

FCC SAR Compliance Test Report

For

D-Link Corporation

14420 Myford Road Suite 100, Irvine, California 92606, United States

Model: DWR-932W, DWR-932W/X, DWR-932W/XX, DWR-932W/XXX (X CAN BE 0-9, A-Z)

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Modified History

REV.	Modification Description	Issued Date	Remark
REV.1.0	Initial Test Report Relesse	24 April 2025	Li Huaibi

1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. Shenzhen Timeway Testing Laboratories does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report is not to be reproduced or published in full without the prior written permission.

1.2 Application details

Date of receipt of test item: 2025-03-04
Start of test: 2025-03-04
End of test: 2025-04-23

1.3 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for DWR-932W is as below:

Band	Position Test Points	MAX Reported SAR _{1g} (W/kg)
UMTS Band 2	Body & Hotspot 0mm	0.600
UMTS Band 4	Body & Hotspot 0mm	0.864
UMTS Band 5	Body & Hotspot 0mm	0.524
LTE Band 2	Body & Hotspot 0mm	0.510
LTE Band 4	Body & Hotspot 0mm	0.794
LTE Band 4	Body & Hotspot 0mm	0.524
LTE Band 5	Body & Hotspot 0mm	0.470
LTE Band 7	Body & Hotspot 0mm	0.786
LTE Band 12	Body & Hotspot 0mm	0.324
LTE Band 41(5M)	Body & Hotspot 0mm	0.336
LTE Band 41(10M)	Body & Hotspot 0mm	0.372
LTE Band 41(15M)	Body & Hotspot 0mm	0.363
LTE Band 41(20M)	Body & Hotspot 0mm	0.380
Wi-Fi 2.4G	Body & Hotspot 0mm	0.421
Maximum Max. SAR Level(s) Measured: (Limit: 1.6W/Kg):	UMTS Band 4	0.864W/kg1gBodyTissue
	Wi-Fi 2.4G	0.421W/kg1gBodyTissue
The highest simultaneous SAR :		1.285W/kg1gBodyTissue

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits of 1.6 W/Kg as averaged over any 1g tissue according to the FCC rule the ANSI/IEEE C95.1:2005, the NCRP Report Number 86 for uncontrolled environment, according to the Industry Canada Radio Standards Specification RSS-102 for General Population/Uncontrolled exposure, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

1.4 EUT Information

Device Information:	
Product Type:	4G LTE AX300 Wi-Fi 6 MOBILE HOTSPOT
Model:	DWR-932W, DWR-932W/X, DWR-932W/XX, DWR-932W/XXX (X CAN BE 0-9, A-Z)
Trade Name:	D-Link
Device Type:	Portable device
Exposure Category:	uncontrolled environment / general population
Production Unit or Identical Prototype:	Production Unit
Antenna Type :	FPC Antenna
Device Operating Configurations:	
Supporting Mode(s) :	UMTS Band 2, UMTS Band 4, UMTS Band 5 LTE Band 2/ LTE Band4/LTE Band5/ LTE Band7 LTE Band 12/LTE Band41 Wi-Fi
Modulation:	WCDMA: QPSK HSDPA/HSUPA: QPSK /16QAM LTE: QPSK/16QAM
Device Class :	Class B, No DTM Mode

Operating Frequency Range(s)	Band	TX(MHz)	RX(MHz)
	UMTS Band 2	1850~1910	1930~1990
	UMTS Band 4	1710~1755	2110~2155
	UMTS Band 5	824~849	869~894
	LTE Band 2	1850~1910	1930~1990
	LTE Band 4	1710~1755	2110~2155
	LTE Band 5	824~849	869~894
	LTE Band 7	2500~2570	2620~2690
	LTE Band 12	699-716	729-746
	LTE Band 41	2496-2690	2496-2690
	Wi-Fi (2.4G)	2412-2462	
Antenna gain:	WCDMA Band 5/LTE B5: -0.61dbi WCDMA B2/LTE B2: 2.59dbi WCDMA B4/LTE B4: 1.62dbi LTE B7/ LTE B41: 3.88dbi LTE B12: -1.06dbi		
Power Source:	Rechargeable Li-ion Polymer Battery: 675465ART Rated Voltage: 3.7V Limited charge voltage:4.2V Rated Capacity: 3000mAh/11.1Wh		

Note:1:The test results of this test report relate exclusively to the test item specified in this test report. World Standardization Certification & Testing Group (Shenzhen) Co.,Ltd does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report is not to be reproduced or published in full without the prior written permission.

2: For NFC evaluation, it is not necessary to test NFC because its power is very low

2 Testing laboratory

Test Site	World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.
Test Location	Building A-B, Baoli'an Industrial Park, No. 58 Tangtuo Avenue, Shiyan Street, Bao'an District, Shenzhen, Guangdong, China
Telephone	+86-755-26996192
Fax	+86-755-86376605

3 ACCREDITATIONS

ANAB - Certificate Number: AT-3951

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (ANAB). Certification Number: AT-3951

4 Test Environment

	Required	Actual
Ambient temperature:	18 – 25 °C	22 ± 2 °C
Tissue Simulating liquid:	22 ± 2 °C	22 ± 2 °C
Relative humidity content:	30 – 70 %	30 – 70 %

5 Applicant and Manufacturer

Applicant/Client Name:	D-Link Corporation
Applicant Address:	14420 Myford Road Suite 100, Irvine, California 92606, United States
Manufacturer Name:	D-Link Corporation
Manufacturer Address:	14420 Myford Road Suite 100, Irvine, California 92606, United States

6 Test standard/s:

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	IEC/IEEE 62209-1528	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate in the Human Head from Wireless Communications Devices: Measurement Techniques
3	KDB447498 D01	General RF Exposure Guidance v06
4	KDB447498 D04	Interim General RF