QAM	1	0	20.14	19.5±1	1.0
				1	2	20.32	19.5±1	1.0
				1	5	20.16	19.5±1	1.0
				3	0	20.07	19.5±1	1.0
				3	1	20.12	19.5±1	1.0
				3	2	20.08	19.5±1	1.0
				6	0	18.72	19.5±1	1.0
	20393	1754.3	QPSK	1	0	20.79	20.0±1	/
				1	2	20.95	20.0±1	/
				1	5	20.75	20.0±1	/
				3	0	20.93	20.0±1	/
				3	1	20.99	20.0±1	/
				3	2	20.96	20.0±1	/
				6	0	19.86	20.0±1	1.0
			16QAM	1	0	19.87	20.0±1	1.0
				1	2	20.09	20.0±1	1.0
				1	5	19.91	20.0±1	1.0
				3	0	20.14	20.0±1	1.0
				3	1	20.15	20.0±1	1.0
				3	2	20.13	20.0±1	1.0
				6	0	19.04	20.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	19965	1711.5	QPSK	1	0	21.37	21.0±1	/
				1	8	21.32	21.0±1	/
				1	14	21.2	21.0±1	/
				6	0	20.43	21.0±1	1.0
				6	4	20.45	21.0±1	1.0
				6	9	20.37	21.0±1	1.0
				15	0	20.38	21.0±1	1.0
			16QAM	1	0	20.4	20.0±1	1.0
				1	8	20.32	20.0±1	1.0
				1	14	20.25	20.0±1	1.0
				8	0	19.55	20.0±1	1.0
				8	4	19.55	20.0±1	1.0
				8	9	19.48	20.0±1	1.0
				15	0	19.44	20.0±1	1.0
	20175	1732.5	QPSK	1	0	20.85	20.0±1	/
				1	8	20.87	20.0±1	/
				1	14	20.87	20.0±1	/
				6	0	19.86	20.0±1	1.0
				6	4	19.93	20.0±1	1.0
				6	9	19.89	20.0±1	1.0
				15	0	19.89	20.0±1	1.0
			16QAM	1	0	20.31	19.5±1	1.0
				1	8	20.32	19.5±1	1.0
				1	14	20.32	19.5±1	1.0
				6	0	18.99	19.5±1	1.0
				6	4	18.98	19.5±1	1.0
				6	9	18.96	19.5±1	1.0
				15	0	18.89	19.5±1	1.0
	20385	1753.5	QPSK	1	0	20.9	20.0±1	/
				1	8	20.93	20.0±1	/
				1	14	20.85	20.0±1	/
				6	0	19.95	20.0±1	1.0
				6	4	19.99	20.0±1	1.0
				6	9	19.94	20.0±1	1.0
				15	0	20	20.0±1	1.0
			16QAM	1	0	20.02	19.5±1	1.0
				1	8	20.01	19.5±1	1.0
				1	14	19.96	19.5±1	1.0
				8	0	18.97	19.5±1	1.0
				8	4	19.02	19.5±1	1.0
				8	9	18.97	19.5±1	1.0
				15	0	18.92	19.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	19975	1712.5	QPSK	1	0	21.23	21.0±1	/
				1	49	21.3	21.0±1	/
				1	99	21.08	21.0±1	/
				12	0	20.27	21.0±1	1.0
				12	24	20.3	21.0±1	1.0
				12	49	20.23	21.0±1	1.0
				25	0	20.23	21.0±1	1.0
			16QAM	1	0	20.46	20.0±1	1.0
				1	49	20.46	20.0±1	1.0
				1	99	20.31	20.0±1	1.0
				12	0	19.33	20.0±1	1.0
				12	24	19.38	20.0±1	1.0
				12	49	19.28	20.0±1	1.0
				25	0	19.28	20.0±1	1.0
	20175	1732.5	QPSK	1	0	20.72	20.0±1	/
				1	49	20.84	20.0±1	/
				1	99	20.7	20.0±1	/
				12	0	19.82	20.0±1	1.0
				12	24	19.87	20.0±1	1.0
				12	49	19.74	20.0±1	1.0
				25	0	19.8	20.0±1	1.0
			16QAM	1	0	20.27	19.5±1	1.0
				1	49	20.4	19.5±1	1.0
				1	99	20.19	19.5±1	1.0
				12	0	18.95	19.5±1	1.0
				12	24	18.98	19.5±1	1.0
				12	49	18.84	19.5±1	1.0
				25	0	18.86	19.5±1	1.0
	20375	1752.5	QPSK	1	0	20.74	20.0±1	/
				1	49	20.84	20.0±1	/
				1	99	20.72	20.0±1	/
				12	0	19.82	20.0±1	1.0
				12	24	19.92	20.0±1	1.0
				12	49	19.8	20.0±1	1.0
				25	0	19.84	20.0±1	1.0
			16QAM	1	0	19.91	19.5±1	1.0
				1	49	20	19.5±1	1.0
				1	99	19.92	19.5±1	1.0
				12	0	18.89	19.5±1	1.0
				12	24	18.95	19.5±1	1.0
				12	49	18.92	19.5±1	1.0
				25	0	18.8	19.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	20000	1715	QPSK	1	0	21.27	21.0±1	/
				1	49	21.34	21.0±1	/
				1	99	21.02	21.0±1	/
				25	0	20.33	21.0±1	1.0
				25	24	20.28	21.0±1	1.0
				25	49	20.32	21.0±1	1.0
				50	0	20.34	21.0±1	1.0
			16QAM	1	0	20.28	20.0±1	1.0
				1	49	20.36	20.0±1	1.0
				1	99	20.05	20.0±1	1.0
				25	0	19.34	20.0±1	1.0
				25	24	19.31	20.0±1	1.0
				25	49	19.37	20.0±1	1.0
				50	0	19.37	20.0±1	1.0
	20175	1732.5	QPSK	1	0	20.74	20.0±1	/
				1	49	20.99	20.0±1	/
				1	99	20.66	20.0±1	/
				25	0	19.96	20.0±1	1.0
				25	24	19.86	20.0±1	1.0
				25	49	19.85	20.0±1	1.0
				50	0	19.87	20.0±1	1.0
			16QAM	1	0	20.17	19.5±1	1.0
				1	49	20.36	19.5±1	1.0
				1	99	20.08	19.5±1	1.0
				25	0	18.95	19.5±1	1.0
				25	24	18.91	19.5±1	1.0
				25	49	18.83	19.5±1	1.0
				50	0	18.87	19.5±1	1.0
	20350	1750	QPSK	1	0	20.73	20.0±1	/
				1	49	20.94	20.0±1	/
				1	99	20.82	20.0±1	/
				25	0	20	20.0±1	1.0
				25	24	19.93	20.0±1	1.0
				25	49	19.94	20.0±1	1.0
				50	0	19.97	20.0±1	1.0
			16QAM	1	0	19.83	19.5±1	1.0
				1	49	20.1	19.5±1	1.0
				1	99	19.87	19.5±1	1.0
				25	0	19.07	19.5±1	1.0
				25	24	19	19.5±1	1.0
				25	49	19.01	19.5±1	1.0
				50	0	18.98	19.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
15MHz	20025	1717.5	QPSK	1	0	21.09	21.0±1	/
				1	49	21.13	21.0±1	/
				1	99	20.73	21.0±1	/
				36	0	20.19	21.0±1	1.0
				36	24	20.22	21.0±1	1.0
				36	49	20.13	21.0±1	1.0
				75	0	20.18	21.0±1	1.0
			16QAM	1	0	20.1	20.0±1	1.0
				1	49	20.12	20.0±1	1.0
				1	99	19.74	20.0±1	1.0
				36	0	19.13	20.0±1	1.0
				36	24	19.17	20.0±1	1.0
				36	49	19.07	20.0±1	1.0
				75	0	19.13	20.0±1	1.0
	20175	1732.5	QPSK	1	0	20.68	20.0±1	/
				1	49	20.8	20.0±1	/
				1	99	20.41	20.0±1	/
				36	0	19.86	20.0±1	1.0
				36	24	19.85	20.0±1	1.0
				36	49	19.7	20.0±1	1.0
				75	0	19.77	20.0±1	1.0
			16QAM	1	0	20.09	19.5±1	1.0
				1	49	20.22	19.5±1	1.0
				1	99	19.86	19.5±1	1.0
				36	0	18.86	19.5±1	1.0
				36	24	18.84	19.5±1	1.0
				36	49	18.73	19.5±1	1.0
				75	0	18.79	19.5±1	1.0
	20325	1747.5	QPSK	1	0	20.22	20.0±1	/
				1	49	20.79	20.0±1	/
				1	99	20.63	20.0±1	/
				36	0	19.63	20.0±1	1.0
				36	24	19.85	20.0±1	1.0
				36	49	19.82	20.0±1	1.0
				75	0	19.76	20.0±1	1.0
			16QAM	1	0	19.8	19.5±1	1.0
				1	49	20.4	19.5±1	1.0
				1	99	20.17	19.5±1	1.0
				36	0	18.58	19.5±1	1.0
				36	24	18.82	19.5±1	1.0
				36	49	18.8	19.5±1	1.0
				75	0	18.74	19.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
20MHz	20050	1720	QPSK	1	0	21.27	21.0±1	/
				1	49	**21.43**	21.0±1	/
				1	99	20.56	21.0±1	/
				50	0	20.16	21.0±1	1.0
				50	24	20.11	21.0±1	1.0
				50	49	20.1	21.0±1	1.0
				100	0	20.13	21.0±1	1.0
			16QAM	1	0	20.49	20.0±1	1.0
				1	49	20.79	20.0±1	1.0
				1	99	20.1	20.0±1	1.0
				50	0	19.18	20.0±1	1.0
				50	24	19.14	20.0±1	1.0
				50	49	19.09	20.0±1	1.0
				100	0	19.15	20.0±1	1.0
	20175	1732.5	QPSK	1	0	20.66	20.0±1	/
				1	49	20.99	20.0±1	/
				1	99	20.2	20.0±1	/
				50	0	19.97	20.0±1	1.0
				50	24	19.83	20.0±1	1.0
				50	49	19.66	20.0±1	1.0
				100	0	19.8	20.0±1	1.0
			16QAM	1	0	20.13	19.5±1	1.0
				1	49	20.47	19.5±1	1.0
				1	99	19.71	19.5±1	1.0
				50	0	18.96	19.5±1	1.0
				50	24	18.8	19.5±1	1.0
				50	49	18.66	19.5±1	1.0
				100	0	18.8	19.5±1	1.0
	20300	1745	QPSK	1	0	20.37	20.0±1	/
				1	49	20.89	20.0±1	/
				1	99	20.53	20.0±1	/
				50	0	19.77	20.0±1	1.0
				50	24	19.68	20.0±1	1.0
				50	49	19.88	20.0±1	1.0
				100	0	19.83	20.0±1	1.0
			16QAM	1	0	19.85	19.5±1	1.0
				1	49	20.41	19.5±1	1.0
				1	99	20.04	19.5±1	1.0
				50	0	18.7	19.5±1	1.0
				50	24	18.66	19.5±1	1.0
				50	49	18.83	19.5±1	1.0
				100	0	18.81	19.5±1	1.0

LTE Band 5:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	20407	824.7	QPSK	1	0	23.62	23.0±1	/
				1	2	23.76	23.0±1	/
				1	5	23.6	23.0±1	/
				3	0	23.71	23.0±1	/
				3	1	23.73	23.0±1	/
				3	2	23.76	23.0±1	/
				6	0	22.68	23.0±1	1.0
			16QAM	1	0	22.75	22.0±1	1.0
				1	2	22.93	22.0±1	1.0
				1	5	22.76	22.0±1	1.0
				3	0	22.75	22.0±1	1.0
				3	1	22.74	22.0±1	1.0
				3	2	22.74	22.0±1	1.0
				6	0	21.86	22.0±1	1.0
	20525	836.5	QPSK	1	0	23.3	23.0±1	/
				1	2	23.45	23.0±1	/
				1	5	23.32	23.0±1	/
				3	0	23.38	23.0±1	/
				3	1	23.46	23.0±1	/
				3	2	23.4	23.0±1	/
				6	0	22.37	23.0±1	1.0
			16QAM	1	0	22.7	22.0±1	1.0
				1	2	22.79	22.0±1	1.0
				1	5	22.75	22.0±1	1.0
				3	0	22.57	22.0±1	1.0
				3	1	22.62	22.0±1	1.0
				3	2	22.58	22.0±1	1.0
				6	0	21.26	22.0±1	1.0
	20634	848.3	QPSK	1	0	22.85	22.5±1	/
				1	2	23.01	22.5±1	/
				1	5	22.79	22.5±1	/
				3	0	22.98	22.5±1	/
				3	1	22.98	22.5±1	/
				3	2	22.99	22.5±1	/
				6	0	21.95	22.5±1	1.0
			16QAM	1	0	21.93	22.0±1	1.0
				1	2	22.06	22.0±1	1.0
				1	5	21.93	22.0±1	1.0
				3	0	22.1	22.0±1	1.0
				3	1	22.14	22.0±1	1.0
				3	2	22.17	22.0±1	1.0
				6	0	21.12	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	20415	825.5	QPSK	1	0	23.72	23.0±1	/
				1	8	23.66	23.0±1	/
				1	14	23.63	23.0±1	/
				6	0	22.75	23.0±1	1.0
				6	4	22.75	23.0±1	1.0
				6	9	22.69	23.0±1	1.0
				15	0	22.74	23.0±1	1.0
			16QAM	1	0	22.68	22.0±1	1.0
				1	8	22.61	22.0±1	1.0
				1	14	22.61	22.0±1	1.0
				8	0	21.9	22.0±1	1.0
				8	4	21.89	22.0±1	1.0
				8	9	21.84	22.0±1	1.0
				15	0	21.84	22.0±1	1.0
	20525	836.5	QPSK	1	0	23.37	23.0±1	/
				1	8	23.44	23.0±1	/
				1	14	23.43	23.0±1	/
				6	0	22.41	23.0±1	1.0
				6	4	22.51	23.0±1	1.0
				6	9	22.42	23.0±1	1.0
				15	0	22.43	23.0±1	1.0
			16QAM	1	0	22.75	22.0±1	1.0
				1	8	22.81	22.0±1	1.0
				1	14	22.82	22.0±1	1.0
				6	0	21.52	22.0±1	1.0
				6	4	21.59	22.0±1	1.0
				6	9	21.53	22.0±1	1.0
				15	0	21.46	22.0±1	1.0
	20635	847.5	QPSK	1	0	23.06	22.5±1	/
				1	8	23	22.5±1	/
				1	14	22.92	22.5±1	/
				6	0	22	22.5±1	1.0
				6	4	22.04	22.5±1	1.0
				6	9	21.97	22.5±1	1.0
				15	0	22.02	22.5±1	1.0
			16QAM	1	0	22.05	21.5±1	1.0
				1	8	22.03	21.5±1	1.0
				1	14	21.97	21.5±1	1.0
				8	0	21.04	21.5±1	1.0
				8	4	21.11	21.5±1	1.0
				8	9	21.05	21.5±1	1.0
				15	0	20.98	21.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	20425	826.5	QPSK	1	0	23.55	23.0±1	/
				1	49	23.63	23.0±1	/
				1	99	23.44	23.0±1	/
				12	0	22.68	23.0±1	1.0
				12	24	22.64	23.0±1	1.0
				12	49	22.57	23.0±1	1.0
				25	0	22.61	23.0±1	1.0
			16QAM	1	0	22.74	22.0±1	1.0
				1	49	22.84	22.0±1	1.0
				1	99	22.64	22.0±1	1.0
				12	0	21.77	22.0±1	1.0
				12	24	21.76	22.0±1	1.0
				12	49	21.61	22.0±1	1.0
				25	0	21.69	22.0±1	1.0
	20525	836.5	QPSK	1	0	23.28	23.0±1	/
				1	49	23.41	23.0±1	/
				1	99	23.28	23.0±1	/
				12	0	22.28	23.0±1	1.0
				12	24	22.39	23.0±1	1.0
				12	49	22.27	23.0±1	1.0
				25	0	22.31	23.0±1	1.0
			16QAM	1	0	22.77	22.0±1	1.0
				1	49	22.89	22.0±1	1.0
				1	99	22.77	22.0±1	1.0
				12	0	21.47	22.0±1	1.0
				12	24	21.56	22.0±1	1.0
				12	49	21.42	22.0±1	1.0
				25	0	21.39	22.0±1	1.0
	20625	846.5	QPSK	1	0	22.87	22.0±1	/
				1	49	22.95	22.0±1	/
				1	99	22.83	22.0±1	/
				12	0	21.82	22.0±1	1.0
				12	24	22	22.0±1	1.0
				12	49	21.82	22.0±1	1.0
				25	0	21.87	22.0±1	1.0
			16QAM	1	0	22.04	21.5±1	1.0
				1	49	22.06	21.5±1	1.0
				1	99	21.95	21.5±1	1.0
				12	0	20.94	21.5±1	1.0
				12	24	21.06	21.5±1	1.0
				12	49	20.95	21.5±1	1.0
				25	0	20.87	21.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	20450	829	QPSK	1	0	23.63	23.0±1	/
				1	49	**23.77**	23.0±1	/
				1	99	23.34	23.0±1	/
				25	0	22.78	23.0±1	1.0
				25	24	22.65	23.0±1	1.0
				25	49	22.64	23.0±1	1.0
				50	0	22.71	23.0±1	1.0
			16QAM	1	0	22.61	22.0±1	1.0
				1	49	22.73	22.0±1	1.0
				1	99	22.35	22.0±1	1.0
				25	0	21.82	22.0±1	1.0
				25	24	21.71	22.0±1	1.0
				25	49	21.68	22.0±1	1.0
				50	0	21.73	22.0±1	1.0
	20525	836.5	QPSK	1	0	23.43	23.0±1	/
				1	49	23.49	23.0±1	/
				1	99	23.34	23.0±1	/
				25	0	22.37	23.0±1	1.0
				25	24	22.44	23.0±1	1.0
				25	49	22.29	23.0±1	1.0
				50	0	22.36	23.0±1	1.0
			16QAM	1	0	22.76	22.0±1	1.0
				1	49	22.91	22.0±1	1.0
				1	99	22.77	22.0±1	1.0
				25	0	21.46	22.0±1	1.0
				25	24	21.52	22.0±1	1.0
				25	49	21.39	22.0±1	1.0
				50	0	21.42	22.0±1	1.0
	20600	844	QPSK	1	0	23.31	23.0±1	/
				1	49	23.18	23.0±1	/
				1	99	22.88	23.0±1	/
				25	0	22.47	23.0±1	1.0
				25	24	22.17	23.0±1	1.0
				25	49	22.08	23.0±1	1.0
				50	0	22.32	23.0±1	1.0
			16QAM	1	0	22.36	22.0±1	1.0
				1	49	22.23	22.0±1	1.0
				1	99	21.91	22.0±1	1.0
				25	0	21.63	22.0±1	1.0
				25	24	21.29	22.0±1	1.0
				25	49	21.19	22.0±1	1.0
				50	0	21.36	22.0±1	1.0

LTE Band 7:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	20775	2502.5	QPSK	1	0	19.61	19.0±1	/
				1	49	19.56	19.0±1	/
				1	99	19.21	19.0±1	/
				12	0	18.62	19.0±1	1.0
				12	24	18.61	19.0±1	1.0
				12	49	18.43	19.0±1	1.0
				25	0	18.57	19.0±1	1.0
			16QAM	1	0	18.81	18.0±1	1.0
				1	49	18.7	18.0±1	1.0
				1	99	18.42	18.0±1	1.0
				12	0	17.72	18.0±1	1.0
				12	24	17.67	18.0±1	1.0
				12	49	17.52	18.0±1	1.0
				25	0	17.54	18.0±1	1.0
	21100	2535	QPSK	1	0	18.64	18.0±1	/
				1	49	18.68	18.0±1	/
				1	99	18.58	18.0±1	/
				12	0	17.7	18.0±1	1.0
				12	24	17.75	18.0±1	1.0
				12	49	17.64	18.0±1	1.0
				25	0	17.67	18.0±1	1.0
			16QAM	1	0	17.84	17.0±1	1.0
				1	49	17.93	17.0±1	1.0
				1	99	17.78	17.0±1	1.0
				12	0	16.77	17.0±1	1.0
				12	24	16.81	17.0±1	1.0
				12	49	16.7	17.0±1	1.0
				25	0	16.73	17.0±1	1.0
	21425	2567.5	QPSK	1	0	18.83	18.0±1	/
				1	49	18.9	18.0±1	/
				1	99	18.76	18.0±1	/
				12	0	17.91	18.0±1	1.0
				12	24	17.88	18.0±1	1.0
				12	49	17.83	18.0±1	1.0
				25	0	17.9	18.0±1	1.0
			16QAM	1	0	18.35	17.5±1	1.0
				1	49	18.46	17.5±1	1.0
				1	99	18.29	17.5±1	1.0
				12	0	17.04	17.5±1	1.0
				12	24	17.04	17.5±1	1.0
				12	49	16.94	17.5±1	1.0
				25	0	16.93	17.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	20800	2505	QPSK	1	0	19.57	19.0±1	/
				1	49	19.44	19.0±1	/
				1	99	19.11	19.0±1	/
				25	0	18.63	19.0±1	1.0
				25	24	18.43	19.0±1	1.0
				25	49	18.35	19.0±1	1.0
				50	0	18.51	19.0±1	1.0
			16QAM	1	0	18.68	18.0±1	1.0
				1	49	18.53	18.0±1	1.0
				1	99	18.21	18.0±1	1.0
				25	0	17.74	18.0±1	1.0
				25	24	17.57	18.0±1	1.0
				25	49	17.52	18.0±1	1.0
				50	0	17.59	18.0±1	1.0
	21100	2535	QPSK	1	0	18.82	18.0±1	/
				1	49	18.94	18.0±1	/
				1	99	18.73	18.0±1	/
				25	0	17.98	18.0±1	1.0
				25	24	17.85	18.0±1	1.0
				25	49	17.79	18.0±1	1.0
				50	0	17.88	18.0±1	1.0
			16QAM	1	0	18.25	17.5±1	1.0
				1	49	18.36	17.5±1	1.0
				1	99	18.16	17.5±1	1.0
				25	0	16.98	17.5±1	1.0
				25	24	16.89	17.5±1	1.0
				25	49	16.86	17.5±1	1.0
				50	0	16.9	17.5±1	1.0
	21400	2565	QPSK	1	0	18.92	18.5±1	/
				1	49	19.12	18.5±1	/
				1	99	18.81	18.5±1	/
				25	0	18.08	18.5±1	1.0
				25	24	18.01	18.5±1	1.0
				25	49	17.99	18.5±1	1.0
				50	0	18.03	18.5±1	1.0
			16QAM	1	0	18.05	18.0±1	1.0
				1	49	18.22	18.0±1	1.0
				1	99	17.91	18.0±1	1.0
				25	0	17.15	18.0±1	1.0
				25	24	17.08	18.0±1	1.0
				25	49	17.08	18.0±1	1.0
				50	0	17.01	18.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
15MHz	20825	2507.5	QPSK	1	0	19.5	19.0±1	/
				1	49	19.24	19.0±1	/
				1	99	18.99	19.0±1	/
				36	0	18.48	19.0±1	1.0
				36	24	18.31	19.0±1	1.0
				36	49	18.28	19.0±1	1.0
				75	0	18.38	19.0±1	1.0
			16QAM	1	0	18.52	18.0±1	1.0
				1	49	18.25	18.0±1	1.0
				1	99	18.04	18.0±1	1.0
				36	0	17.47	18.0±1	1.0
				36	24	17.34	18.0±1	1.0
				36	49	17.22	18.0±1	1.0
				75	0	17.37	18.0±1	1.0
	21100	2535	QPSK	1	0	18.79	18.0±1	/
				1	49	18.77	18.0±1	/
				1	99	18.55	18.0±1	/
				36	0	17.93	18.0±1	1.0
				36	24	17.79	18.0±1	1.0
				36	49	17.72	18.0±1	1.0
				75	0	17.77	18.0±1	1.0
			16QAM	1	0	18.2	17.5±1	1.0
				1	49	18.22	17.5±1	1.0
				1	99	18.01	17.5±1	1.0
				36	0	16.92	17.5±1	1.0
				36	24	16.81	17.5±1	1.0
				36	49	16.71	17.5±1	1.0
				75	0	16.77	17.5±1	1.0
	21375	2562.5	QPSK	1	0	18.84	18.0±1	/
				1	49	18.93	18.0±1	/
				1	99	18.68	18.0±1	/
				36	0	17.97	18.0±1	1.0
				36	24	17.96	18.0±1	1.0
				36	49	17.9	18.0±1	1.0
				75	0	17.92	18.0±1	1.0
			16QAM	1	0	18.41	17.5±1	1.0
				1	49	18.5	17.5±1	1.0
				1	99	18.22	17.5±1	1.0
				36	0	16.89	17.5±1	1.0
				36	24	16.91	17.5±1	1.0
				36	49	16.81	17.5±1	1.0
				75	0	16.86	17.5±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
20MHz	20850	2510	QPSK	1	0	**19.63**	19.0±1	/
				1	49	19.59	19.0±1	/
				1	99	18.95	19.0±1	/
				50	0	18.42	19.0±1	1.0
				50	24	18.32	19.0±1	1.0
				50	49	18.35	19.0±1	1.0
				100	0	18.41	19.0±1	1.0
			16QAM	1	0	19.01	19.0±1	1.0
				1	49	18.94	19.0±1	1.0
				1	99	18.5	19.0±1	1.0
				50	0	17.51	17.0±1	1.0
				50	24	17.38	17.0±1	1.0
				50	49	17.35	17.0±1	1.0
				100	0	17.49	17.0±1	1.0
	21100	2535	QPSK	1	0	18.74	18.0±1	/
				1	49	18.94	18.0±1	/
				1	99	18.49	18.0±1	/
				50	0	18	18.0±1	1.0
				50	24	17.84	18.0±1	1.0
				50	49	17.7	18.0±1	1.0
				100	0	17.84	18.0±1	1.0
			16QAM	1	0	18.31	17.5±1	1.0
				1	49	18.47	17.5±1	1.0
				1	99	18.04	17.5±1	1.0
				50	0	17.01	17.5±1	1.0
				50	24	16.83	17.5±1	1.0
				50	49	16.69	17.5±1	1.0
				100	0	16.85	17.5±1	1.0
	21350	2560	QPSK	1	0	18.27	18.0±1	/
				1	49	18.94	18.0±1	/
				1	99	18.43	18.0±1	/
				50	0	17.85	18.0±1	1.0
				50	24	17.9	18.0±1	1.0
				50	49	17.82	18.0±1	1.0
				100	0	17.86	18.0±1	1.0
			16QAM	1	0	17.74	17.5±1	1.0
				1	49	18.46	17.5±1	1.0
				1	99	17.91	17.5±1	1.0
				50	0	16.82	17.5±1	1.0
				50	24	16.89	17.5±1	1.0
				50	49	16.78	17.5±1	1.0
				100	0	16.85	17.5±1	1.0

LTE Band 12:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	23017	699.7	QPSK	1	0	24.78	24.0±1	/
				1	2	24.91	24.0±1	/
				1	5	24.74	24.0±1	/
				3	0	24.8	24.0±1	/
				3	1	24.8	24.0±1	/
				3	2	24.74	24.0±1	/
				6	0	23.85	24.0±1	1.0
			16QAM	1	0	23.76	23.0±1	1.0
				1	2	23.89	23.0±1	1.0
				1	5	23.69	23.0±1	1.0
				3	0	23.73	23.0±1	1.0
				3	1	23.77	23.0±1	1.0
				3	2	23.72	23.0±1	1.0
				6	0	22.96	23.0±1	1.0
	23095	707.5	QPSK	1	0	24.54	24.0±1	/
				1	2	24.75	24.0±1	/
				1	5	24.6	24.0±1	/
				3	0	24.63	24.0±1	/
				3	1	24.73	24.0±1	/
				3	2	24.64	24.0±1	/
				6	0	23.66	24.0±1	1.0
			16QAM	1	0	23.92	23.5±1	1.0
				1	2	24.08	23.5±1	1.0
				1	5	23.93	23.5±1	1.0
				3	0	23.78	23.5±1	1.0
				3	1	23.79	23.5±1	1.0
				3	2	23.81	23.5±1	1.0
				6	0	22.56	23.5±1	1.0
	23173	715.3	QPSK	1	0	24.37	24.0±1	/
				1	2	24.52	24.0±1	/
				1	5	24.33	24.0±1	/
				3	0	24.41	24.0±1	/
				3	1	24.48	24.0±1	/
				3	2	24.44	24.0±1	/
				6	0	23.42	24.0±1	1.0
			16QAM	1	0	23.32	23.0±1	1.0
				1	2	23.55	23.0±1	1.0
				1	5	23.36	23.0±1	1.0
				3	0	23.54	23.0±1	1.0
				3	1	23.57	23.0±1	1.0
				3	2	23.56	23.0±1	1.0
				6	0	22.56	23.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	23025	700.5	QPSK	1	0	24.89	24.0±1	/
				1	8	24.83	24.0±1	/
				1	14	24.83	24.0±1	/
				8	0	23.9	24.0±1	1.0
				8	4	23.96	24.0±1	1.0
				8	9	23.92	24.0±1	1.0
				15	0	23.83	24.0±1	1.0
			16QAM	1	0	23.72	23.0±1	1.0
				1	8	23.64	23.0±1	1.0
				1	14	23.65	23.0±1	1.0
				8	0	22.96	23.0±1	1.0
				8	4	22.99	23.0±1	1.0
				8	9	22.98	23.0±1	1.0
				15	0	22.85	23.0±1	1.0
	23095	707.5	QPSK	1	0	24.64	24.0±1	/
				1	8	24.7	24.0±1	/
				1	14	24.74	24.0±1	/
				8	0	23.7	24.0±1	1.0
				8	4	23.76	24.0±1	1.0
				8	9	23.73	24.0±1	1.0
				15	0	23.69	24.0±1	1.0
			16QAM	1	0	23.99	23.5±1	1.0
				1	8	24.03	23.5±1	1.0
				1	14	24.05	23.5±1	1.0
				8	0	22.79	23.5±1	1.0
				8	4	22.83	23.5±1	1.0
				8	9	22.79	23.5±1	1.0
				15	0	22.76	23.5±1	1.0
	23165	714.5	QPSK	1	0	24.55	24.0±1	/
				1	8	24.48	24.0±1	/
				1	14	24.49	24.0±1	/
				8	0	23.52	24.0±1	1.0
				8	4	23.53	24.0±1	1.0
				8	9	23.45	24.0±1	1.0
				15	0	23.5	24.0±1	1.0
			16QAM	1	0	23.49	23.0±1	1.0
				1	8	23.46	23.0±1	1.0
				1	14	23.42	23.0±1	1.0
				8	0	22.55	23.0±1	1.0
				8	4	22.57	23.0±1	1.0
				8	9	22.51	23.0±1	1.0
				15	0	22.47	23.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	23035	701.5	QPSK	1	0	24.68	24.0±1	/
				1	49	24.78	24.0±1	/
				1	99	24.55	24.0±1	/
				12	0	23.55	24.0±1	1.0
				12	24	23.75	24.0±1	1.0
				12	49	23.67	24.0±1	1.0
				25	0	23.6	24.0±1	1.0
			16QAM	1	0	23.8	23.0±1	1.0
				1	49	23.87	23.0±1	1.0
				1	99	23.7	23.0±1	1.0
				12	0	22.62	23.0±1	1.0
				12	24	22.82	23.0±1	1.0
				12	49	22.72	23.0±1	1.0
				25	0	22.67	23.0±1	1.0
	23095	707.5	QPSK	1	0	24.54	24.0±1	/
				1	49	24.65	24.0±1	/
				1	99	24.64	24.0±1	/
				12	0	23.68	24.0±1	1.0
				12	24	23.65	24.0±1	1.0
				12	49	23.67	24.0±1	1.0
				25	0	23.68	24.0±1	1.0
			16QAM	1	0	24.04	23.5±1	1.0
				1	49	24.14	23.5±1	1.0
				1	99	24.13	23.5±1	1.0
				12	0	22.86	23.5±1	1.0
				12	24	22.8	23.5±1	1.0
				12	49	22.81	23.5±1	1.0
				25	0	22.77	23.5±1	1.0
	23155	713.5	QPSK	1	0	24.59	24.0±1	/
				1	49	24.44	24.0±1	/
				1	99	24.29	24.0±1	/
				12	0	23.36	24.0±1	1.0
				12	24	23.47	24.0±1	1.0
				12	49	23.25	24.0±1	1.0
				25	0	23.35	24.0±1	1.0
			16QAM	1	0	23.69	23.0±1	1.0
				1	49	23.53	23.0±1	1.0
				1	99	23.39	23.0±1	1.0
				12	0	22.41	23.0±1	1.0
				12	24	22.53	23.0±1	1.0
				12	49	22.34	23.0±1	1.0
				25	0	22.32	23.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	23060	704	QPSK	1	0	24.79	24.0±1	/
				1	49	24.76	24.0±1	/
				1	99	24.56	24.0±1	/
				25	0	23.55	24.0±1	1.0
				25	24	23.66	24.0±1	1.0
				25	49	23.46	24.0±1	1.0
				50	0	23.52	24.0±1	1.0
			16QAM	1	0	23.59	23.0±1	1.0
				1	49	23.74	23.0±1	1.0
				1	99	23.5	23.0±1	1.0
				25	0	22.61	23.0±1	1.0
				25	24	22.72	23.0±1	1.0
				25	49	22.45	23.0±1	1.0
				50	0	22.53	23.0±1	1.0
	23095	707.5	QPSK	1	0	24.61	24.0±1	/
				1	49	24.76	24.0±1	/
				1	99	24.54	24.0±1	/
				25	0	23.96	24.0±1	1.0
				25	24	23.71	24.0±1	1.0
				25	49	23.84	24.0±1	1.0
				50	0	23.87	24.0±1	1.0
			16QAM	1	0	23.96	23.5±1	1.0
				1	49	24.15	23.5±1	1.0
				1	99	23.88	23.5±1	1.0
				25	0	22.96	23.5±1	1.0
				25	24	22.74	23.5±1	1.0
				25	49	22.88	23.5±1	1.0
				50	0	22.9	23.5±1	1.0
	23130	711	QPSK	1	0	24.53	24.0±1	/
				1	49	**24.96**	24.0±1	/
				1	99	24.37	24.0±1	/
				25	0	23.77	24.0±1	1.0
				25	24	23.74	24.0±1	1.0
				25	49	23.58	24.0±1	1.0
				50	0	23.66	24.0±1	1.0
			16QAM	1	0	23.57	23.0±1	1.0
				1	49	23.89	23.0±1	1.0
				1	99	23.35	23.0±1	1.0
				25	0	22.83	23.0±1	1.0
				25	24	22.83	23.0±1	1.0
				25	49	22.72	23.0±1	1.0
				50	0	22.76	23.0±1	1.0

LTE Band 13:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	23205	779.5	QPSK	1	0	23.17	23.0±1	/
				1	49	23.44	23.0±1	/
				1	99	23.35	23.0±1	/
				12	0	22.31	23.0±1	1.0
				12	24	22.47	23.0±1	1.0
				12	49	22.44	23.0±1	1.0
				25	0	22.37	23.0±1	1.0
			16QAM	1	0	22.34	22.0±1	1.0
				1	49	22.51	22.0±1	1.0
				1	99	22.48	22.0±1	1.0
				12	0	21.32	22.0±1	1.0
				12	24	21.5	22.0±1	1.0
				12	49	21.47	22.0±1	1.0
				25	0	21.35	22.0±1	1.0
	23230	782.0	QPSK	1	0	23.31	23.0±1	/
				1	49	23.53	23.0±1	/
				1	99	23.46	23.0±1	/
				12	0	22.4	23.0±1	1.0
				12	24	22.58	23.0±1	1.0
				12	49	22.5	23.0±1	1.0
				25	0	22.47	23.0±1	1.0
			16QAM	1	0	22.46	22.0±1	1.0
				1	49	22.7	22.0±1	1.0
				1	99	22.65	22.0±1	1.0
				12	0	21.49	22.0±1	1.0
				12	24	21.64	22.0±1	1.0
				12	49	21.6	22.0±1	1.0
				25	0	21.5	22.0±1	1.0
	23255	784.5	QPSK	1	0	23.48	23.0±1	/
				1	49	23.51	23.0±1	/
				1	99	23.31	23.0±1	/
				12	0	22.64	23.0±1	1.0
				12	24	22.57	23.0±1	1.0
				12	49	22.41	23.0±1	1.0
				25	0	22.5	23.0±1	1.0
			16QAM	1	0	22.93	22.0±1	1.0
				1	49	23.03	22.0±1	1.0
				1	99	22.82	22.0±1	1.0
				12	0	21.78	22.0±1	1.0
				12	24	21.69	22.0±1	1.0
				12	49	21.57	22.0±1	1.0
				25	0	21.62	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	23230	782.0	QPSK	1	0	23.25	23.0±1	/
				1	49	**23.63**	23.0±1	/
				1	99	23.33	23.0±1	/
				25	0	22.35	23.0±1	1.0
				25	24	22.57	23.0±1	1.0
				25	49	22.42	23.0±1	1.0
				50	0	22.41	23.0±1	1.0
			16QAM	1	0	22.17	22.0±1	1.0
				1	49	22.57	22.0±1	1.0
				1	99	22.3	22.0±1	1.0
				25	0	21.42	22.0±1	1.0
				25	24	21.62	22.0±1	1.0
				25	49	21.49	22.0±1	1.0
				50	0	21.41	22.0±1	1.0

LTE Band 66:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	131979	1710.7	QPSK	1	0	20.13	20.0±1	/
				1	2	20.26	20.0±1	/
				1	5	20.04	20.0±1	/
				3	0	20.23	20.0±1	/
				3	1	20.23	20.0±1	/
				3	2	20.21	20.0±1	/
				6	0	19.11	20.0±1	1.0
			16QAM	1	0	19.27	19.0±1	1.0
				1	2	19.44	19.0±1	1.0
				1	5	19.24	19.0±1	1.0
				3	0	19.31	19.0±1	1.0
				3	1	19.3	19.0±1	1.0
				3	2	19.25	19.0±1	1.0
				6	0	18.31	19.0±1	1.0
	132321	1744.9	QPSK	1	0	19.04	19.0±1	/
				1	2	19.21	19.0±1	/
				1	5	19.05	19.0±1	/
				3	0	19.14	19.0±1	/
				3	1	19.18	19.0±1	/
				3	2	19.13	19.0±1	/
				6	0	18.11	19.0±1	1.0
			16QAM	1	0	18.49	18.0±1	1.0
				1	2	18.6	18.0±1	1.0
				1	5	18.48	18.0±1	1.0
				3	0	18.35	18.0±1	1.0
				3	1	18.36	18.0±1	1.0
				3	2	18.39	18.0±1	1.0
				6	0	17.1	18.0±1	1.0
	132664	1779.2	QPSK	1	0	19.34	19.0±1	/
				1	2	19.51	19.0±1	/
				1	5	19.31	19.0±1	/
				3	0	19.43	19.0±1	/
				3	1	19.48	19.0±1	/
				3	2	19.48	19.0±1	/
				6	0	18.35	19.0±1	1.0
			16QAM	1	0	18.37	18.0±1	1.0
				1	2	18.54	18.0±1	1.0
				1	5	18.39	18.0±1	1.0
				3	0	18.56	18.0±1	1.0
				3	1	18.58	18.0±1	1.0
				3	2	18.59	18.0±1	1.0
				6	0	17.58	18.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	131987	1711.5	QPSK	1	0	20.26	20.0±1	/
				1	8	20.07	20.0±1	/
				1	14	20	20.0±1	/
				6	0	19.21	20.0±1	1.0
				6	4	19.18	20.0±1	1.0
				6	9	19.09	20.0±1	1.0
				15	0	19.17	20.0±1	1.0
			16QAM	1	0	19.24	19.0±1	1.0
				1	8	19.07	19.0±1	1.0
				1	14	19.01	19.0±1	1.0
				8	0	18.35	19.0±1	1.0
				8	4	18.33	19.0±1	1.0
				8	9	18.24	19.0±1	1.0
				15	0	18.23	19.0±1	1.0
	132321	1744.9	QPSK	1	0	19.17	19.0±1	/
				1	8	19.13	19.0±1	/
				1	14	19.19	19.0±1	/
				6	0	18.22	19.0±1	1.0
				6	4	18.24	19.0±1	1.0
				6	9	18.18	19.0±1	1.0
				15	0	18.18	19.0±1	1.0
			16QAM	1	0	18.57	18.0±1	1.0
				1	8	18.64	18.0±1	1.0
				1	14	18.6	18.0±1	1.0
				6	0	17.33	18.0±1	1.0
				6	4	17.37	18.0±1	1.0
				6	9	17.29	18.0±1	1.0
				15	0	17.24	18.0±1	1.0
	132656	1778.4	QPSK	1	0	19.49	19.0±1	/
				1	8	19.48	19.0±1	/
				1	14	19.47	19.0±1	/
				6	0	18.47	19.0±1	1.0
				6	4	18.49	19.0±1	1.0
				6	9	18.48	19.0±1	1.0
				15	0	18.47	19.0±1	1.0
			16QAM	1	0	18.51	18.0±1	1.0
				1	8	18.52	18.0±1	1.0
				1	14	18.45	18.0±1	1.0
				8	0	17.54	18.0±1	1.0
				8	4	17.56	18.0±1	1.0
				8	9	17.5	18.0±1	1.0
				15	0	17.46	18.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	131997	1712.5	QPSK	1	0	20.09	19.5±1	/
				1	49	20.05	19.5±1	/
				1	99	19.7	19.5±1	/
				12	0	19.04	19.5±1	1.0
				12	24	19.02	19.5±1	1.0
				12	49	18.84	19.5±1	1.0
				25	0	18.95	19.5±1	1.0
			16QAM	1	0	19.32	18.5±1	1.0
				1	49	19.21	18.5±1	1.0
				1	99	18.87	18.5±1	1.0
				12	0	18.11	18.5±1	1.0
				12	24	18.1	18.5±1	1.0
				12	49	17.93	18.5±1	1.0
				25	0	18.03	18.5±1	1.0
	132321	1744.9	QPSK	1	0	19.01	19.0±1	/
				1	49	19.13	19.0±1	/
				1	99	19.03	19.0±1	/
				12	0	18.09	19.0±1	1.0
				12	24	18.16	19.0±1	1.0
				12	49	18.08	19.0±1	1.0
				25	0	18.12	19.0±1	1.0
			16QAM	1	0	18.58	18.0±1	1.0
				1	49	18.64	18.0±1	1.0
				1	99	18.55	18.0±1	1.0
				12	0	17.3	18.0±1	1.0
				12	24	17.33	18.0±1	1.0
				12	49	17.28	18.0±1	1.0
				25	0	17.24	18.0±1	1.0
	132646	1777.4	QPSK	1	0	19.29	19.0±1	/
				1	49	19.4	19.0±1	/
				1	99	19.29	19.0±1	/
				12	0	18.37	19.0±1	1.0
				12	24	18.4	19.0±1	1.0
				12	49	18.36	19.0±1	1.0
				25	0	18.39	19.0±1	1.0
			16QAM	1	0	18.45	18.0±1	1.0
				1	49	18.54	18.0±1	1.0
				1	99	18.45	18.0±1	1.0
				12	0	17.48	18.0±1	1.0
				12	24	17.51	18.0±1	1.0
				12	49	17.44	18.0±1	1.0
				25	0	17.37	18.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	132022	1715	QPSK	1	0	20.05	19.5±1	/
				1	49	19.87	19.5±1	/
				1	99	19.48	19.5±1	/
				25	0	18.99	19.5±1	1.0
				25	24	18.83	19.5±1	1.0
				25	49	18.79	19.5±1	1.0
				50	0	18.87	19.5±1	1.0
			16QAM	1	0	19.07	18.5±1	1.0
				1	49	18.82	18.5±1	1.0
				1	99	18.5	18.5±1	1.0
				25	0	18	18.5±1	1.0
				25	24	17.89	18.5±1	1.0
				25	49	17.85	18.5±1	1.0
				50	0	17.9	18.5±1	1.0
	132321	1744.9	QPSK	1	0	19.09	19.0±1	/
				1	49	19.27	19.0±1	/
				1	99	19.11	19.0±1	/
				25	0	18.28	19.0±1	1.0
				25	24	18.18	19.0±1	1.0
				25	49	18.21	19.0±1	1.0
				50	0	18.24	19.0±1	1.0
			16QAM	1	0	18.51	18.0±1	1.0
				1	49	18.71	18.0±1	1.0
				1	99	18.53	18.0±1	1.0
				25	0	17.36	18.0±1	1.0
				25	24	17.29	18.0±1	1.0
				25	49	17.28	18.0±1	1.0
				50	0	17.33	18.0±1	1.0
	132621	1774.9	QPSK	1	0	19.41	19.0±1	/
				1	49	19.6	19.0±1	/
				1	99	19.37	19.0±1	/
				25	0	18.5	19.0±1	1.0
				25	24	18.52	19.0±1	1.0
				25	49	18.47	19.0±1	1.0
				50	0	18.51	19.0±1	1.0
			16QAM	1	0	18.42	18.0±1	1.0
				1	49	18.67	18.0±1	1.0
				1	99	18.4	18.0±1	1.0
				25	0	17.61	18.0±1	1.0
				25	24	17.58	18.0±1	1.0
				25	49	17.59	18.0±1	1.0
				50	0	17.58	18.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
15MHz	132097	1722.5	QPSK	1	0	19.92	19.0±1	/
				1	49	19.61	19.0±1	/
				1	99	19.34	19.0±1	/
				36	0	18.84	19.0±1	1.0
				36	24	18.66	19.0±1	1.0
				36	49	18.6	19.0±1	1.0
				75	0	18.7	19.0±1	1.0
			16QAM	1	0	18.95	18.0±1	1.0
				1	49	18.6	18.0±1	1.0
				1	99	18.35	18.0±1	1.0
				36	0	17.81	18.0±1	1.0
				36	24	17.68	18.0±1	1.0
				36	49	17.65	18.0±1	1.0
				75	0	17.74	18.0±1	1.0
	132321	1744.9	QPSK	1	0	19.04	19.0±1	/
				1	49	19.1	19.0±1	/
				1	99	19.02	19.0±1	/
				36	0	18.23	19.0±1	1.0
				36	24	18.17	19.0±1	1.0
				36	49	18.11	19.0±1	1.0
				75	0	18.17	19.0±1	1.0
			16QAM	1	0	18.47	18.0±1	1.0
				1	49	18.55	18.0±1	1.0
				1	99	18.44	18.0±1	1.0
				36	0	17.3	18.0±1	1.0
				36	24	17.21	18.0±1	1.0
				36	49	17.22	18.0±1	1.0
				75	0	17.24	18.0±1	1.0
	132546	1767.4	QPSK	1	0	19.32	19.0±1	/
				1	49	19.45	19.0±1	/
				1	99	19.27	19.0±1	/
				36	0	18.46	19.0±1	1.0
				36	24	18.48	19.0±1	1.0
				36	49	18.41	19.0±1	1.0
				75	0	18.45	19.0±1	1.0
			16QAM	1	0	18.79	18.0±1	1.0
				1	49	18.92	18.0±1	1.0
				1	99	18.74	18.0±1	1.0
				36	0	17.47	18.0±1	1.0
				36	24	17.45	18.0±1	1.0
				36	49	17.41	18.0±1	1.0
				75	0	17.47	18.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
20MHz	132072	1720	QPSK	1	0	**20.28**	19.5±1	/
				1	49	20.17	19.5±1	/
				1	99	19.24	19.5±1	/
				50	0	18.74	19.5±1	1.0
				50	24	18.6	19.5±1	1.0
				50	49	18.64	19.5±1	1.0
				100	0	18.7	19.5±1	1.0
			16QAM	1	0	19.35	18.5±1	1.0
				1	49	19.18	18.5±1	1.0
				1	99	18.74	18.5±1	1.0
				50	0	17.8	18.5±1	1.0
				50	24	17.68	18.5±1	1.0
				50	49	17.71	18.5±1	1.0
				100	0	17.77	18.5±1	1.0
	132321	1744.9	QPSK	1	0	19.07	19.0±1	/
				1	49	19.26	19.0±1	/
				1	99	18.95	19.0±1	/
				50	0	18.39	19.0±1	1.0
				50	24	18.2	19.0±1	1.0
				50	49	18.17	19.0±1	1.0
				100	0	18.27	19.0±1	1.0
			16QAM	1	0	18.56	18.0±1	1.0
				1	49	18.84	18.0±1	1.0
				1	99	18.51	18.0±1	1.0
				50	0	17.41	18.0±1	1.0
				50	24	17.25	18.0±1	1.0
				50	49	17.23	18.0±1	1.0
				100	0	17.33	18.0±1	1.0
	132471	1759.9	QPSK	1	0	18.83	19.0±1	/
				1	49	19.58	19.0±1	/
				1	99	19.1	19.0±1	/
				50	0	18.45	19.0±1	1.0
				50	24	18.48	19.0±1	1.0
				50	49	18.5	19.0±1	1.0
				100	0	18.49	19.0±1	1.0
			16QAM	1	0	18.32	18.0±1	1.0
				1	49	18.99	18.0±1	1.0
				1	99	18.55	18.0±1	1.0
				50	0	17.46	18.0±1	1.0
				50	24	17.51	18.0±1	1.0
				50	49	17.51	18.0±1	1.0
				100	0	17.53	18.0±1	1.0

LTE Band 71:

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	40265	665.5	QPSK	1	0	25.6	25.0±1	/
				1	49	25.23	25.0±1	/
				1	99	24.99	25.0±1	/
				12	0	24.44	25.0±1	1.0
				12	24	24.27	25.0±1	1.0
				12	49	24.11	25.0±1	1.0
				25	0	24.25	25.0±1	1.0
			16QAM	1	0	24.5	24.0±1	1.0
				1	49	24.28	24.0±1	1.0
				1	99	24.07	24.0±1	1.0
				12	0	23.45	24.0±1	1.0
				12	24	23.26	24.0±1	1.0
				12	49	23.15	24.0±1	1.0
				25	0	23.29	24.0±1	1.0
	40740	680.5	QPSK	1	0	24.92	24.0±1	/
				1	49	24.93	24.0±1	/
				1	99	24.78	24.0±1	/
				12	0	23.97	24.0±1	1.0
				12	24	23.9	24.0±1	1.0
				12	49	23.82	24.0±1	1.0
				25	0	23.86	24.0±1	1.0
			16QAM	1	0	24.24	23.5±1	1.0
				1	49	24.34	23.5±1	1.0
				1	99	24.24	23.5±1	1.0
				12	0	23.08	23.5±1	1.0
				12	24	23.02	23.5±1	1.0
				12	49	22.98	23.5±1	1.0
				25	0	22.97	23.5±1	1.0
	41215	695.5	QPSK	1	0	24.88	24.0±1	/
				1	49	24.92	24.0±1	/
				1	99	24.82	24.0±1	/
				12	0	24	24.0±1	1.0
				12	24	23.92	24.0±1	1.0
				12	49	23.84	24.0±1	1.0
				25	0	23.87	24.0±1	1.0
			16QAM	1	0	23.73	23.0±1	1.0
				1	49	23.88	23.0±1	1.0
				1	99	23.82	23.0±1	1.0
				12	0	22.96	23.0±1	1.0
				12	24	22.93	23.0±1	1.0
				12	49	22.84	23.0±1	1.0
				25	0	22.8	23.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	40290	668	QPSK	1	0	25.8	25.0±1	/
				1	49	25.36	25.0±1	/
				1	99	25.43	25.0±1	/
				25	0	24.37	25.0±1	1.0
				25	24	24.19	25.0±1	1.0
				25	49	24.38	25.0±1	1.0
				50	0	24.39	25.0±1	1.0
			16QAM	1	0	24.24	24.0±1	1.0
				1	49	23.96	24.0±1	1.0
				1	99	23.81	24.0±1	1.0
				25	0	23.29	24.0±1	1.0
				25	24	23.12	24.0±1	1.0
				25	49	23.38	24.0±1	1.0
				50	0	23.36	24.0±1	1.0
	40740	680.5	QPSK	1	0	25.13	24.5±1	/
				1	49	25.08	24.5±1	/
				1	99	24.85	24.5±1	/
				25	0	24.18	24.5±1	1.0
				25	24	23.95	24.5±1	1.0
				25	49	23.95	24.5±1	1.0
				50	0	24.09	24.5±1	1.0
			16QAM	1	0	24.23	23.5±1	1.0
				1	49	24.33	23.5±1	1.0
				1	99	24	23.5±1	1.0
				25	0	23.2	23.5±1	1.0
				25	24	22.98	23.5±1	1.0
				25	49	22.97	23.5±1	1.0
				50	0	23.06	23.5±1	1.0
	41190	693	QPSK	1	0	24.75	24.5±1	/
				1	49	25.3	24.5±1	/
				1	99	24.92	24.5±1	/
				25	0	23.85	24.5±1	1.0
				25	24	23.89	24.5±1	1.0
				25	49	23.65	24.5±1	1.0
				50	0	23.78	24.5±1	1.0
			16QAM	1	0	23.36	23.0±1	1.0
				1	49	23.84	23.0±1	1.0
				1	99	23.73	23.0±1	1.0
				25	0	22.81	23.0±1	1.0
				25	24	22.88	23.0±1	1.0
				25	49	22.68	23.0±1	1.0
				50	0	22.73	23.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
15MHz	40315	670.5	QPSK	1	0	25.48	25.0±1	/
				1	49	25.35	25.0±1	/
				1	99	24.93	25.0±1	/
				36	0	24.16	25.0±1	1.0
				36	24	24.27	25.0±1	1.0
				36	49	24.29	25.0±1	1.0
				75	0	24.24	25.0±1	1.0
			16QAM	1	0	24.09	24.0±1	1.0
				1	49	23.86	24.0±1	1.0
				1	99	23.62	24.0±1	1.0
				36	0	23.05	24.0±1	1.0
				36	24	23.11	24.0±1	1.0
				36	49	23.07	24.0±1	1.0
				75	0	23.1	24.0±1	1.0
	40740	680.5	QPSK	1	0	25.15	24.5±1	/
				1	49	24.87	24.5±1	/
				1	99	24.47	24.5±1	/
				36	0	24.31	24.5±1	1.0
				36	24	23.97	24.5±1	1.0
				36	49	23.96	24.5±1	1.0
				75	0	24.15	24.5±1	1.0
			16QAM	1	0	24.05	23.5±1	1.0
				1	49	24.14	23.5±1	1.0
				1	99	23.59	23.5±1	1.0
				36	0	23.23	23.5±1	1.0
				36	24	22.95	23.5±1	1.0
				36	49	22.91	23.5±1	1.0
				75	0	23.07	23.5±1	1.0
	41165	690.5	QPSK	1	0	24.76	24.5±1	/
				1	49	25.18	24.5±1	/
				1	99	24.74	24.5±1	/
				36	0	23.62	24.5±1	1.0
				36	24	24.01	24.5±1	1.0
				36	49	23.82	24.5±1	1.0
				75	0	23.67	24.5±1	1.0
			16QAM	1	0	23.94	23.0±1	1.0
				1	49	23.9	23.0±1	1.0
				1	99	23.91	23.0±1	1.0
				36	0	22.46	23.0±1	1.0
				36	24	22.73	23.0±1	1.0
				36	49	22.61	23.0±1	1.0
				75	0	22.53	23.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
20MHz	40340	673	QPSK	1	0	**25.82**	25.0±1	/
				1	49	25.71	25.0±1	/
				1	99	24.63	25.0±1	/
				50	0	23.82	23.0±1	1.0
				50	24	23.98	23.0±1	1.0
				50	49	23.63	23.0±1	1.0
				100	0	23.76	23.0±1	1.0
			16QAM	1	0	24.46	23.5±1	1.0
				1	49	24.49	23.5±1	1.0
				1	99	24	23.5±1	1.0
				50	0	22.76	23.5±1	1.0
				50	24	22.91	23.5±1	1.0
				50	49	22.59	23.5±1	1.0
				100	0	22.75	23.5±1	1.0
	40740	683	QPSK	1	0	25	24.5±1	/
				1	49	25.01	24.5±1	/
				1	99	24.77	24.5±1	/
				50	0	24.27	24.5±1	1.0
				50	24	23.83	24.5±1	1.0
				50	49	23.9	24.5±1	1.0
				100	0	24.07	24.5±1	1.0
			16QAM	1	0	23.93	23.5±1	1.0
				1	49	24.33	23.5±1	1.0
				1	99	23.7	23.5±1	1.0
				50	0	23.25	23.5±1	1.0
				50	24	22.8	23.5±1	1.0
				50	49	22.89	23.5±1	1.0
				100	0	23.05	23.5±1	1.0
	41140	688	QPSK	1	0	24.62	24.0±1	/
				1	49	24.66	24.0±1	/
				1	99	24.56	24.0±1	/
				50	0	23.62	24.0±1	1.0
				50	24	23.59	24.0±1	1.0
				50	49	23.48	24.0±1	1.0
				100	0	23.55	24.0±1	1.0
			16QAM	1	0	23.89	23.0±1	1.0
				1	49	23.7	23.0±1	1.0
				1	99	23.82	23.0±1	1.0
				50	0	22.58	23.0±1	1.0
				50	24	22.59	23.0±1	1.0
				50	49	22.4	23.0±1	1.0
				100	0	22.54	23.0±1	1.0

Bluetooth Measurement Result

Mode	Frequency (MHz)	Average Output Power(dBm)	Tune up limited(dBm)
GFSK	2402	8.17	8.6±1
	2441	8.81	8.6±1
	2480	**9.53**	8.6±1
π/4 DQPSK	2402	8.26	8.6±1
	2441	8.49	8.6±1
	2480	9.19	8.6±1
8DPSK	2402	8.26	8.6±1
	2441	8.47	8.6±1
	2480	9.26	8.6±1

BLE Measurement Result

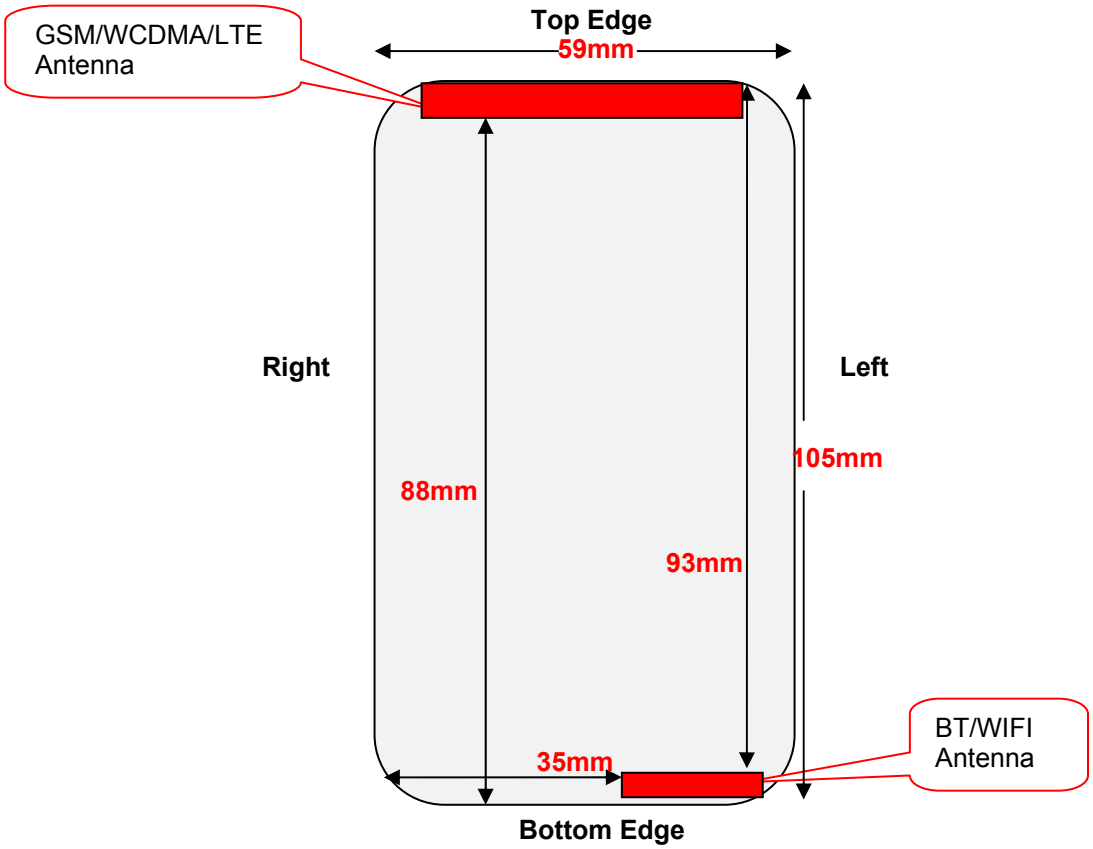
Operation mode	Channel number	Frequency (MHz)	Average Output Power(dBm)	Tune up limited(dBm)
BLE (1M)	0	2402	-2.96	-2.0±1
	19	2440	-2.55	-2.0±1
	39	2480	-2.49	-2.0±1
BLE (2M)	0	2402	-1.22	-1.0±1
	19	2440	-0.73	-1.0±1
	39	2480	**-0.72**	-1.0±1

2.4G Wi-Fi Measurement Result

Channel number	Frequency (MHz)	Average Output Power(dBm)	Tune up limited(dBm)
TX 11b	2412	**17.49**	17.0±1
	2437	17.40	17.0±1
	2462	17.35	17.0±1
TX 11g	2412	16.98	16.0±1
	2437	16.75	16.0±1
	2462	16.61	16.0±1
TX 11n HT20	2412	16.54	16.0±1
	2437	16.61	16.0±1
	2462	16.65	16.0±1
TX 11n HT40	2422	17.48	17.0±1
	2437	16.88	17.0±1
	2452	17.22	17.0±1

12 Exposure Conditions Consideration

12.1 EUT antenna location



< EUT Back Side View >

12.2 Test position consideration

Distance of EUT antenna-to-edge/surface(mm)						
Antennas	Back Side	Front Side	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	<25	<25	<25	<25	<25	88
BT/WIFI	<25	<25	<25	35	93	<25
Test distance:10mm						
Antennas	Back Side	Front Side	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	YES	YES	YES	YES	YES	NO
BT/WIFI	YES	YES	YES	NO	NO	YES

Note:
1. Head/Body SAR/Hotspot mode assessments are required.
2. Referring to KDB 941225 D06v02r01, when the overall device length and width are ≥ 9cm * 5cm, the test distance is 10mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
3. Per KDB 447498 D01v06, for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user, which is 0 mm for head SAR, 10 mm for body SAR.

12.3 RF Exposure

Standard Requirement:
According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,[16] where

- $f_{(GHz)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation[17]
- The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

Exclusion Thresholds = $P\sqrt{F}/D$
P= Maximum turn-up power in mW
F= Channel frequency in GHz
D= Minimum test separation distance in mm

Test Distance (5mm)

Mode	MAX Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Exclusion Thresholds	Limit
Bluetooth	9.53	8.6±1	9.6	9.12	2.872	3
BLE	-0.72	-1.0±1	0.0	1.00	0.315	3
2.4G Wi-Fi	17.49	17.0±1	18.0	63.10	19.598	3

Test Distance (10mm)

Mode	MAX Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Exclusion Thresholds	Limit
Bluetooth	9.53	8.6±1	9.6	9.12	1.436	3
BLE	-0.72	-1.0±1	0.0	1.00	0.157	3
2.4G Wi-Fi	17.49	17.0±1	18.0	63.10	9.799	3

13 SAR Test Results

13.1 Test Condition

1. SAR Measurement
   The distance between the EUT and the antenna of the emulator is more than 50 cm and the output power radiated from the emulator antenna is at least 30 dB less than the output power of EUT.

2	Environmental Conditions	Temperature	24.1°C
		Relative Humidity	56%
		Atmospheric Pressure	1015mbar

13.2 Generally Test Procedures

1. Establish communication link between EUT and base station emulation by air link.
2. Place the EUT in the selected test position. (Cheek, tilt or flat)
3. Perform SAR testing at middle or highest output power channel under the selected test mode. If the measured 1-g SAR is ≤ 0.8 W/kg, then testing for the other channel will not be performed.
4. When SAR is<0.8W/kg, no repeated SAR measurement is required

For WCDMA test:

1. KDB941225 D01-Body SAR is not required for HSDPA when the average output of each RF channel with HSDPA active is less than 0.25dB higher than measured without HSDPA using 12.2kbps RMC or the maximum SAR for 12.2kbps RMC<75% of the SAR limit.
2. KDB941225 D01-Body SAR is not required for handset with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than 0.25dB higher than that measure without HSUPA/HSDPA using 12.2kbps RMC AND THE maximum SAR for 12.2kbps RMC is<75% of the SAR limit

For LTE test:

1. According to FCC KDB 941225 D05v02r05:
   a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
      i. The required channel and offset combination with the highest maximum output power is required for SAR.
      ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
      iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
   b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
   c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
   d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.
   e. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

13.3 SAR Summary Test Result

Table 4: SAR Values of GSM 850MHz Band

Test Positions		Channel		Test Mode	Power(dBm)		SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
		CH.	MHz		Maximum Turn-up Power(dBm)	Measured output power (dBm)	Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
Right Head	Cheek	190	836.6	Voice call	34	33.49	1.125	0.097	0.109	--
	Tilt	190	836.6	Voice call	34	33.49	1.125	0.082	0.092	--
Left Head	Cheek	190	836.6	Voice call	34	33.49	1.125	0.120	**0.135**	**1**
	Tilt	190	836.6	Voice call	34	33.49	1.125	0.109	0.123	--
Right Head	Cheek	190	836.6	GPRS 4 slots	30	29.73	1.064	0.085	0.090	--
	Tilt	190	836.6	GPRS 4 slots	30	29.73	1.064	0.072	0.077	--
Left Head	Cheek	190	836.6	GPRS 4 slots	30	29.73	1.064	0.107	0.114	--
	Tilt	190	836.6	GPRS 4 slots	30	29.73	1.064	0.101	0.107	--
Body-worn (10mm Separation)	Front Side	190	836.6	GPRS 4 slots	30	29.73	1.064	0.076	0.081	--
	Back Side	190	836.6	GPRS 4 slots	30	29.73	1.064	0.081	0.086	--
Hotspot (10mm Separation)	Front Side	190	836.6	GPRS 4 slots	30	29.73	1.064	0.083	0.088	--
	Back Side	190	836.6	GPRS 4 slots	30	29.73	1.064	0.088	**0.094**	**2**
	Right Edge	190	836.6	GPRS 4 slots	30	29.73	1.064	0.043	0.046	--
	Left Edge	190	836.6	GPRS 4 slots	30	29.73	1.064	0.057	0.061	--
	Top Edge	190	836.6	GPRS 4 slots	30	29.73	1.064	0.017	0.018	--

Table 5: SAR Values of GSM 1900MHz Band

Test Positions		Channel		Test Mode	Power(dBm)		SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
		CH.	MHz		Maximum Turn-up Power(dBm)	Measured output power (dBm)	Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
Right Head	Cheek	512	1850.2	Voice call	29	28.63	1.089	0.250	0.272	--
	Tilt	512	1850.2	Voice call	29	28.63	1.089	0.236	0.257	--
Left Head	Cheek	512	1850.2	Voice call	29	28.63	1.089	0.290	**0.316**	**3**
	Tilt	512	1850.2	Voice call	29	28.63	1.089	0.281	0.306	--
Right Head	Cheek	661	1880	GPRS 4 slots	26	25.91	1.021	0.228	0.233	--
	Tilt	661	1880	GPRS 4 slots	26	25.91	1.021	0.222	0.227	--
Left Head	Cheek	661	1880	GPRS 4 slots	26	25.91	1.021	0.270	0.276	--
	Tilt	661	1880	GPRS 4 slots	26	25.91	1.021	0.259	0.264	--
Body-worn (10mm Separation)	Front Side	661	1880	GPRS 4 slots	26	25.91	1.021	0.427	0.436	--
	Back Side	661	1880	GPRS 4 slots	26	25.91	1.021	0.783	0.799	--
Hotspot (10mm Separation)	Front Side	661	1880	GPRS 4 slots	26	25.91	1.021	0.432	0.441	--
	Back Side	661	1880	GPRS 4 slots	26	25.91	1.021	0.795	**0.812**	**4**
	Back Side	512	1850.2	GPRS 4 slots	26	25.71	1.069	0.741	0.792	--
	Back Side	810	1909.8	GPRS 4 slots	26	25.19	1.205	0.673	0.811	--
	Right Edge	661	1880	GPRS 4 slots	26	25.91	1.021	0.045	0.046	--
	Left Edge	661	1880	GPRS 4 slots	26	25.91	1.021	0.247	0.252	--
	Top Edge	661	1880	GPRS 4 slots	26	25.91	1.021	0.223	0.228	--

Table 6: SAR Values of WCDMA BAND Ⅱ

Test Positions		Channel		Test Mode	Power(dBm)		SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
		CH.	MHz		Maximum Turn-up Power(dBm)	Measured output power (dBm)	Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
Right Head	Cheek	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.261	0.262	--
	Tilt	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.247	0.248	--
Left Head	Cheek	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.298	**0.299**	**5**
	Tilt	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.283	0.284	--
Body-worn (10mm Separation)	Front Side	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.175	0.176	--
	Back Side	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.455	0.457	--
Hotspot (10mm Separation)	Front Side	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.172	0.173	--
	Back Side	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.458	**0.460**	**6**
	Right Edge	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.123	0.124	--
	Left Edge	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.179	0.180	--
	Top Edge	9538	1907.6	RMC 12.2kbps	22	21.98	1.005	0.128	0.129	--

Table 7: SAR Values of WCDMA BAND IV

Test Positions		Channel		Test Mode	Power(dBm)		SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
		CH.	MHz		Maximum Turn-up Power(dBm)	Measured output power (dBm)	Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
Right Head	Cheek	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.131	0.142	--
	Tilt	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.125	0.135	--
Left Head	Cheek	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.19	**0.205**	**7**
	Tilt	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.177	0.191	--
Body-worn (10mm Separation)	Front Side	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.104	0.112	--
	Back Side	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.418	0.452	--
Hotspot (10mm Separation)	Front Side	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.101	0.109	--
	Back Side	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.422	**0.456**	**8**
	Right Edge	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.036	0.039	--
	Left Edge	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.141	0.152	--
	Top Edge	1513	1752.6	RMC 12.2kbps	22	21.66	1.081	0.143	0.155	--

Table 8: SAR Values of WCDMA BAND V

Test Positions		Channel		Test Mode	Power(dBm)		SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
		CH.	MHz		Maximum Turn-up Power(dBm)	Measured output power (dBm)	Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
Right Head	Cheek	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.072	0.074	--
	Tilt	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.069	0.071	--
Left Head	Cheek	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.076	**0.078**	**9**
	Tilt	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.071	0.073	--
Body-worn (10mm Separation)	Front Side	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.045	0.046	--
	Back Side	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.114	0.118	--
Hotspot (10mm Separation)	Front Side	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.049	0.051	--
	Back Side	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.118	**0.122**	**10**
	Right Edge	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.052	0.054	--
	Left Edge	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.067	0.069	--
	Top Edge	4183	836.6	RMC 12.2kbps	22	21.86	1.033	0.02	0.021	--

Table 9: SAR Values of LTE BAND 2, 20MHz ,QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	18700	1860	21	20.80	0	1.047	0.378	0.396	--
		Tilt	18700	1860	21	20.80	0	1.047	0.366	0.383	--
	Left Head	Cheek	18700	1860	21	20.80	0	1.047	0.400	**0.419**	**11**
		Tilt	18700	1860	21	20.80	0	1.047	0.385	0.403	--
	Body-worn (10mm Separation)	Front Side	18700	1860	21	20.80	0	1.047	0.413	0.432	--
		Back Side	18700	1860	21	20.80	0	1.047	0.762	0.798	--
	Hotspot (10mm Separation)	Front Side	18700	1860	21	20.80	0	1.047	0.417	0.437	--
		Back Side	18700	1860	21	20.80	0	1.047	0.782	**0.819**	**12**
		Back Side	18900	1880	20.5	20.15	0	1.084	0.752	0.815	--
		Back Side	19100	1900	20.5	20.03	0	1.114	0.729	0.812	--
		Right Edge	18700	1860	21	20.80	0	1.047	0.079	0.083	--
		Left Edge	18700	1860	21	20.80	0	1.047	0.405	0.424	--
		Top Edge	18700	1860	21	20.80	0	1.047	0.236	0.247	--
50%RB #0	Right Head	Cheek	18700	1860	21	20.80	1	1.047	0.372	0.390	--
		Tilt	18700	1860	21	20.80	1	1.047	0.359	0.376	--
	Left Head	Cheek	18700	1860	21	20.80	1	1.047	0.393	0.412	--
		Tilt	18700	1860	21	20.80	1	1.047	0.382	0.400	--
	Body-worn (10mm Separation)	Front Side	18700	1860	21	20.80	1	1.047	0.408	0.427	--
		Back Side	18700	1860	21	20.80	1	1.047	0.757	0.793	--
	Hotspot (10mm Separation)	Front Side	18700	1860	21	20.80	1	1.047	0.41	0.429	--
		Back Side	18700	1860	21	20.80	1	1.047	0.775	0.812	--
		Back Side	18900	1880	20.5	20.15	1	1.084	0.745	0.808	--
		Back Side	19100	1900	20.5	20.03	1	1.114	0.717	0.799	--
		Right Edge	18700	1860	21	20.80	1	1.047	0.072	0.075	--
		Left Edge	18700	1860	21	20.80	1	1.047	0.399	0.418	--
		Top Edge	18700	1860	21	20.80	1	1.047	0.232	0.243	--

Table 10: SAR Values of LTE BAND 4, 20MHz ,QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	20050	1720	22	21.43	0	1.140	0.402	**0.458**	**13**
		Tilt	20050	1720	22	21.43	0	1.140	0.387	0.441	--
	Left Head	Cheek	20050	1720	22	21.43	0	1.140	0.330	0.376	--
		Tilt	20050	1720	22	21.43	0	1.140	0.322	0.367	--
	Body-worn (10mm Separation)	Front Side	20050	1720	22	21.43	0	1.140	0.250	0.285	--
		Back Side	20050	1720	22	21.43	0	1.140	0.883	1.007	--
		Back Side	20175	1732.5	21	20.99	0	1.002	0.866	0.868	--
		Back Side	20300	1745	21	20.89	0	1.026	0.858	0.880	--
	Hotspot (10mm Separation)	Front Side	20050	1720	22	21.43	0	1.140	0.257	0.293	--
		Back Side	20050	1720	22	21.43	0	1.140	0.889	**1.014**	**14**
		Back Side	20175	1732.5	21	20.99	0	1.002	0.873	0.875	--
		Back Side	20300	1745	21	20.89	0	1.026	0.865	0.887	--
		Right Edge	20050	1720	22	21.43	0	1.140	0.165	0.188	--
		Left Edge	20050	1720	22	21.43	0	1.140	0.275	0.314	--
		Top Edge	20050	1720	22	21.43	0	1.140	0.314	0.358	--
50%RB #0	Right Head	Cheek	20050	1720	22	21.43	1	1.140	0.389	0.444	--
		Tilt	20050	1720	22	21.43	1	1.140	0.374	0.426	--
	Left Head	Cheek	20050	1720	22	21.43	1	1.140	0.326	0.372	--
		Tilt	20050	1720	22	21.43	1	1.140	0.314	0.358	--
	Body-worn (10mm Separation)	Front Side	20050	1720	22	21.43	1	1.140	0.241	0.275	--
		Back Side	20050	1720	22	21.43	1	1.140	0.865	0.986	--
		Back Side	20175	1732.5	21	20.99	1	1.002	0.852	0.854	--
		Back Side	20300	1745	21	20.89	1	1.026	0.841	0.863	--
	Hotspot (10mm Separation)	Front Side	20050	1720	22	21.43	1	1.140	0.249	0.284	--
		Back Side	20050	1720	22	21.43	1	1.140	0.871	0.993	--
		Back Side	20175	1732.5	21	20.99	1	1.002	0.849	0.851	--
		Back Side	20300	1745	21	20.89	1	1.026	0.836	0.857	--

		Right Edge	20050	1720	22	21.43	1	1.140	0.157	0.179	--
		Left Edge	20050	1720	22	21.43	1	1.140	0.27	0.308	--
		Top Edge	20050	1720	22	21.43	1	1.140	0.306	0.349	--

Table 11: SAR Values of LTE BAND 5, 10MHz , QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	20450	829	24	23.77	0	1.054	0.058	0.061	--
		Tilt	20450	829	24	23.77	0	1.054	0.051	0.054	--
	Left Head	Cheek	20450	829	24	23.77	0	1.054	0.075	**0.079**	**15**
		Tilt	20450	829	24	23.77	0	1.054	0.068	0.072	--
	Body-worn (10mm Separation)	Front Side	20450	829	24	23.77	0	1.054	0.041	0.043	--
		Back Side	20450	829	24	23.77	0	1.054	0.038	0.040	--
	Hotspot (10mm Separation)	Front Side	20450	829	24	23.77	0	1.054	0.045	**0.047**	**16**
		Back Side	20450	829	24	23.77	0	1.054	0.036	0.038	--
		Right Edge	20450	829	24	23.77	0	1.054	0.027	0.028	--
		Left Edge	20450	829	24	23.77	0	1.054	0.03	0.032	--
		Top Edge	20450	829	24	23.77	0	1.054	0.008	0.008	--
50%RB #0	Right Head	Cheek	20450	829	24	23.77	1	1.054	0.052	0.055	--
		Tilt	20450	829	24	23.77	1	1.054	0.048	0.051	--
	Left Head	Cheek	20450	829	24	23.77	1	1.054	0.071	0.075	--
		Tilt	20450	829	24	23.77	1	1.054	0.063	0.066	--
	Body-worn (10mm Separation)	Front Side	20450	829	24	23.77	1	1.054	0.036	0.038	--
		Back Side	20450	829	24	23.77	1	1.054	0.033	0.035	--
	Hotspot (10mm Separation)	Front Side	20450	829	24	23.77	1	1.054	0.039	0.041	--
		Back Side	20450	829	24	23.77	1	1.054	0.034	0.036	--
		Right Edge	20450	829	24	23.77	1	1.054	0.025	0.026	--
		Left Edge	20450	829	24	23.77	1	1.054	0.022	0.023	--
		Top Edge	20450	829	24	23.77	1	1.054	0.006	0.006	--

Table 12: SAR Values of LTE BAND 7 , 20MHz ,QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	20850	2510	20	19.63	0	1.089	0.158	0.172	--
		Tilt	20850	2510	20	19.63	0	1.089	0.151	0.164	--
	Left Head	Cheek	20850	2510	20	19.63	0	1.089	0.271	**0.295**	**17**
		Tilt	20850	2510	20	19.63	0	1.089	0.265	0.289	--
	Body-worn (10mm Separation)	Front Side	20850	2510	20	19.63	0	1.089	0.223	0.243	--
		Back Side	20850	2510	20	19.63	0	1.089	0.412	0.449	--
	Hotspot (10mm Separation)	Front Side	20850	2510	20	19.63	0	1.089	0.224	0.244	--
		Back Side	20850	2510	20	19.63	0	1.089	0.417	**0.454**	**18**
		Right Edge	20850	2510	20	19.63	0	1.089	0.028	0.030	--
		Left Edge	20850	2510	20	19.63	0	1.089	0.102	0.111	--
		Top Edge	20850	2510	20	19.63	0	1.089	0.037	0.040	--
50%RB #0	Right Head	Cheek	20850	2510	20	19.63	1	1.089	0.149	0.162	--
		Tilt	20850	2510	20	19.63	1	1.089	0.145	0.158	--
	Left Head	Cheek	20850	2510	20	19.63	1	1.089	0.266	0.290	--
		Tilt	20850	2510	20	19.63	1	1.089	0.258	0.281	--
	Body-worn (10mm Separation)	Front Side	20850	2510	20	19.63	1	1.089	0.215	0.234	--
		Back Side	20850	2510	20	19.63	1	1.089	0.408	0.444	--
	Hotspot (10mm Separation)	Front Side	20850	2510	20	19.63	1	1.089	0.217	0.236	--
		Back Side	20850	2510	20	19.63	1	1.089	0.412	0.449	--
		Right Edge	20850	2510	20	19.63	1	1.089	0.024	0.026	--
		Left Edge	20850	2510	20	19.63	1	1.089	0.097	0.106	--
		Top Edge	20850	2510	20	19.63	1	1.089	0.033	0.036	--

Table 13: SAR Values of LTE BAND 12, 10MHz , QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	23130	711	25	24.96	0	1.009	0.159	0.160	--
		Tilt	23130	711	25	24.96	0	1.009	0.152	0.153	--
	Left Head	Cheek	23130	711	25	24.96	0	1.009	0.182	**0.184**	**19**
		Tilt	23130	711	25	24.96	0	1.009	0.170	0.172	--
	Body-worn (10mm Separation)	Front Side	23130	711	25	24.96	0	1.009	0.037	0.037	--
		Back Side	23130	711	25	24.96	0	1.009	0.091	0.092	--
	Hotspot (10mm Separation)	Front Side	23130	711	25	24.96	0	1.009	0.039	0.039	--
		Back Side	23130	711	25	24.96	0	1.009	0.095	**0.096**	**20**
		Right Edge	23130	711	25	24.96	0	1.009	0.027	0.027	--
		Left Edge	23130	711	25	24.96	0	1.009	0.035	0.035	--
		Top Edge	23130	711	25	24.96	0	1.009	0.015	0.015	--
50%RB #0	Right Head	Cheek	23130	711	25	24.96	1	1.009	0.151	0.152	--
		Tilt	23130	711	25	24.96	1	1.009	0.147	0.148	--
	Left Head	Cheek	23130	711	25	24.96	1	1.009	0.178	0.180	--
		Tilt	23130	711	25	24.96	1	1.009	0.165	0.167	--
	Body-worn (10mm Separation)	Front Side	23130	711	25	24.96	1	1.009	0.034	0.034	--
		Back Side	23130	711	25	24.96	1	1.009	0.087	0.088	--
	Hotspot (10mm Separation)	Front Side	23130	711	25	24.96	1	1.009	0.035	0.035	--
		Back Side	23130	711	25	24.96	1	1.009	0.09	0.091	--
		Right Edge	23130	711	25	24.96	1	1.009	0.023	0.023	--
		Left Edge	23130	711	25	24.96	1	1.009	0.031	0.031	--
		Top Edge	23130	711	25	24.96	1	1.009	0.012	0.012	--

Table 14: SAR Values of LTE BAND 13, 10MHz , QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	23230	782	24	23.63	0	1.089	0.217	0.236	--
		Tilt	23230	782	24	23.63	0	1.089	0.211	0.230	--
	Left Head	Cheek	23230	782	24	23.63	0	1.089	0.238	**0.259**	**21**
		Tilt	23230	782	24	23.63	0	1.089	0.225	0.245	--
	Body-worn (10mm Separation)	Front Side	23230	782	24	23.63	0	1.089	0.079	0.086	--
		Back Side	23230	782	24	23.63	0	1.089	0.165	0.180	--
	Hotspot (10mm Separation)	Front Side	23230	782	24	23.63	0	1.089	0.076	0.083	--
		Back Side	23230	782	24	23.63	0	1.089	0.171	**0.186**	**22**
		Right Edge	23230	782	24	23.63	0	1.089	0.091	0.099	--
		Left Edge	23230	782	24	23.63	0	1.089	0.108	0.118	--
		Top Edge	23230	782	24	23.63	0	1.089	0.024	0.026	--
50%RB #0	Right Head	Cheek	23230	782	24	23.63	1	1.089	0.213	0.232	--
		Tilt	23230	782	24	23.63	1	1.089	0.208	0.226	--
	Left Head	Cheek	23230	782	24	23.63	1	1.089	0.232	0.253	--
		Tilt	23230	782	24	23.63	1	1.089	0.220	0.240	--
	Body-worn (10mm Separation)	Front Side	23230	782	24	23.63	1	1.089	0.073	0.079	--
		Back Side	23230	782	24	23.63	1	1.089	0.160	0.174	--
	Hotspot (10mm Separation)	Front Side	23230	782	24	23.63	1	1.089	0.071	0.077	--
		Back Side	23230	782	24	23.63	1	1.089	0.163	0.177	--
		Right Edge	23230	782	24	23.63	1	1.089	0.088	0.096	--
		Left Edge	23230	782	24	23.63	1	1.089	0.102	0.111	--
		Top Edge	23230	782	24	23.63	1	1.089	0.019	0.021	--

Table 15: SAR Values of LTE BAND 66, 20MHz , QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	132072	1720	20.5	20.28	0	1.052	0.410	**0.431**	**23**
		Tilt	132072	1720	20.5	20.28	0	1.052	0.402	0.423	--
	Left Head	Cheek	132072	1720	20.5	20.28	0	1.052	0.410	0.431	--
		Tilt	132072	1720	20.5	20.28	0	1.052	0.400	0.421	--
	Body-worn (10mm Separation)	Front Side	132072	1720	20.5	20.28	0	1.052	0.245	0.258	--
		Back Side	132072	1720	20.5	20.28	0	1.052	0.892	0.938	--
		Back Side	132321	1744.9	20	19.26	0	1.186	0.785	0.931	--
		Back Side	132471	1759.9	20	19.58	0	1.102	0.822	0.905	--
	Hotspot (10mm Separation)	Front Side	132072	1720	20.5	20.28	0	1.052	0.244	0.257	--
		Back Side	132072	1720	20.5	20.28	0	1.052	0.901	**0.948**	**24**
		Back Side	132321	1744.9	20	19.26	0	1.186	0.796	0.944	--
		Back Side	132471	1759.9	20	19.58	0	1.102	0.860	0.947	--
		Right Edge	132072	1720	20.5	20.28	0	1.052	0.183	0.193	--
		Left Edge	132072	1720	20.5	20.28	0	1.052	0.49	0.515	--
		Top Edge	132072	1720	20.5	20.28	0	1.052	0.554	0.583	--
50%RB #0	Right Head	Cheek	132072	1720	20.5	20.28	1	1.052	0.405	0.426	--
		Tilt	132072	1720	20.5	20.28	1	1.052	0.393	0.413	--
	Left Head	Cheek	132072	1720	20.5	20.28	1	1.052	0.406	0.427	--
		Tilt	132072	1720	20.5	20.28	1	1.052	0.395	0.416	--
	Body-worn (10mm Separation)	Front Side	132072	1720	20.5	20.28	1	1.052	0.240	0.252	--
		Back Side	132072	1720	20.5	20.28	1	1.052	0.886	0.932	--
		Back Side	132321	1744.9	20	19.26	1	1.186	0.782	0.927	--
		Back Side	132471	1759.9	20	19.58	1	1.102	0.817	0.900	--
	Hotspot (10mm Separation)	Front Side	132072	1720	20.5	20.28	1	1.052	0.238	0.250	--
		Back Side	132072	1720	20.5	20.28	1	1.052	0.891	0.937	--
		Back Side	132321	1744.9	20	19.26	1	1.186	0.785	0.931	--
		Back Side	132471	1759.9	20	19.58	1	1.102	0.829	0.913	--
		Right Edge	132072	1720	20.5	20.28	1	1.052	0.165	0.174	--

		Left Edge	132072	1720	20.5	20.28	1	1.052	0.482	0.507	--
		Top Edge	132072	1720	20.5	20.28	1	1.052	0.547	0.575	--

Table 16: SAR Values of LTE BAND 71, 20MHz , QPSK

Test Mode	Test Positions		Channel		Power(dBm)		MPR (dB)	SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
			CH.	MHz	Maximum Turn-up Power (dBm)	Measured output power (dBm)		Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
1RB #49	Right Head	Cheek	40340	673	26	25.82	0	1.042	0.061	0.064	--
		Tilt	40340	673	26	25.82	0	1.042	0.055	0.057	--
	Left Head	Cheek	40340	673	26	25.82	0	1.042	0.075	**0.078**	**25**
		Tilt	40340	673	26	25.82	0	1.042	0.068	0.071	--
	Body-worn (10mm Separation)	Front Side	40340	673	26	25.82	0	1.042	0.036	0.038	--
		Back Side	40340	673	26	25.82	0	1.042	0.124	0.129	--
	Hotspot (10mm Separation)	Front Side	40340	673	26	25.82	0	1.042	0.035	0.036	--
		Back Side	40340	673	26	25.82	0	1.042	0.127	**0.132**	**26**
		Right Edge	40340	673	26	25.82	0	1.042	0.033	0.034	--
		Left Edge	40340	673	26	25.82	0	1.042	0.059	0.061	--
		Top Edge	40340	673	26	25.82	0	1.042	0.021	0.022	--
50%RB #0	Right Head	Cheek	40340	673	26	25.82	1	1.042	0.063	0.066	--
		Tilt	40340	673	26	25.82	1	1.042	0.056	0.058	--
	Left Head	Cheek	40340	673	26	25.82	1	1.042	0.070	0.073	--
		Tilt	40340	673	26	25.82	1	1.042	0.060	0.063	--
	Body-worn (10mm Separation)	Front Side	40340	673	26	25.82	1	1.042	0.031	0.032	--
		Back Side	40340	673	26	25.82	1	1.042	0.118	0.123	--
	Hotspot (10mm Separation)	Front Side	40340	673	26	25.82	1	1.042	0.031	0.032	--
		Back Side	40340	673	26	25.82	1	1.042	0.122	0.127	--
		Right Edge	40340	673	26	25.82	1	1.042	0.027	0.028	--
		Left Edge	40340	673	26	25.82	1	1.042	0.052	0.054	--
		Top Edge	40340	673	26	25.82	1	1.042	0.019	0.020	--

Table 17: SAR Values of 2.4G Wi-Fi

Test Positions		Channel		Test Mode	Power(dBm)		SAR 1g(W/Kg), Limit(1.6W/kg)			Plot No.
		CH.	MHz		Maximum Turn-up Power (dBm)	Measured output power (dBm)	Scaling Factor	Measured SAR 1g(W/kg)	Scaled SAR 1g(W/kg)	
Right Head	Cheek	1	2412	802.11b	18	17.49	1.125	0.054	0.061	--
	Tilt	1	2412	802.11b	18	17.49	1.125	0.048	0.054	--
Left Head	Cheek	1	2412	802.11b	18	17.49	1.125	0.110	**0.124**	**27**
	Tilt	1	2412	802.11b	18	17.49	1.125	0.105	0.118	--
Body-worn (10mm Separation)	Front Side	1	2412	802.11b	18	17.49	1.125	0.081	**0.091**	--
	Back Side	1	2412	802.11b	18	17.49	1.125	0.347	0.390	--
Hotspot (10mm Separation)	Front Side	1	2412	802.11b	18	17.49	1.125	0.079	0.089	--
	Back Side	1	2412	802.11b	18	17.49	1.125	0.35	**0.394**	**28**
	Left Edge	1	2412	802.11b	18	17.49	1.125	0.032	0.036	--
	Bottom Edge	1	2412	802.11b	18	17.49	1.125	0.114	0.128	--

Note: According to KDB 648474-D04 Handset SAR v01r03 section 1.5,the diagonal dimension of this device is > 16.0 cm,but the hotspot mode 1-g reported SAR is 1.014W/kg <1.2 W/kg ,so the 10-g extremity SAR is not required.

Measurement variability consideration

According to KDB 865664 D01v01r04 section 2.8.1, repeated measurements are required following the procedures as below:

Repeated measurement is not required when the original highest measured SAR is < 0.80W/kg; steps 2) through 4) do not apply.

When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

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 (~ 10% from the 1-g SAR limit).

Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

No Repeated SAR.

Simultaneous Transmission SAR Analysis.
List of Mode for Simultaneous Multi-band Transmission:

No.	Configurations	Head SAR	Body-worn SAR	Hotspot SAR
1	GSM(Voice) + WLAN 2.4GHz(Data)	Yes	Yes	Yes
2	GPRS (Data) + WLAN 2.4GHz(Data)	Yes	Yes	Yes
3	GSM(Voice) + Bluetooth(Data)	Yes	Yes	Yes
4	GPRS (Data) + Bluetooth(Data)	Yes	Yes	Yes
5	WCDMA (Voice) + WLAN 2.4GHz(Data)	Yes	Yes	Yes
6	WCDMA (Data) + WLAN 2.4GHz(Data)	Yes	Yes	Yes
7	WCDMA (Voice) + Bluetooth(Data)	Yes	Yes	Yes
8	WCDMA (Data) + Bluetooth(Data)	Yes	Yes	Yes
9	LTE (Data) + WLAN 2.4GHz(Data)	Yes	Yes	Yes
10	LTE (Data) + Bluetooth(Data)	Yes	Yes	Yes

Remark:
1. GSM/ WCDMA/LTE share the same antenna, and cannot transmit simultaneously.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. WWAN 1 and WWAN 2 antenna cannot transmit simultaneously.
4. According to the KDB 447498 D01 v06, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
(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.
For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01 v06 as below:
Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g) 5mm	SAR(1g) 10mm
9.6	9.12	5/10	2.48	7.5	0.383	0.191

5. The maximum SAR summation is calculated based onthe same configuration and test position

Head SAR Simultaneous

WWAN and 2.4G Wi-Fi

Position	WWAN（maximum）		2.4G Wi-Fi	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.272	0.061	0.333
Right Tilt	GSM	0.257	0.054	0.311
Left Cheek	GSM	0.316	0.124	0.440
Left Tilt	GSM	0.306	0.118	0.424
Right Cheek	WCDMA	0.262	0.061	0.323
Right Tilt	WCDMA	0.248	0.054	0.302
Left Cheek	WCDMA	0.299	0.124	0.423
Left Tilt	WCDMA	0.284	0.118	0.402
Right Cheek	LTE	**0.458**	0.061	0.519
Right Tilt	LTE	0.441	0.054	0.495
Left Cheek	LTE	0.431	0.124	0.555
Left Tilt	LTE	0.421	0.118	0.539

WWAN and BT

Position	WWAN（maximum）		BT(5mm)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.272	0.383	0.655
Right Tilt	GSM	0.257	0.383	0.640
Left Cheek	GSM	0.316	0.383	0.699
Left Tilt	GSM	0.306	0.383	0.689
Right Cheek	WCDMA	0.262	0.383	0.645
Right Tilt	WCDMA	0.248	0.383	0.631
Left Cheek	WCDMA	0.299	0.383	0.682
Left Tilt	WCDMA	0.284	0.383	0.667
Right Cheek	LTE	0.458	0.383	0.841
Right Tilt	LTE	0.441	0.383	0.824
Left Cheek	LTE	0.431	0.383	0.814
Left Tilt	LTE	0.421	0.383	0.804

Remark: BT the 1g SAR value is not being captured by the measurement system, the 1g-SAR value is conservatively used for simultaneous transmission analysis.

Body-worn SAR Simultaneous

WWAN and 2.4G Wi-Fi

Position	WWAN（maximum）		2.4G Wi-Fi (10mm)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Front	GSM	0.436	0.091	0.527
Back	GSM	0.799	0.390	1.189
Front	WCDMA	0.176	0.091	0.267
Back	WCDMA	0.457	0.390	0.847
Front	LTE	0.432	0.091	0.523
Back	LTE	**1.007**	0.390	1.397

WWAN and BT

Position	WWAN（maximum）		BT(10mm)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Front	GSM	0.436	0.191	0.627
Back	GSM	0.799	0.191	0.990
Front	WCDMA	0.176	0.191	0.367
Back	WCDMA	0.457	0.191	0.648
Front	LTE	0.432	0.191	0.623
Back	LTE	1.007	0.191	1.198

Remark: BT the 1g SAR value is not being captured by the measurement system, the 1g-SAR value is conservatively used for simultaneous transmission analysis.

Hotspot SAR Simultaneous

WWAN and 2.4G Wi-Fi

Position	WWAN（maximum）		2.4G Wi-Fi (10mm)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Front	GSM	0.441	0.089	0.530
Back		0.812	0.394	1.206
Right		0.046	-	0.046
Left		0.252	0.036	0.288
Top		0.228	-	0.228
Bottom		-	0.128	0.128
Front	WCDMA	0.173	0.089	0.262
Back		0.460	0.394	0.854
Right		0.124	-	0.124
Left		0.180	0.036	0.216
Top		0.155	-	0.155
Bottom		-	0.128	0.128
Front	LTE	0.437	0.089	0.526
Back		**1.014**	0.394	**1.408**
Right		0.193	-	0.193
Left		0.515	0.036	0.551
Top		0.583	-	0.583
Bottom		-	0.128	0.128

WWAN and BT

Position	WWAN（maximum）		BT (10mm)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Front	GSM	0.441	0.191	0.632
Back		0.812	0.191	1.003
Right		0.046	-	0.046
Left		0.252	0.191	0.443
Top		0.228	-	0.228
Bottom		-	0.191	0.191
Front	WCDMA	0.173	0.191	0.364
Back		0.460	0.191	0.651
Right		0.124	-	0.124
Left		0.18	0.191	0.371
Top		0.155	-	0.155
Bottom		-	0.191	0.191
Front	LTE	0.437	0.191	0.628
Back		1.014	0.191	1.205
Right		0.193	-	0.193
Left		0.515	0.191	0.706
Top		0.583	-	0.583
Bottom		-	0.191	0.191

Remark: BT the 1g SAR value is not being captured by the measurement system, the 1g-SAR value is conservatively used for simultaneous transmission analysis.

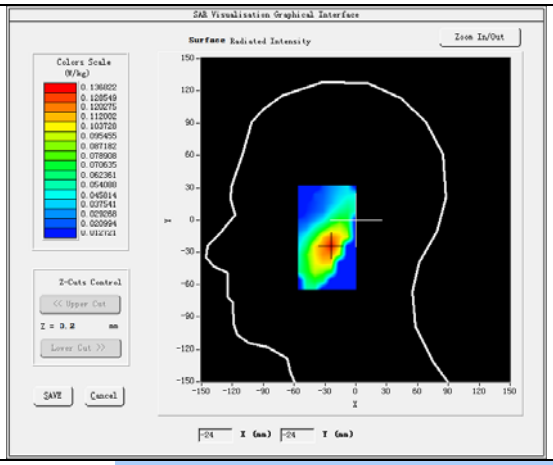
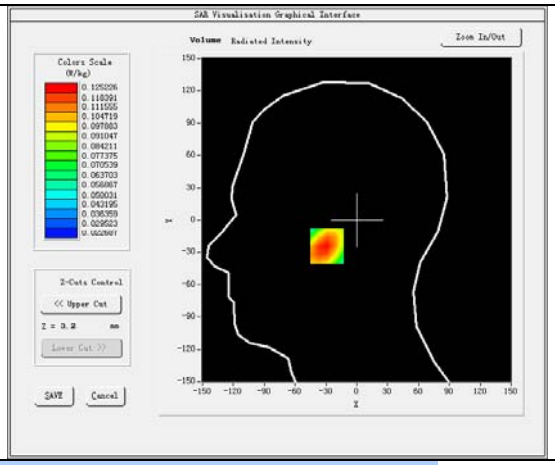
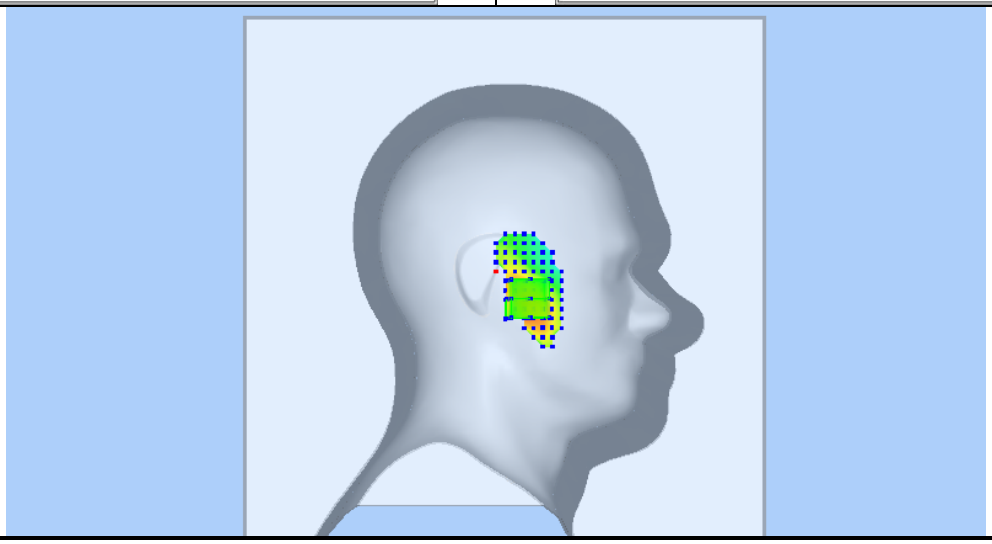
14 SAR Measurement Reference

14.1 References

1. **FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"**
2. **IEEE Std. C95.1-2005, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300GHz", 2005**
3. **IEC/IEEE 62209-1528:2020, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)**
4. **IEC 62209-2, "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices—Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate(SAR) for wireless communication devices used in close proximity to the human body(frequency range of 30MHz to 6GHz)", April 2010**
5. **FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 23th, 2015**
6. **FCC KDB 941225 D01 v03r01, "3G SAR Measurement Procedures", Oct 23th, 2015**
7. **FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 16th, 2015**
8. **FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 23th, 2015**
9. **FCC KDB865664 D01 v01r04, "SAR Measurement Requirements 100MHz to 6GHz", Aug 7th, 2015**
10. **FCC KDB865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations ", Oct 23th", 2015**
11. **FCC KDB648474 D04 v01r03, "SAR Evaluation Considerations for Wireless Handsets", Oct 23th", 2015**
12. **FCC KDB 248227 D01 v02r02, SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters, Oct 23th, 2015.**

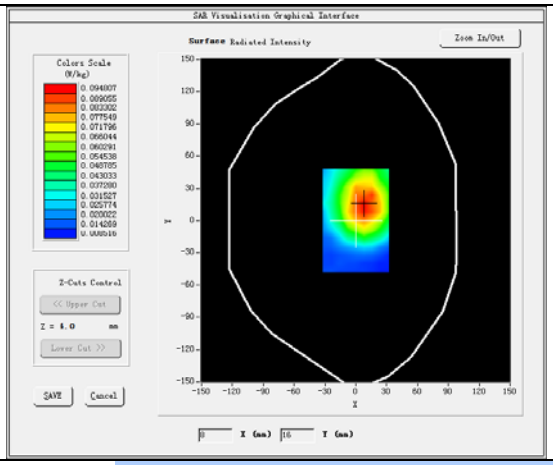
14.2 Maximum SAR measurement Plots

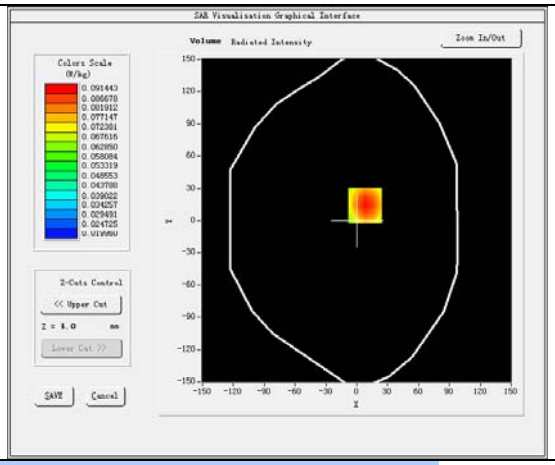
Plot 1: GPRS 850MHz, Middle channel (Left Head Cheek)
Product Description:Wonder Phone
Test Date: 2024-07-17

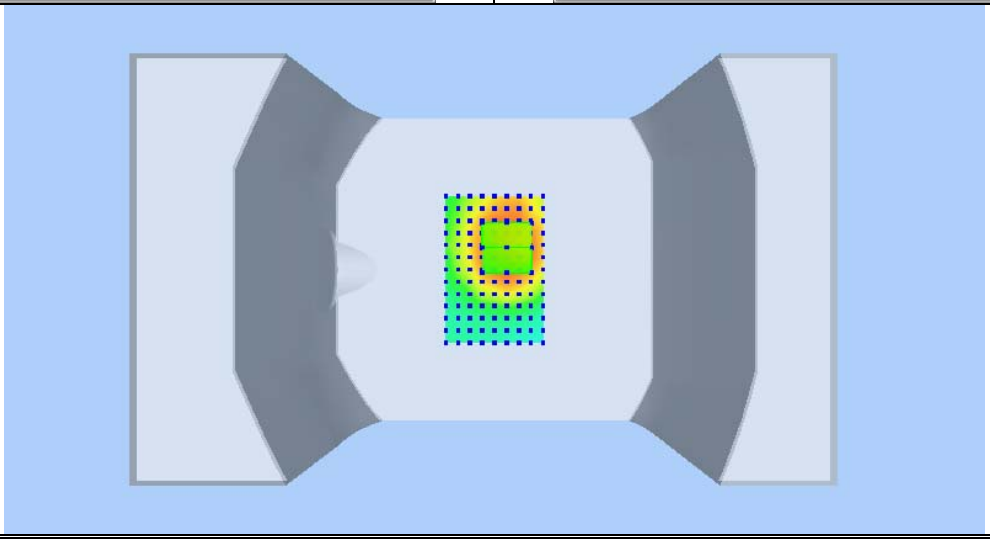
Medium(liquid type)	HL835
Frequency (MHz)	836.60000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-5.07
SAR 10g (W/Kg)	0.084738
SAR 1g (W/Kg)	0.120323
SURFACE SAR	**VOLUME SAR**
	
	

Plot 2: GPRS850MHz, Middle channel (Body-worn /Hotspot, Back Side)
Product Description:Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL835
Frequency (MHz)	836.60000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.15
SAR 10g (W/Kg)	0.063196
SAR 1g (W/Kg)	0.087989
SURFACE SAR	**VOLUME SAR**

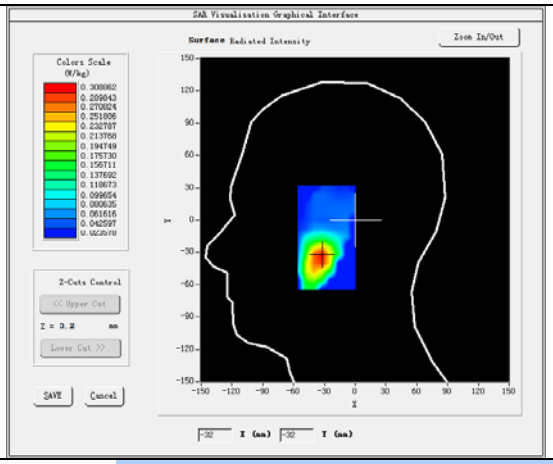


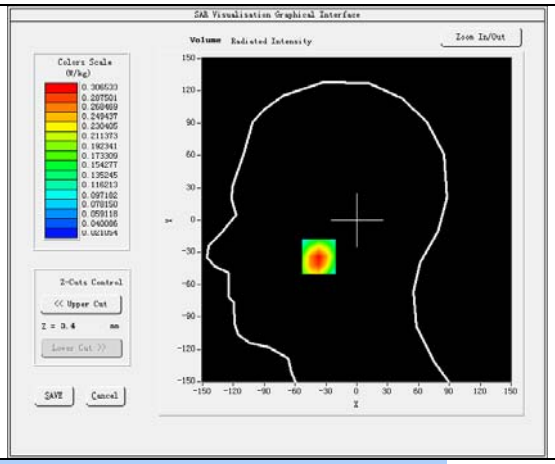


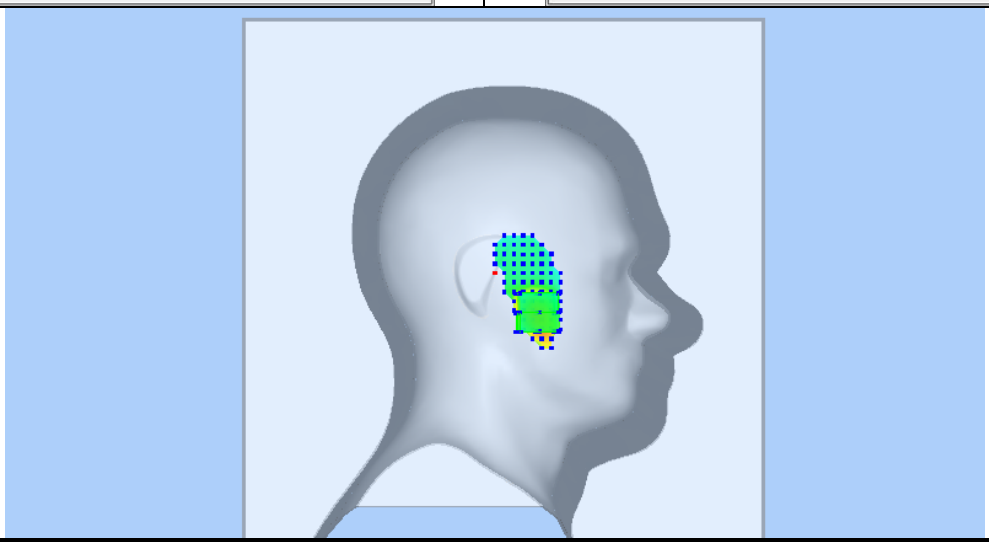


Plot 3: GPRS1900, Low channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1850.2000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	15.75
SAR 10g (W/Kg)	0.169246
SAR 1g (W/Kg)	0.289908
SURFACE SAR	**VOLUME SAR**

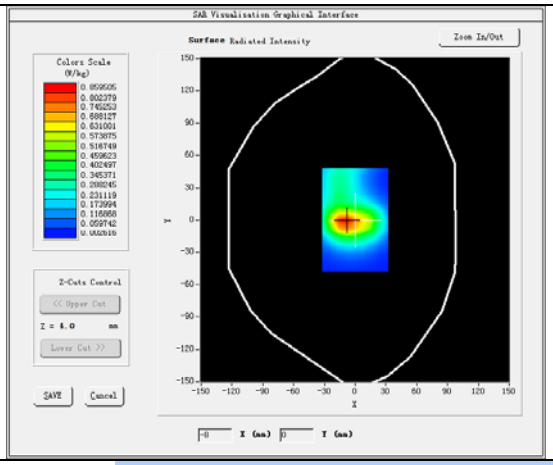


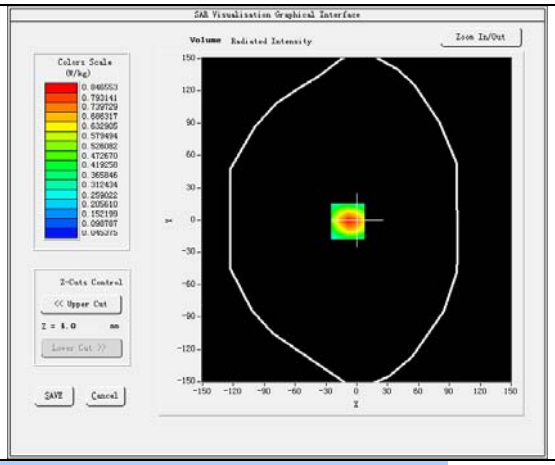


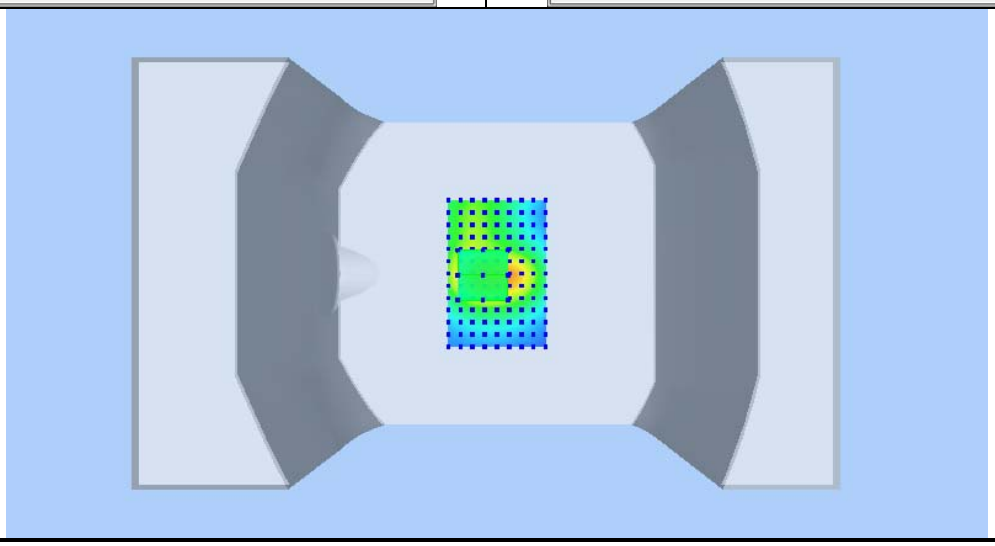


Plot 4: GPRS1900, Middle channel (Body-worn /Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1880.0000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-1.35
SAR 10g (W/Kg)	0.443749
SAR 1g (W/Kg)	0.794759
SURFACE SAR	**VOLUME SAR**

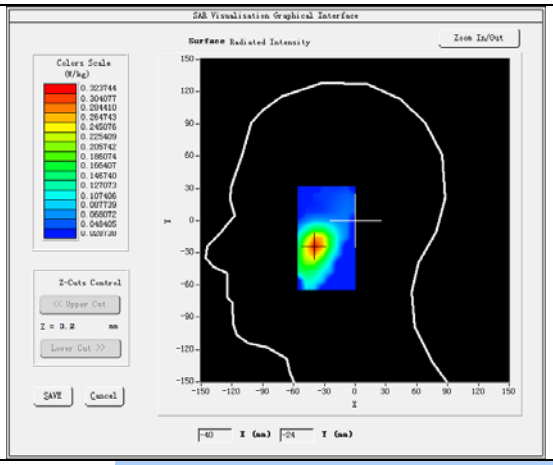


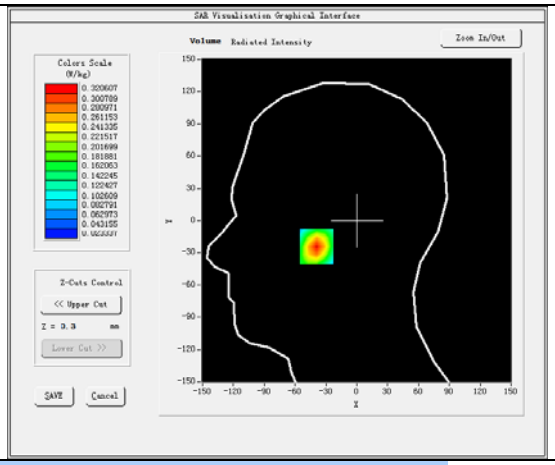


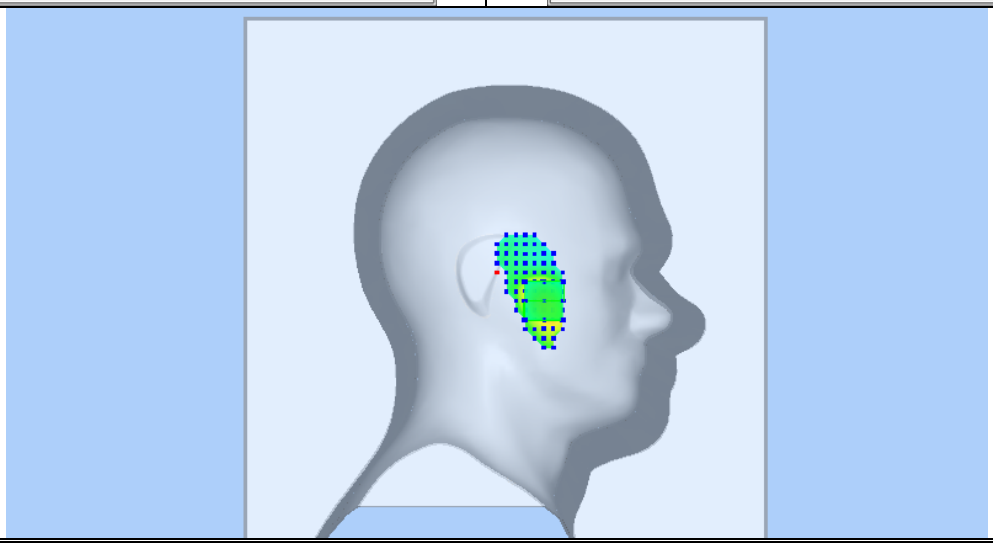


Plot 5: WCDMA BAND II, High channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1907.6000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-2.09
SAR 10g (W/Kg)	0.168562
SAR 1g (W/Kg)	0.298010
SURFACE SAR	**VOLUME SAR**

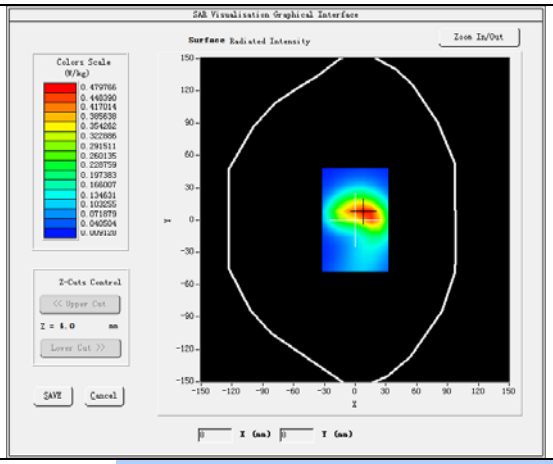


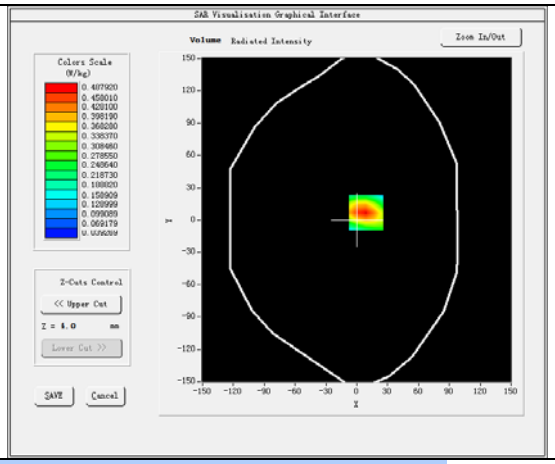


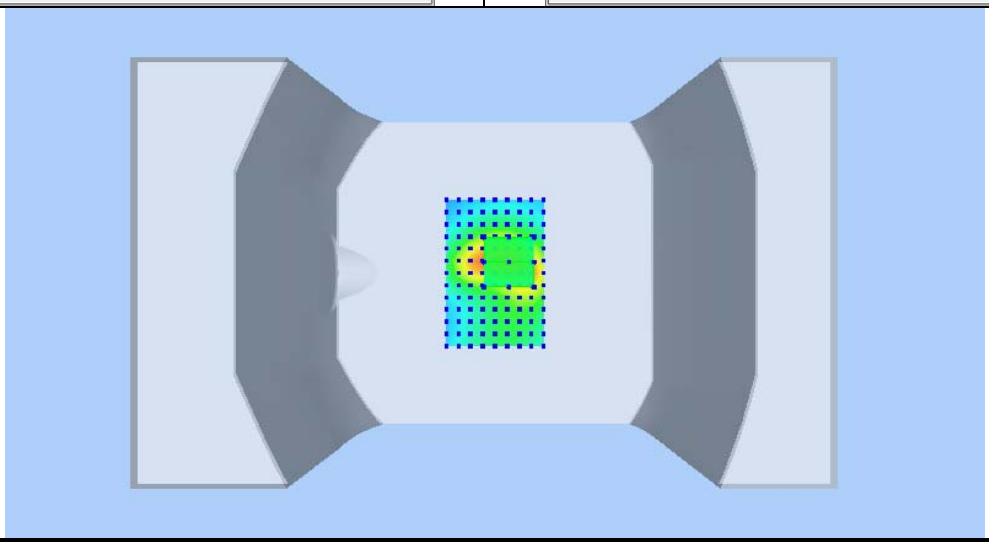


Plot 6: WCDMA BAND II, High channel (Body-worn /Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1907.6000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.39
SAR 10g (W/Kg)	0.261583
SAR 1g (W/Kg)	0.457761
SURFACE SAR	**VOLUME SAR**

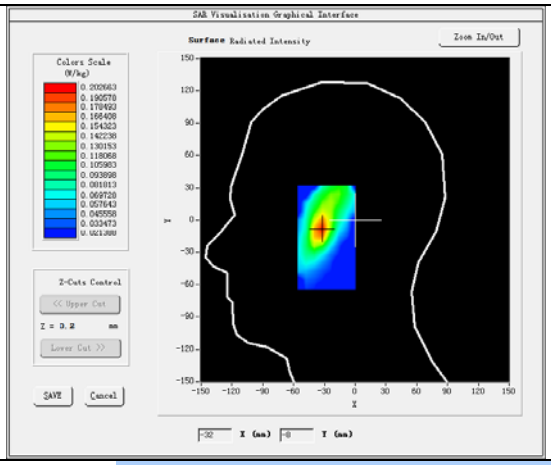


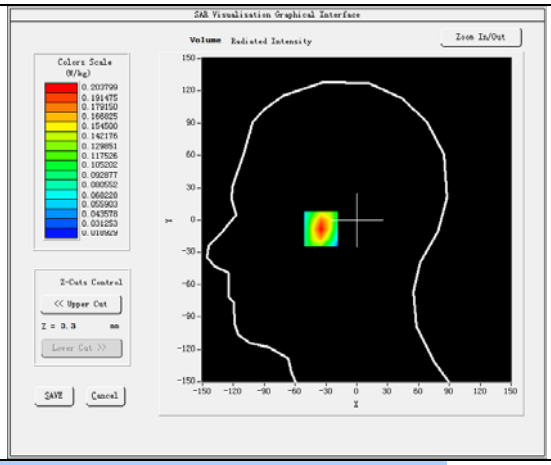


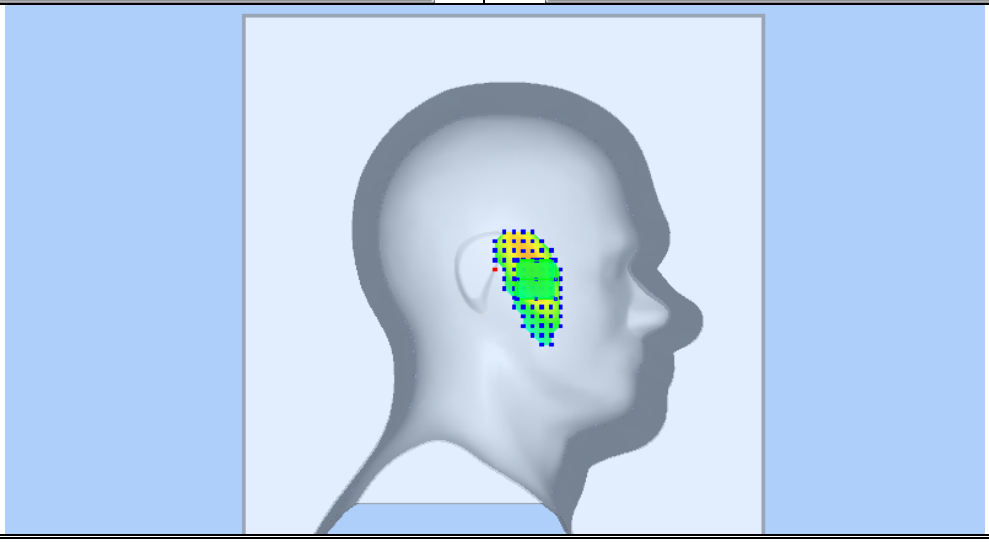


Plot 7: WCDMA BAND IV, High channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1752.6000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-4.31
SAR 10g (W/Kg)	0.104873
SAR 1g (W/Kg)	0.190147
SURFACE SAR	**VOLUME SAR**

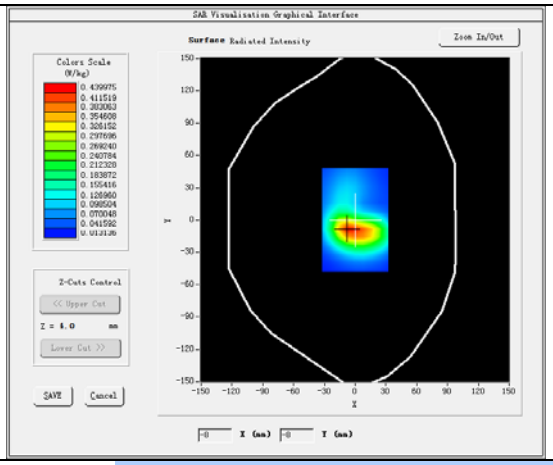


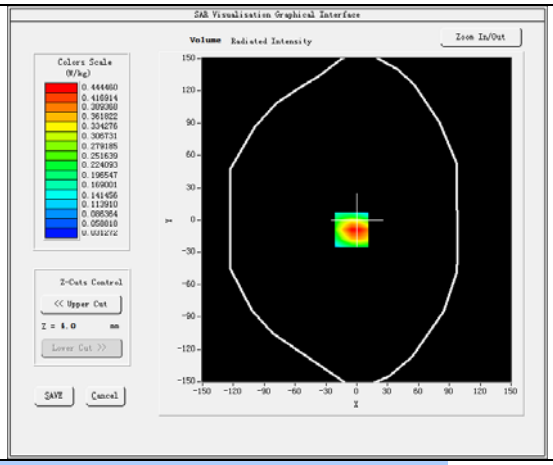


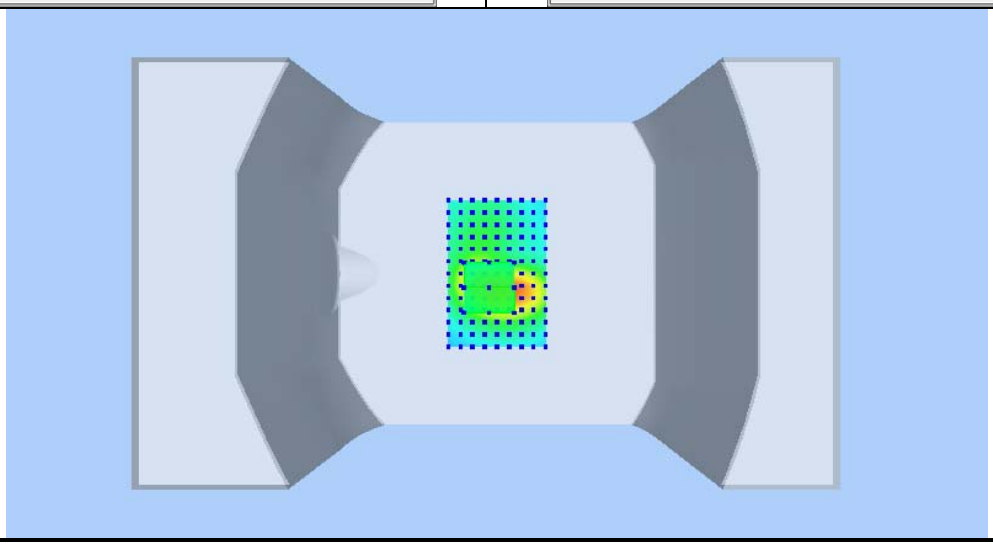


Plot 8: WCDMA BAND IV, High channel (Body-worn/Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1752.6000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.18
SAR 10g (W/Kg)	0.240287
SAR 1g (W/Kg)	0.421982
SURFACE SAR	**VOLUME SAR**

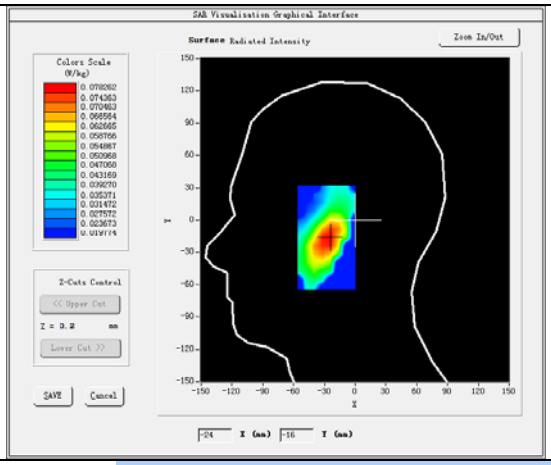


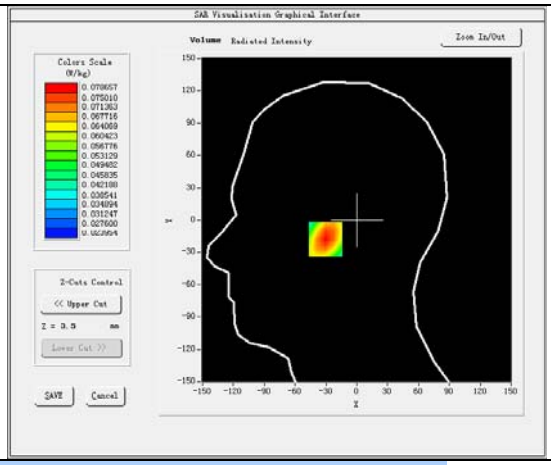


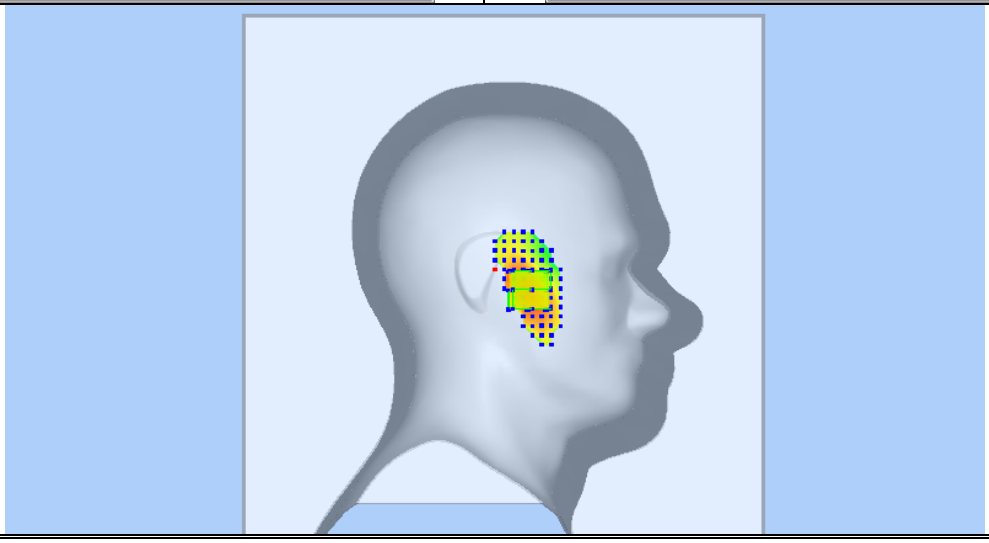


Plot 9: WCDMA BAND V, Middle channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL835
Frequency (MHz)	836.6000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	1.16
SAR 10g (W/Kg)	0.057253
SAR 1g (W/Kg)	0.075755
SURFACE SAR	**VOLUME SAR**

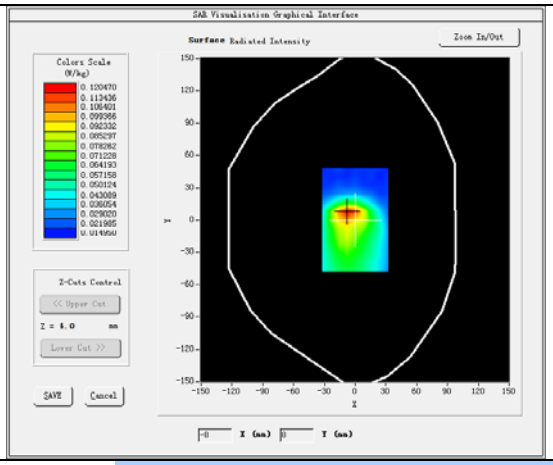


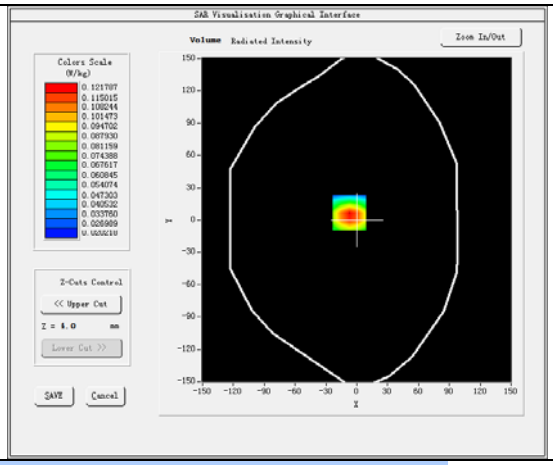


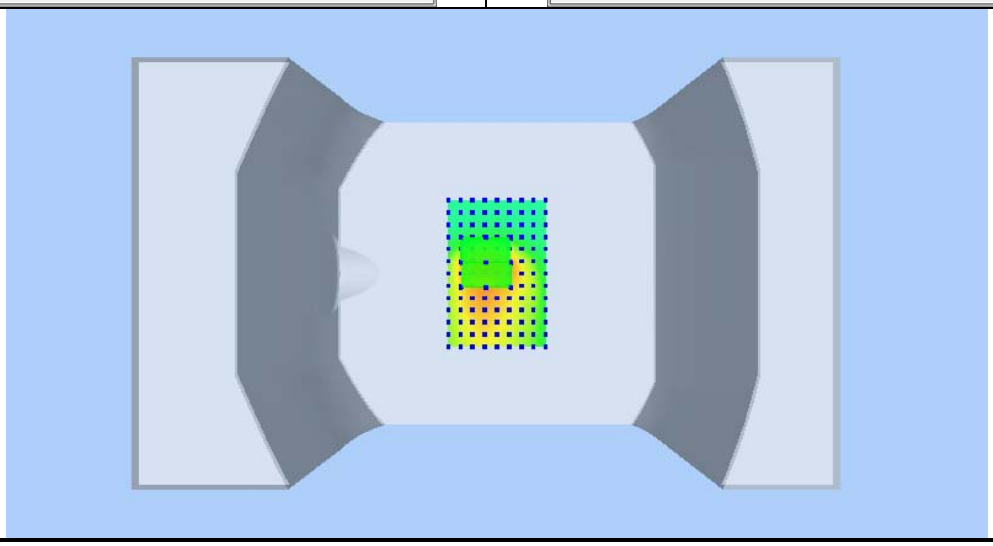


Plot 10: WCDMA BAND V, Middle channel (Body-worn/Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL835
Frequency (MHz)	836.6000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-1.95
SAR 10g (W/Kg)	0.070832
SAR 1g (W/Kg)	0.117808
SURFACE SAR	**VOLUME SAR**

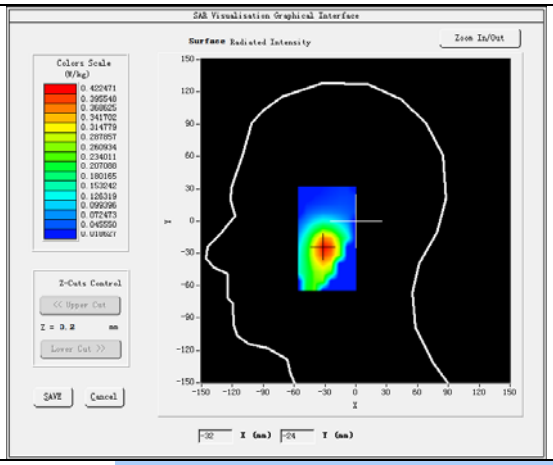


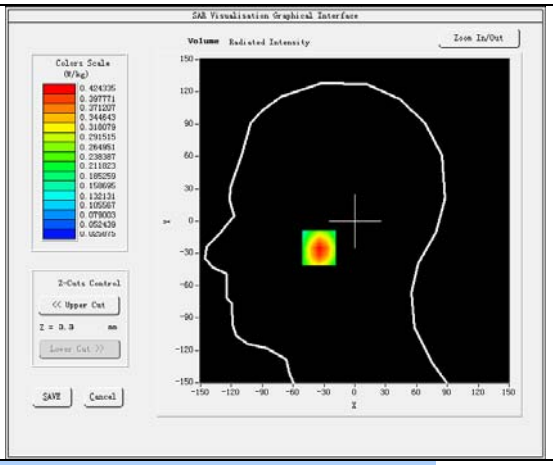


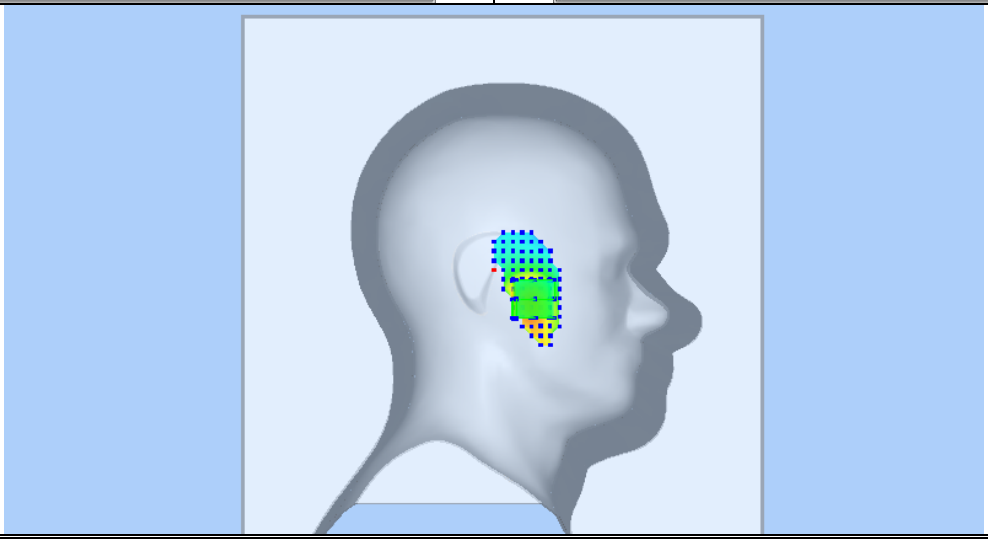


Plot 11:LTE BAND 2, Low channel (Left Head Cheek)
Product Description:Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1860.0000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.27
SAR 10g (W/Kg)	0.243549
SAR 1g (W/Kg)	0.400230
SURFACE SAR	**VOLUME SAR**



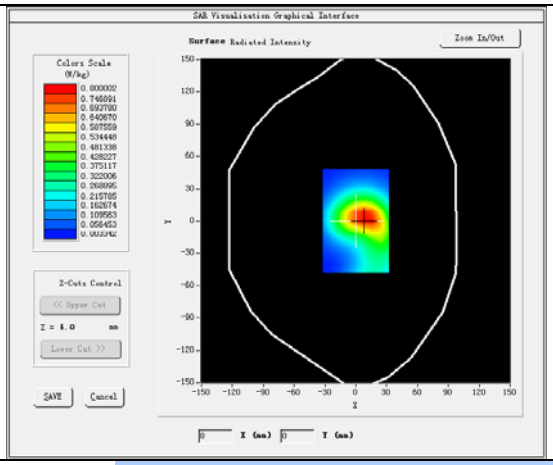


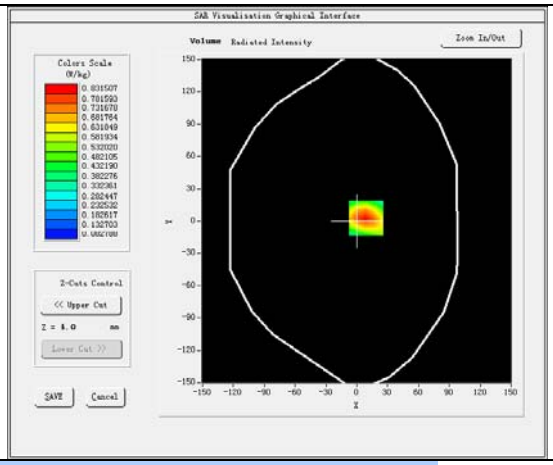


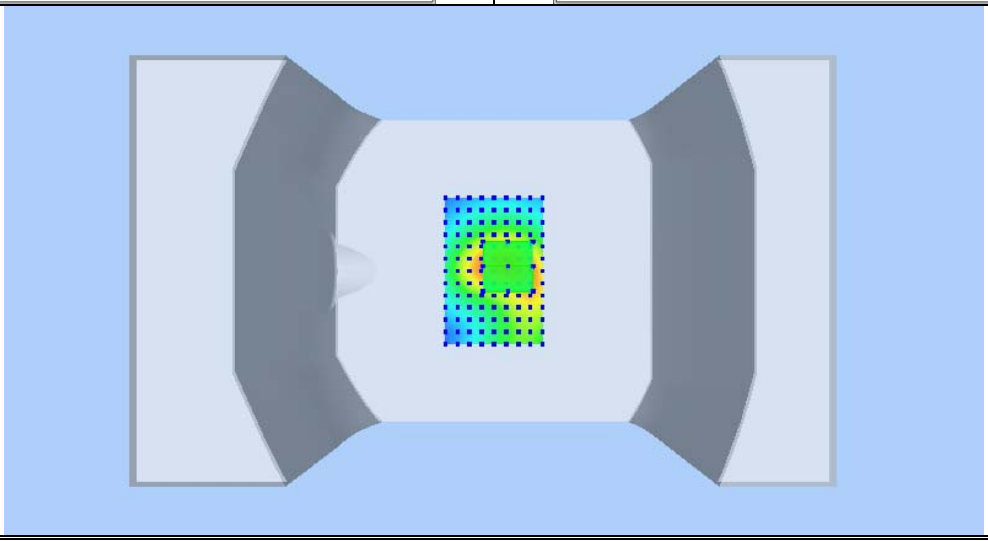
Plot 12:LTE BAND 2, Low channel (Body-worn /Hotspot, Back Side)

Product Description:Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1900
Frequency (MHz)	1860.0000
Relative permittivity (real part)	40.08
Conductivity (S/m)	1.39
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.83
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.47
SAR 10g (W/Kg)	0.471043
SAR 1g (W/Kg)	0.782137
SURFACE SAR	**VOLUME SAR**



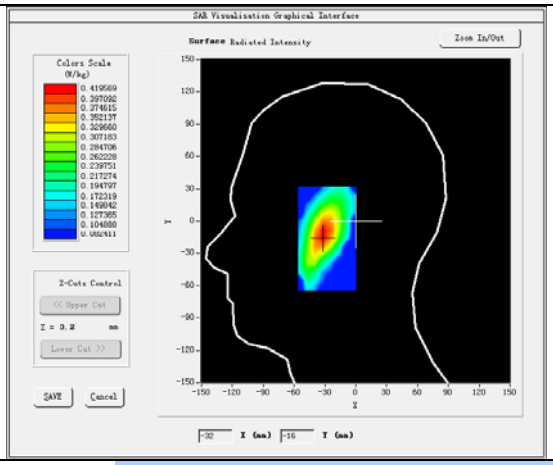


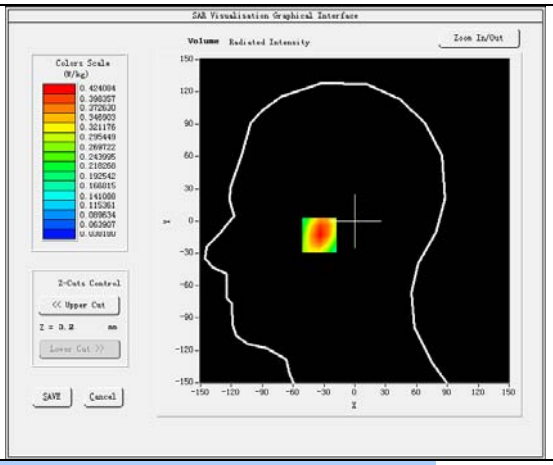


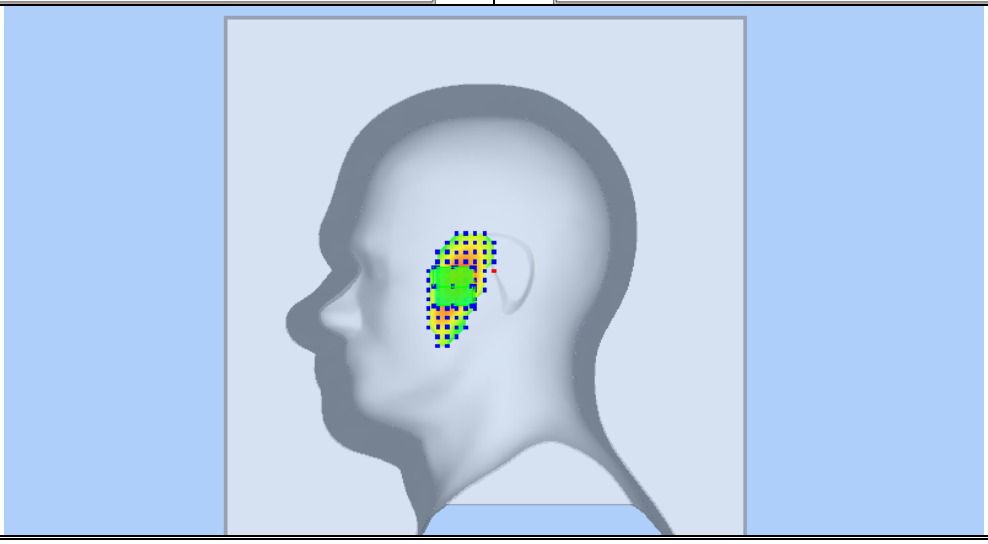
Plot 13:LTE BAND 4, Low channel (Right Head Cheek)

Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1720.0000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.11
SAR 10g (W/Kg)	0.261113
SAR 1g (W/Kg)	0.402009
SURFACE SAR	**VOLUME SAR**

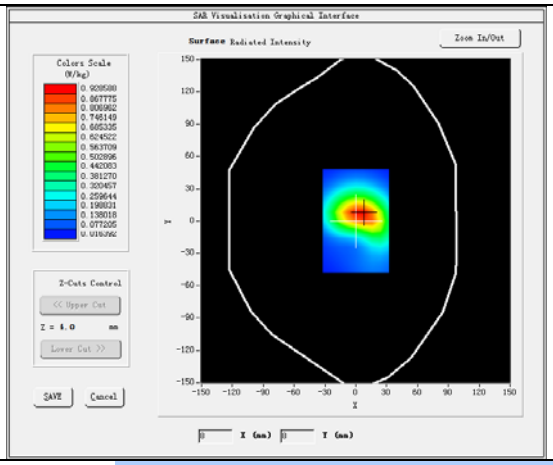


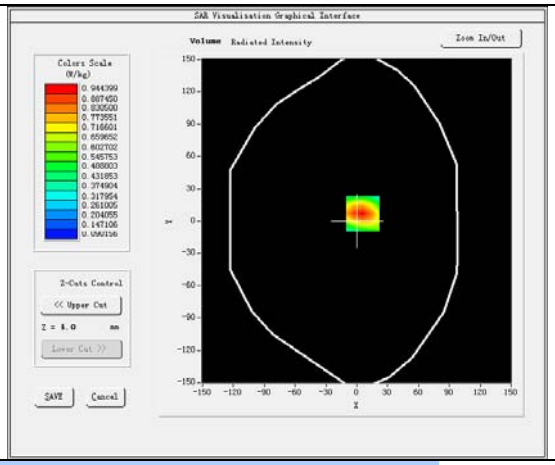


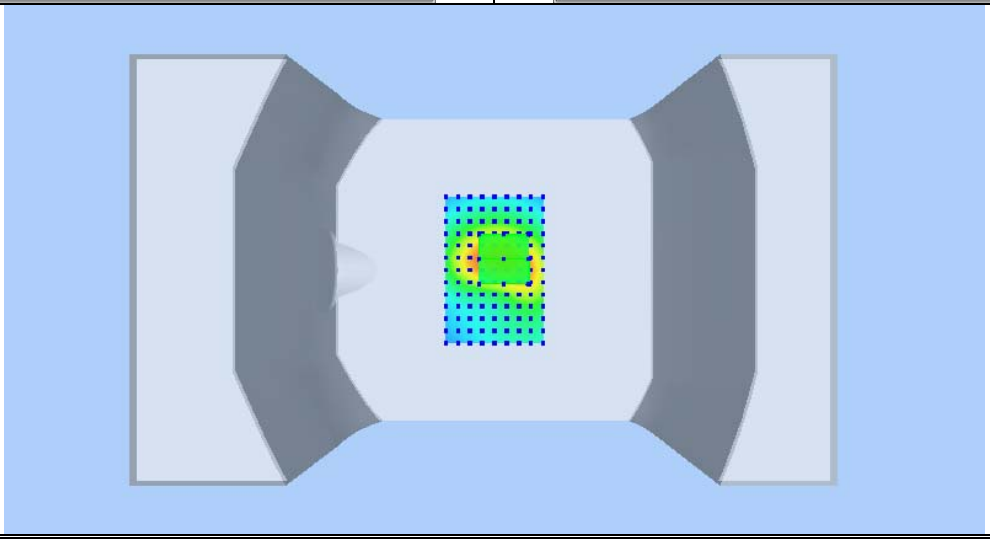


Plot 14: LTE BAND 4, Low channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1720.0000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.21
SAR 10g (W/Kg)	0.548960
SAR 1g (W/Kg)	0.889187
SURFACE SAR	**VOLUME SAR**

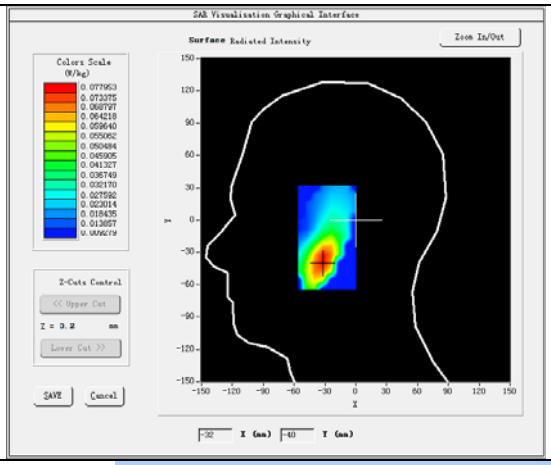


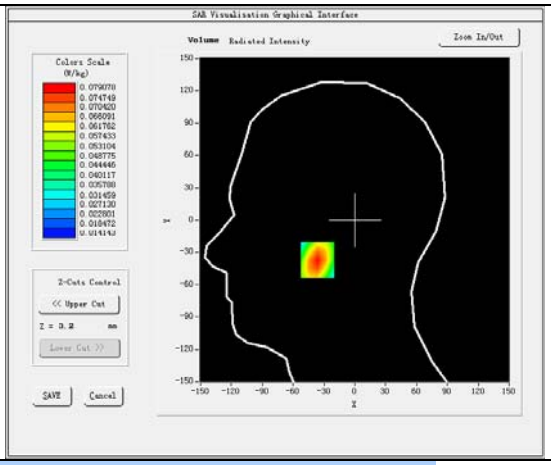


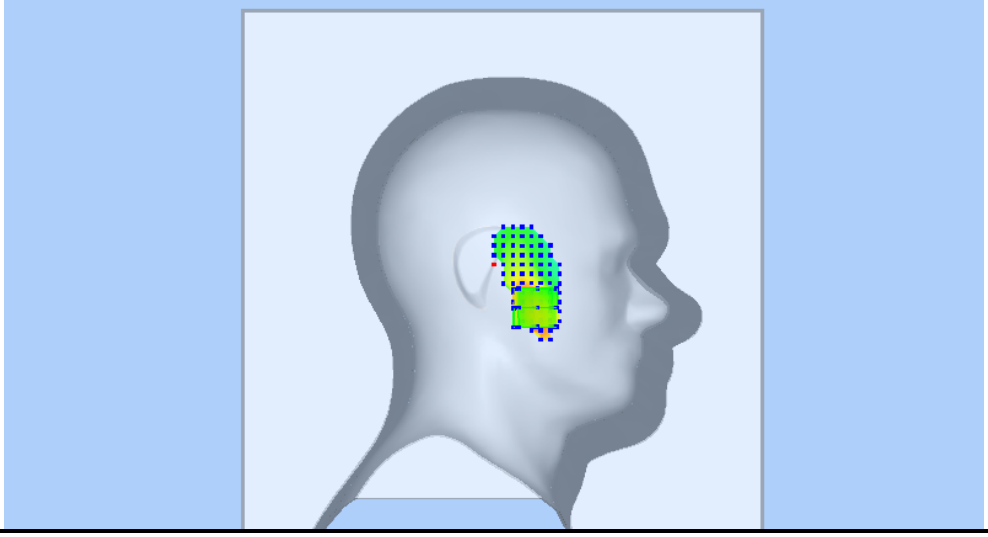


Plot 15:LTE BAND 5, Low channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL835
Frequency (MHz)	829.0000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Bandwidth(MHz)	10
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.70
SAR 10g (W/Kg)	0.051460
SAR 1g (W/Kg)	0.075218
SURFACE SAR	**VOLUME SAR**

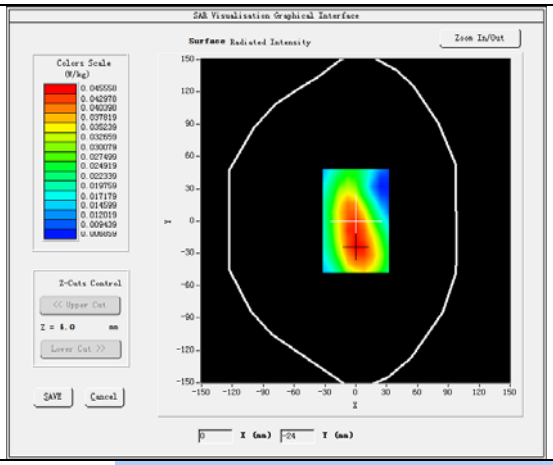


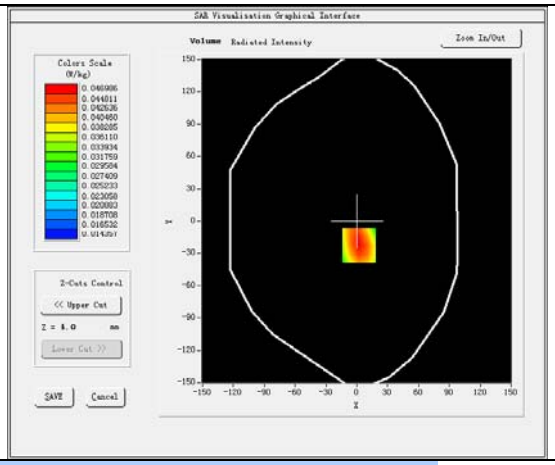


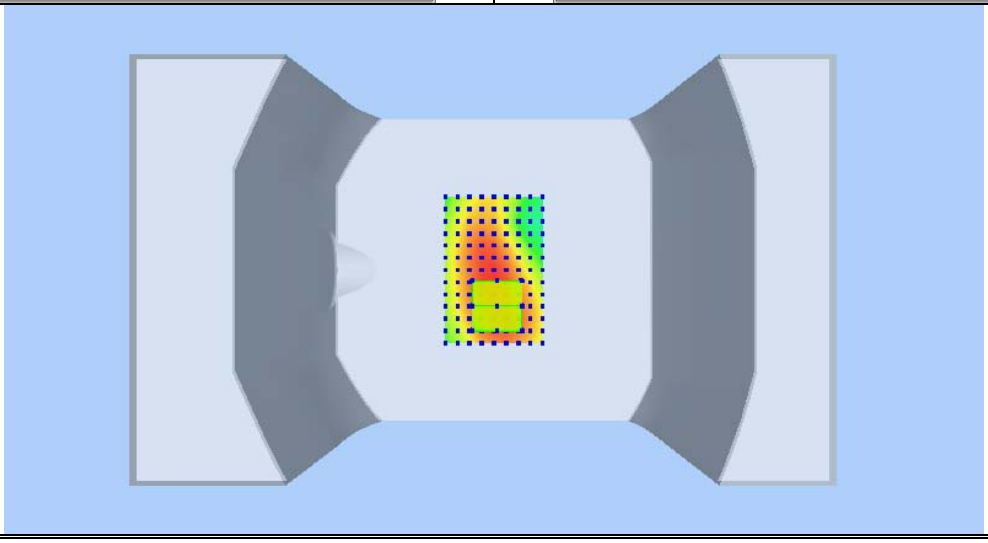


Plot 16: LTE BAND 5, Low channel (Body-worn/ Hotspot, Front Side)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL835
Frequency (MHz)	829.0000
Relative permittivity (real part)	41.58
Conductivity (S/m)	0.92
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.48
Bandwidth(MHz)	10
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.93
SAR 10g (W/Kg)	0.033638
SAR 1g (W/Kg)	0.045296
SURFACE SAR	**VOLUME SAR**

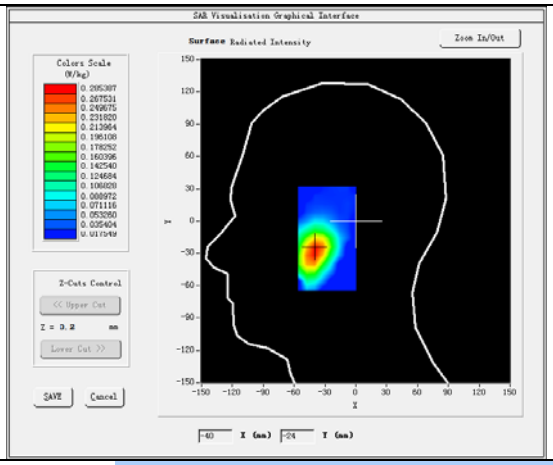


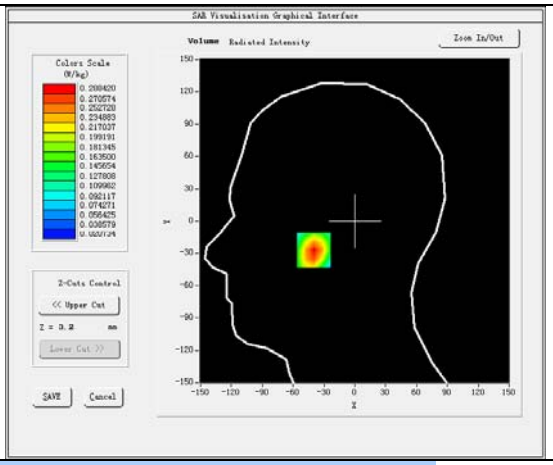


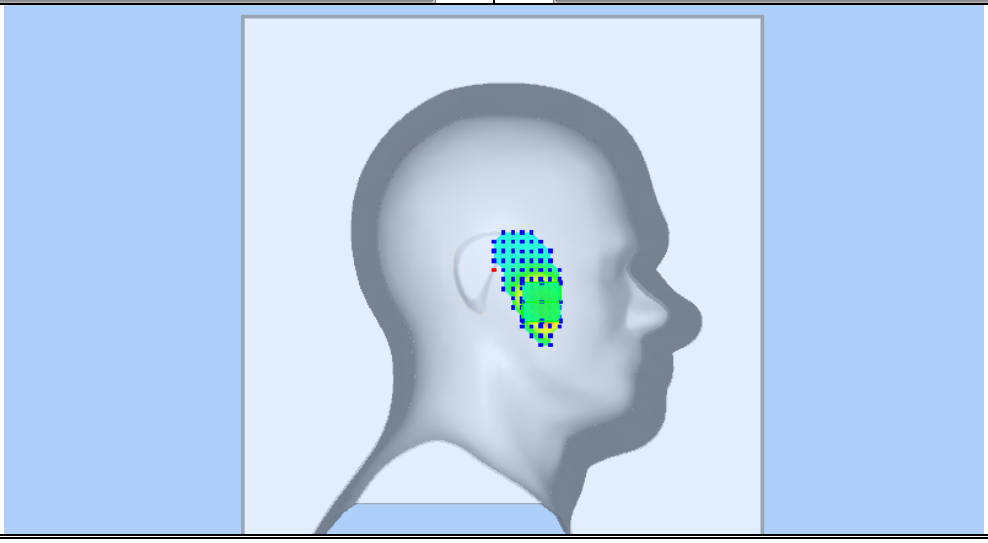


Plot 17:LTE BAND 7, Low channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-10

Medium(liquid type)	HL2450
Frequency (MHz)	2510.0000
Relative permittivity (real part)	39.16
Conductivity (S/m)	1.84
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.73
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-10.83
SAR 10g (W/Kg)	0.147611
SAR 1g (W/Kg)	0.271419
SURFACE SAR	**VOLUME SAR**

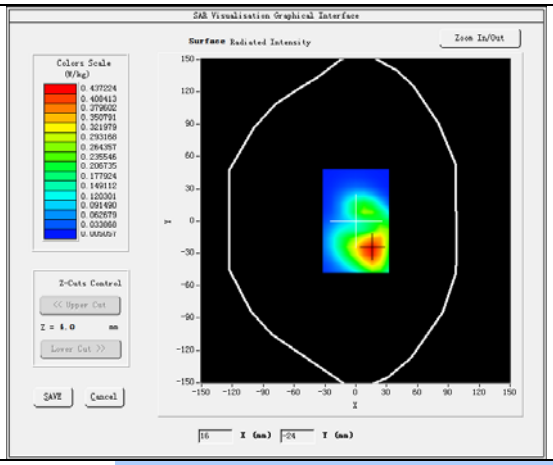


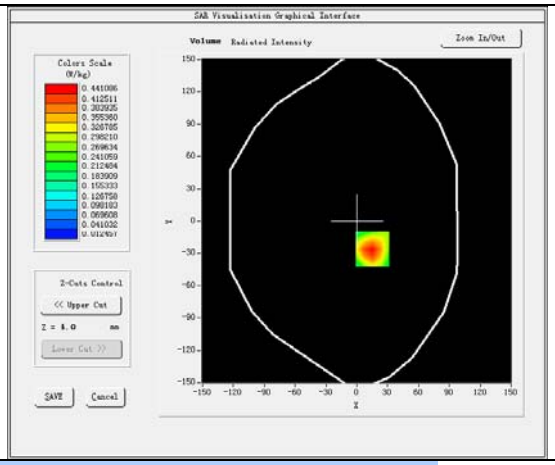


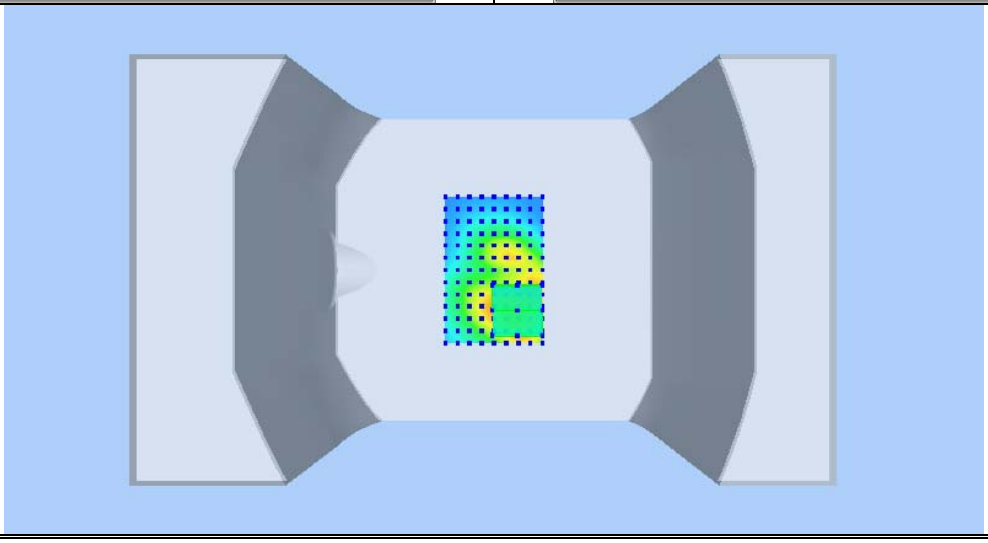


Plot 18: LTE BAND 7, Low channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-10

Medium(liquid type)	HL2450
Frequency (MHz)	2510.0000
Relative permittivity (real part)	39.16
Conductivity (S/m)	1.84
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.73
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.31
SAR 10g (W/Kg)	0.223069
SAR 1g (W/Kg)	0.416877
SURFACE SAR	**VOLUME SAR**

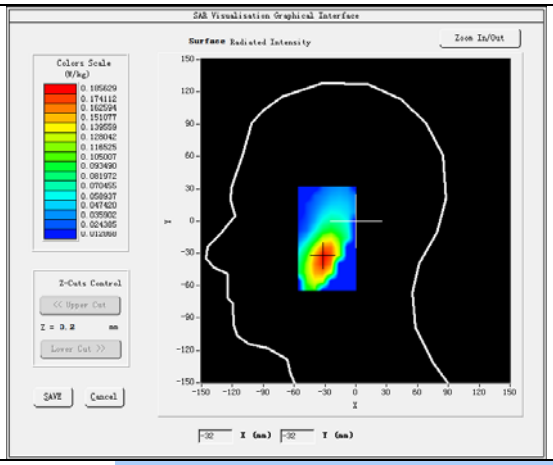


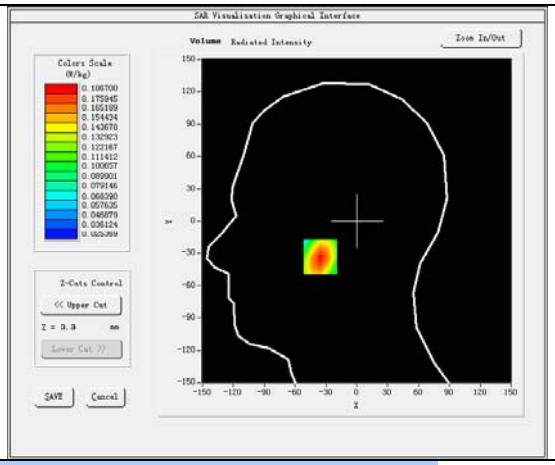


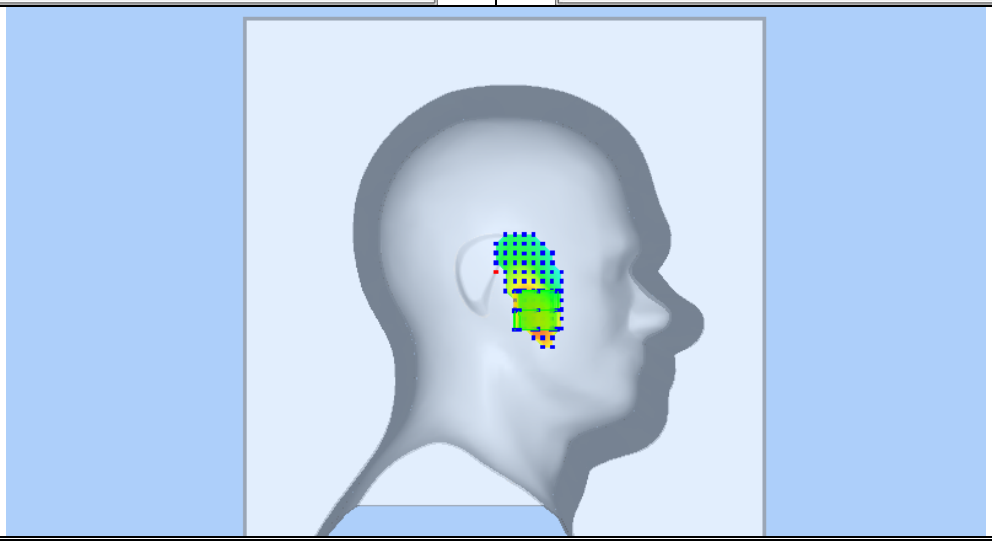


Plot 19:LTE BAND 12, High channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	711.0000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Bandwidth(MHz)	10
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.89
SAR 10g (W/Kg)	0.124709
SAR 1g (W/Kg)	0.181508
SURFACE SAR	**VOLUME SAR**

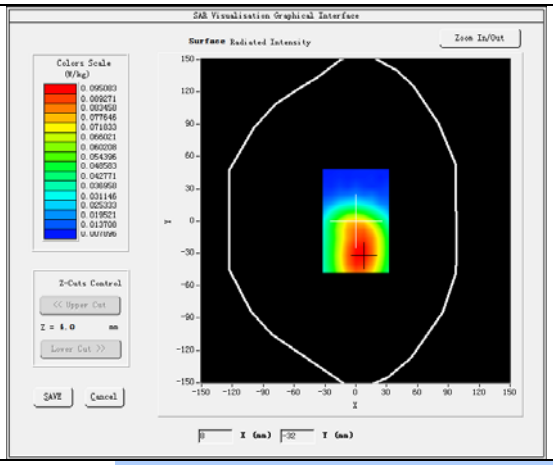


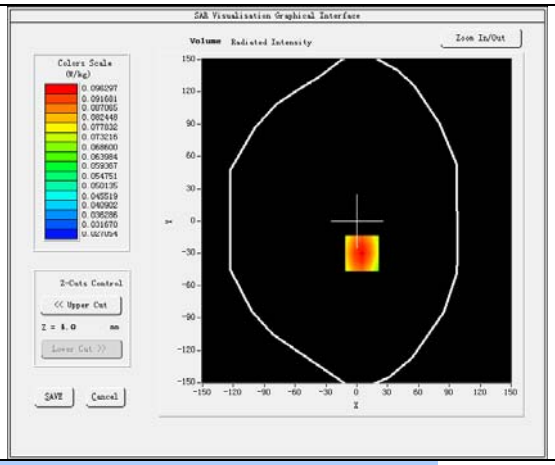


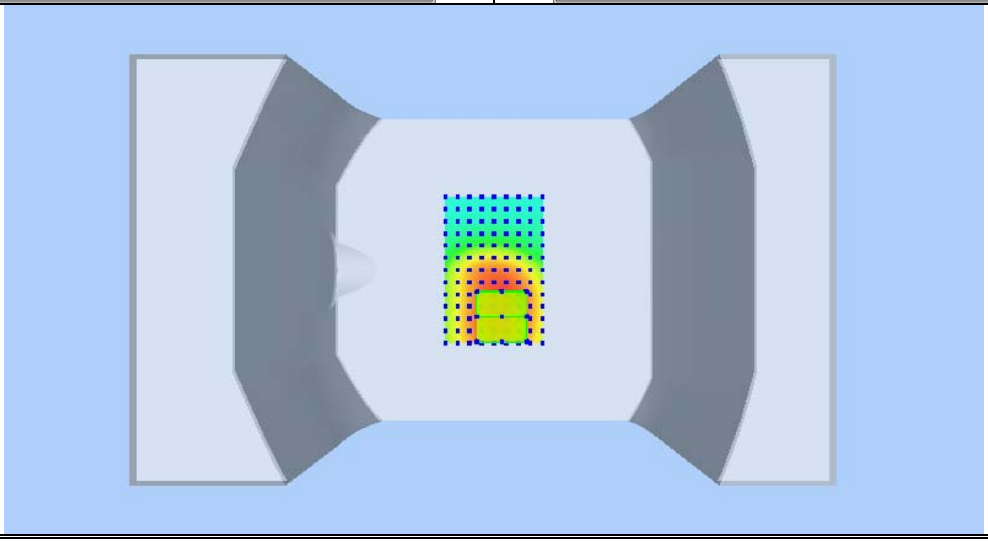


Plot 20: LTE BAND 12, High channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	711.0000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Bandwidth(MHz)	10
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.18
SAR 10g (W/Kg)	0.070433
SAR 1g (W/Kg)	0.094793
SURFACE SAR	**VOLUME SAR**

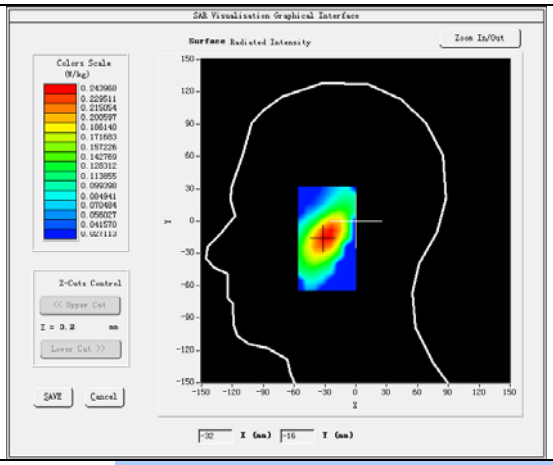


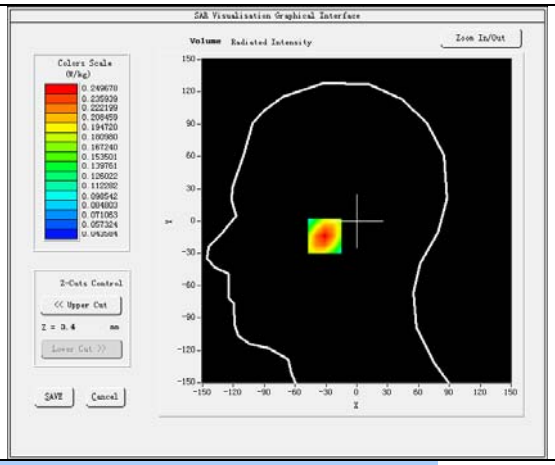


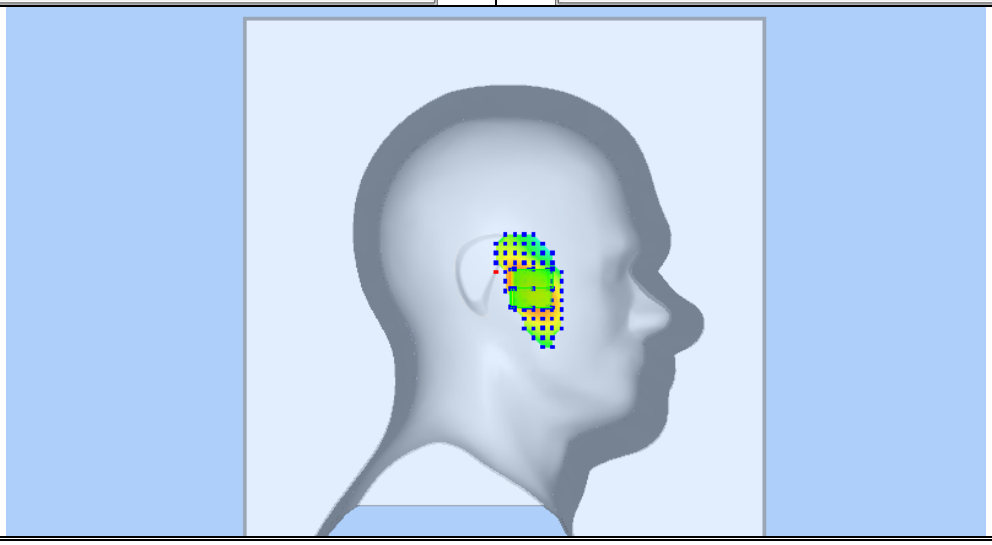


Plot 21:LTE BAND 13, Low channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	782.0000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Bandwidth(MHz)	10
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.66
SAR 10g (W/Kg)	0.164030
SAR 1g (W/Kg)	0.237568
SURFACE SAR	**VOLUME SAR**

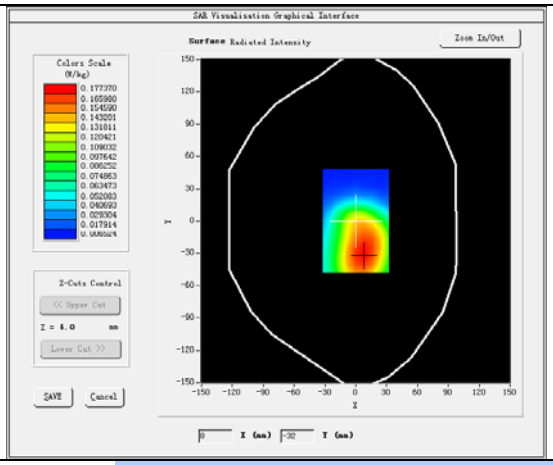


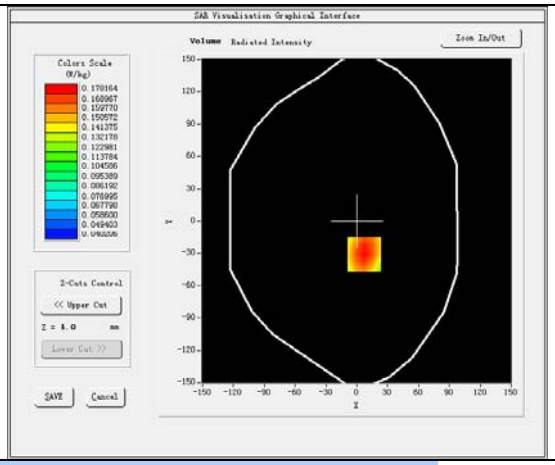


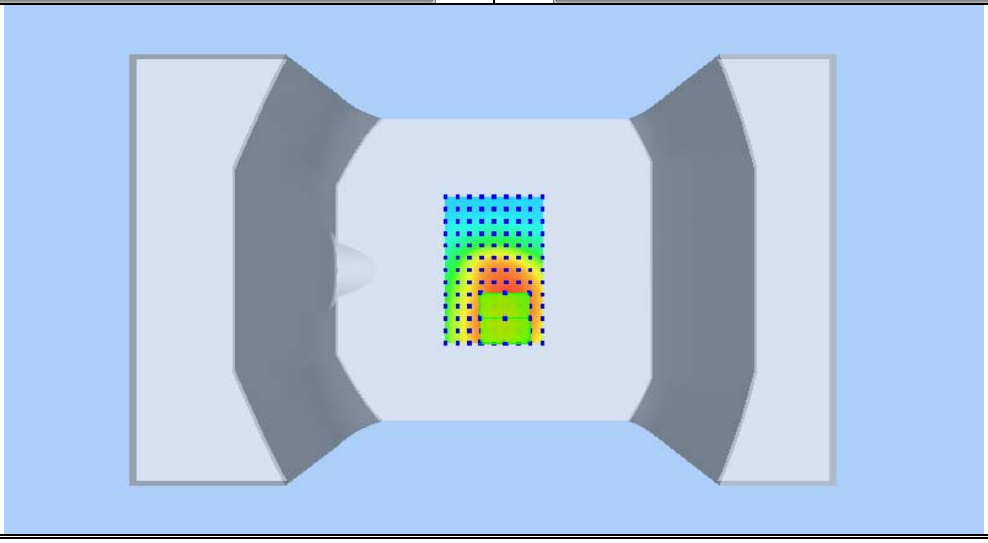


Plot 22: LTE BAND 13, Low channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	782.0000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Bandwidth(MHz)	10
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.02
SAR 10g (W/Kg)	0.124100
SAR 1g (W/Kg)	0.171440
SURFACE SAR	**VOLUME SAR**

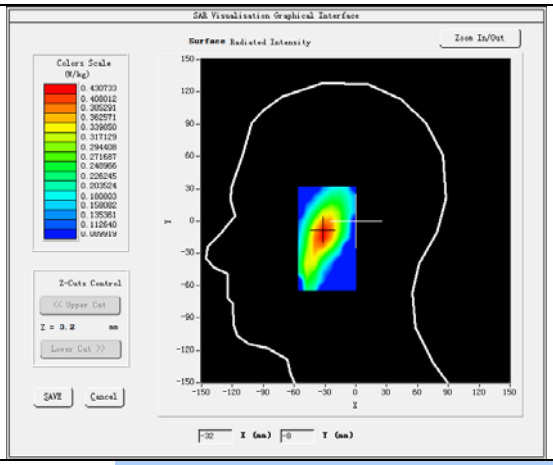


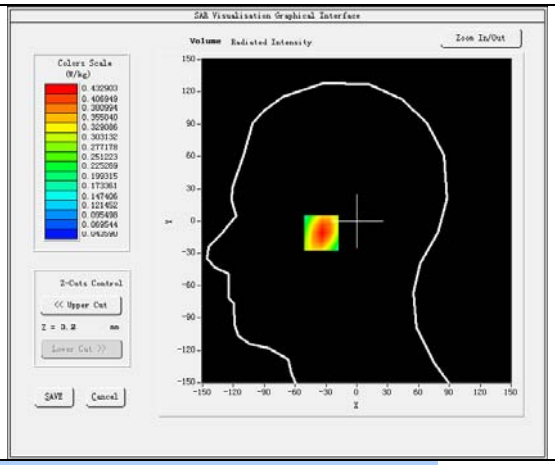


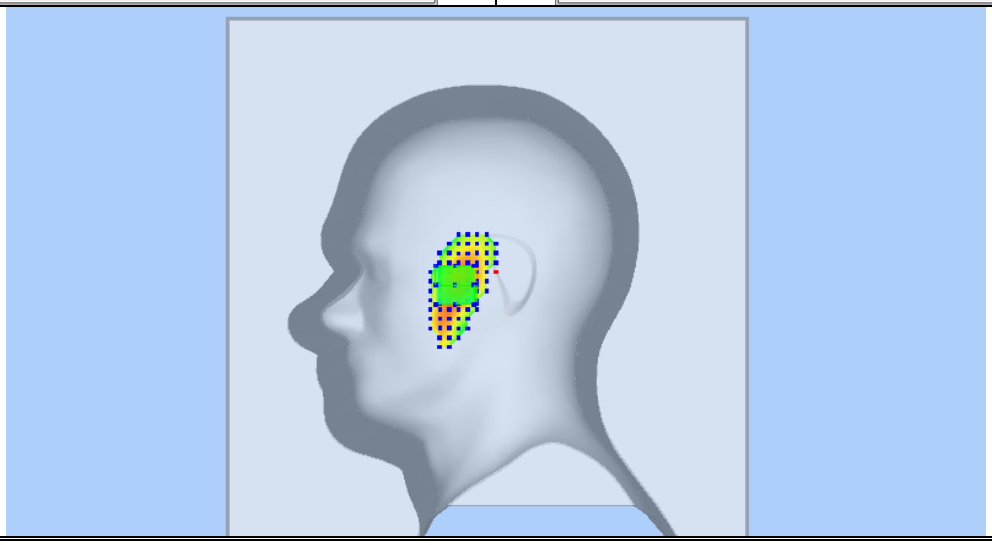


Plot 23:LTE BAND 66, Low channel (Right Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1720.0000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.01
SAR 10g (W/Kg)	0.269016
SAR 1g (W/Kg)	0.410306
SURFACE SAR	**VOLUME SAR**

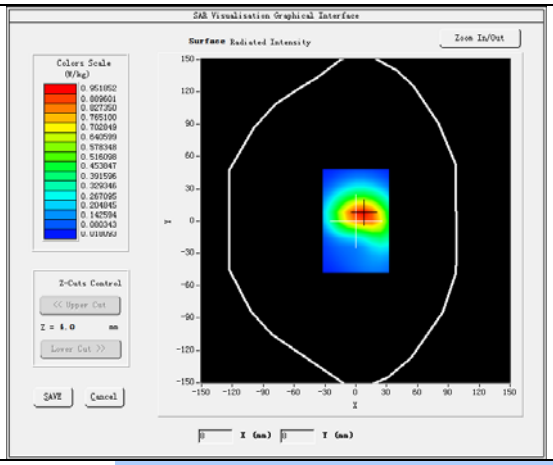


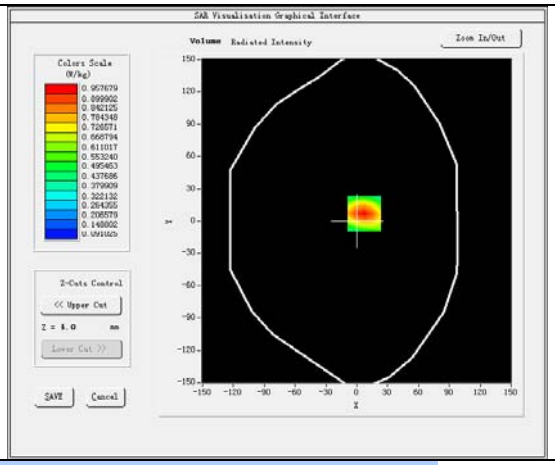


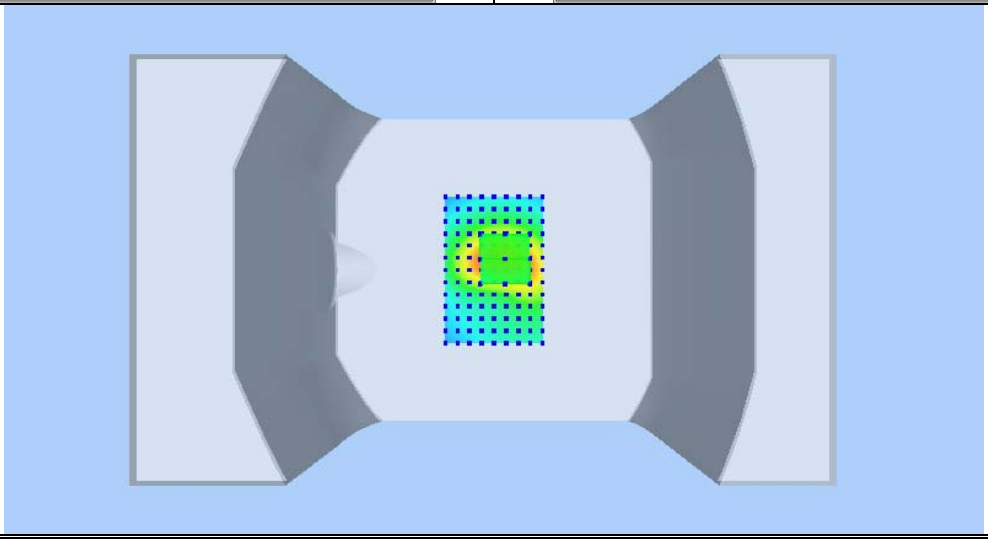


Plot 24: LTE BAND 66, Low channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-16

Medium(liquid type)	HL1800
Frequency (MHz)	1720.0000
Relative permittivity (real part)	39.35
Conductivity (S/m)	1.40
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.65
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	0.11
SAR 10g (W/Kg)	0.560861
SAR 1g (W/Kg)	0.900722
SURFACE SAR	**VOLUME SAR**

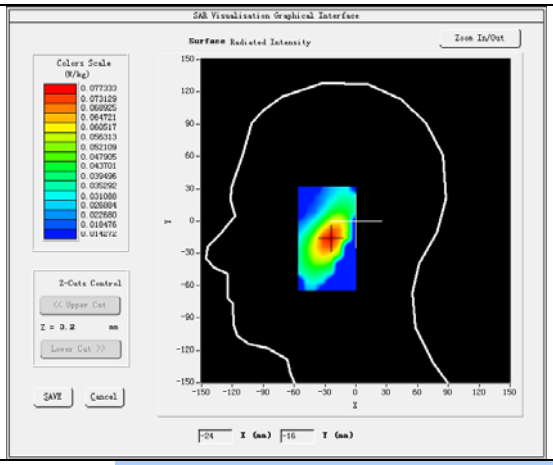


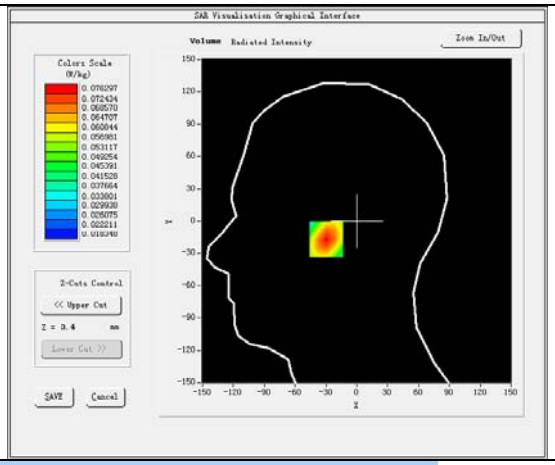


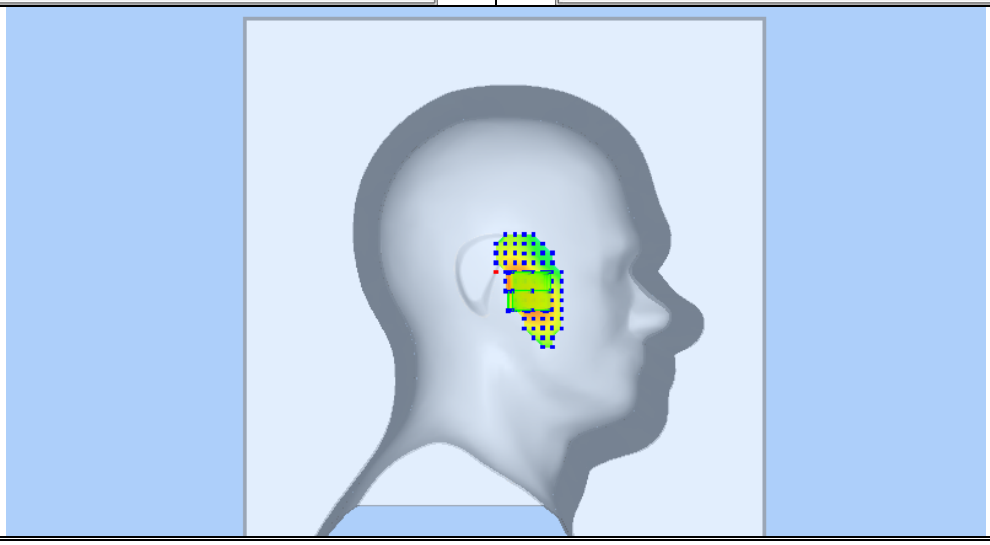


Plot 25:LTE BAND 71, Middle channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	673.0000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.15
SAR 10g (W/Kg)	0.053936
SAR 1g (W/Kg)	0.074512
SURFACE SAR	**VOLUME SAR**

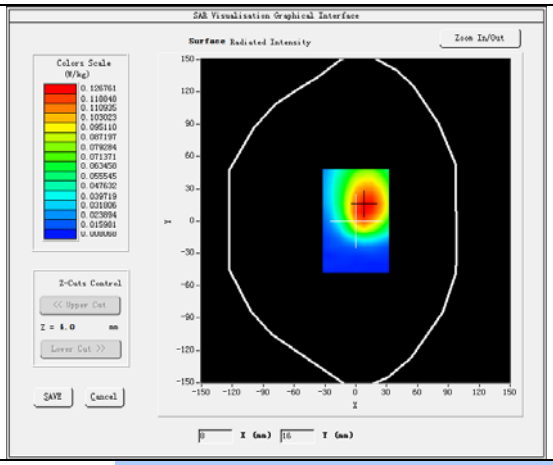


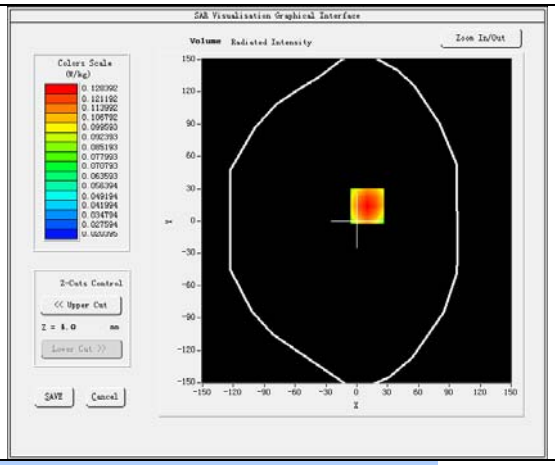


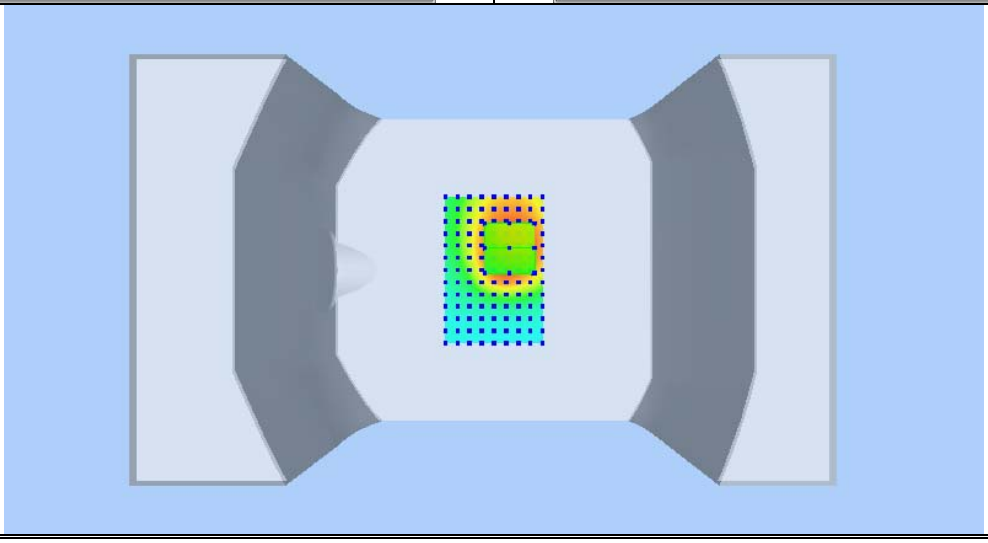


Plot 26: LTE BAND 71, Middle channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-17

Medium(liquid type)	HL750
Frequency (MHz)	673.0000
Relative permittivity (real part)	41.91
Conductivity (S/m)	0.90
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	2.60
Bandwidth(MHz)	20
RB Allocation	1
RB Offset	49
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.82
SAR 10g (W/Kg)	0.090637
SAR 1g (W/Kg)	0.126515
SURFACE SAR	**VOLUME SAR**

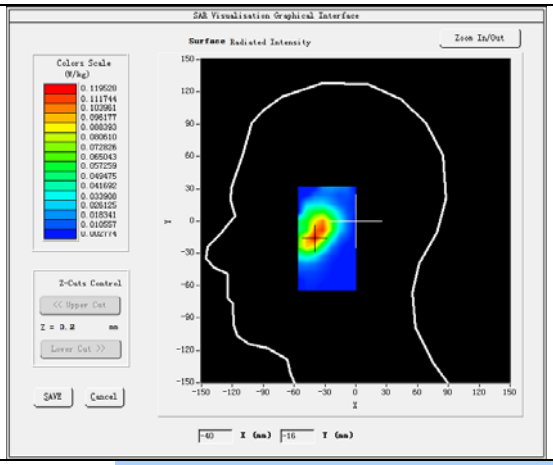


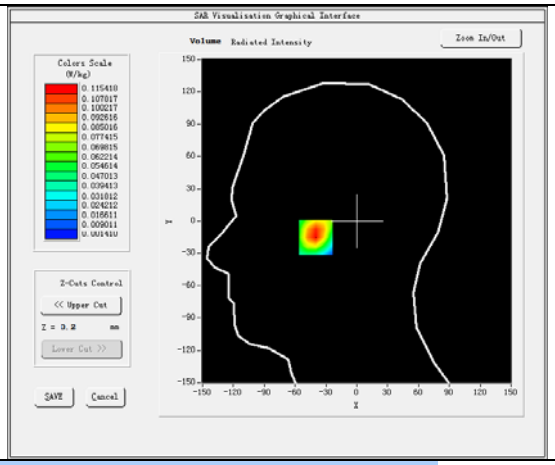


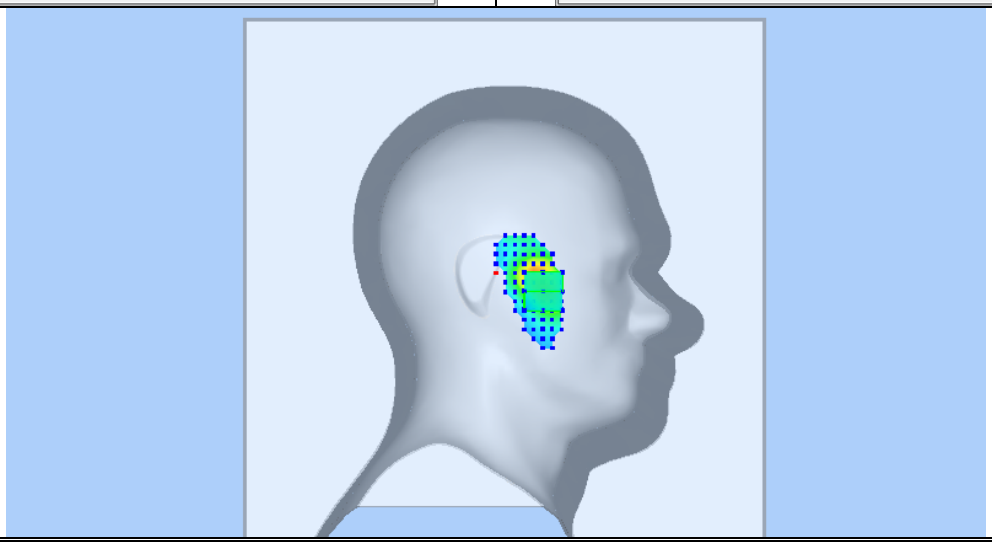


Plot 27:2.4G Wi-Fi, Low channel (Left Head Cheek)
Product Description: Wonder Phone
Test Date: 2024-07-10

Medium(liquid type)	HL2450
Frequency (MHz)	2412.0000
Relative permittivity (real part)	39.16
Conductivity (S/m)	1.84
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	3.03
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-2.64
SAR 10g (W/Kg)	0.054948
SAR 1g (W/Kg)	0.109925
SURFACE SAR	**VOLUME SAR**

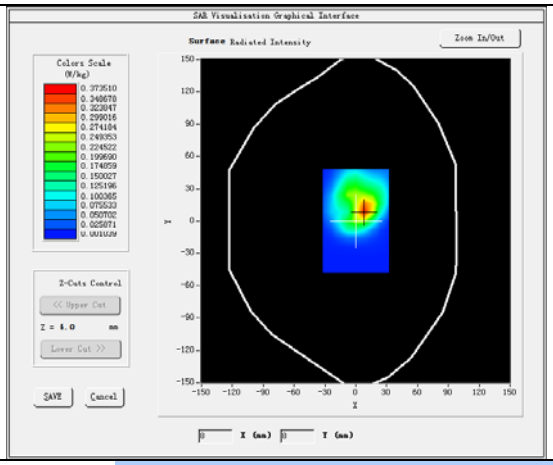


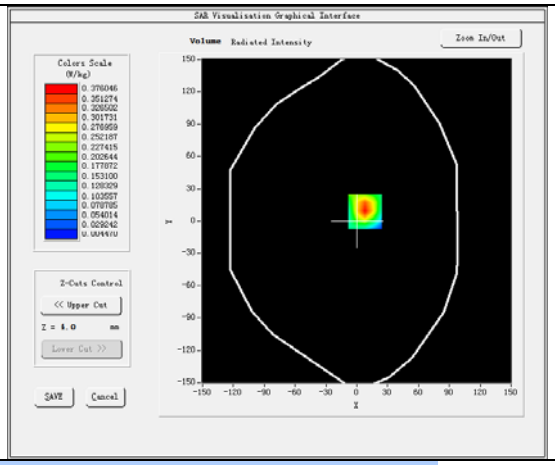


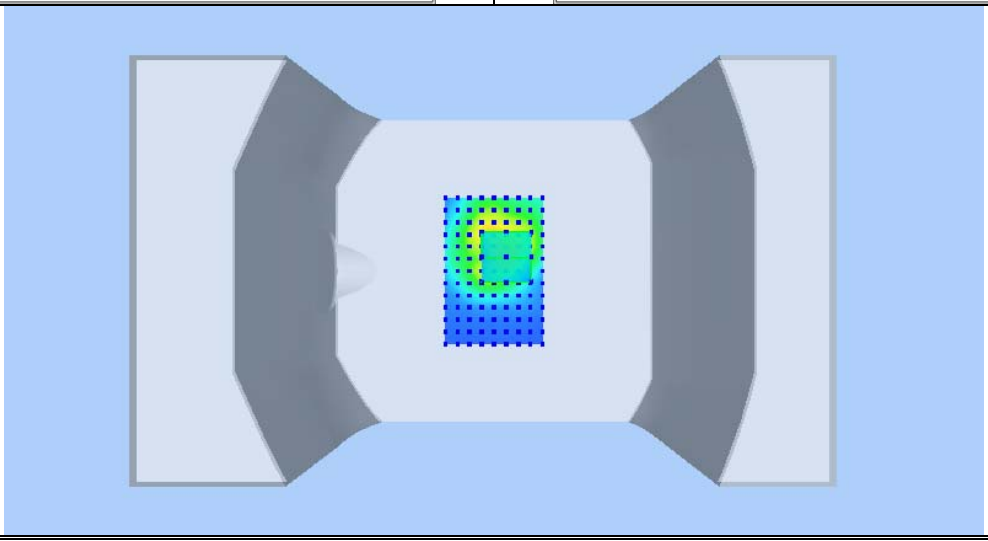


Plot 28: 2.4G Wi-Fi, Low channel (Body-worn/ Hotspot, Back Side)
Product Description: Wonder Phone
Test Date: 2024-07-10

Medium(liquid type)	HL2450
Frequency (MHz)	2412.0000
Relative permittivity (real part)	39.16
Conductivity (S/m)	1.84
Signal	Crest factor: 1.0
E-Field Probe	2523-EPGO-417
Conversion Factor	3.03
Area Scan	dx=8mm dy=8mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Variation (%)	-0.56
SAR 10g (W/Kg)	0.164796
SAR 1g (W/Kg)	0.349654
SURFACE SAR	**VOLUME SAR**







15 Calibration Reports-Probe and Dipole

COMOSAR E-Field Probe Calibration Report

Ref : ACR.214.15.23.BES.B

Cancel and replace the report ACR.214.15.23.BES.A

WALTEK TESTING GROUP CO., LTD
NO,77, HOUJIE SECTION, GUANTAI ROAD, HOUJIE TOWN
DONGGUAN GUANGDONG 518105, CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: 2523-EPGO-417

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE

Calibration date: 07/31/2023

Accreditations #2-6789
Scope available on www.cofrac.fr

The use of the Cofrac brand and the accreditation references is prohibited from any reproduction.

Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.214.15.23.BES.B

	Name	*Function*	*Date*	*Signature*
Prepared by :	Cyrille ONNEE	Measurement Responsible	8/16/2023	
Checked & approved by:	Jérôme Luc	Technical Manager	8/16/2023	
Authorized by:	Yann Toutain	Laboratory Director	8/30/2023	Yann TOUTAIN

Yann Toutain ID Signature numérique de Yann Toutain ID Date : 2023.08.30 14:35:50 +02'00'

	Customer Name
Distribution :	WALTEK TESTING GROUP CO., LTD

Issue	*Name*	*Date*	*Modifications*
A	Cyrille ONNEE	8/16/2023	Initial release
B	Cyrille ONNEE	8/30/2023	Customer Name change

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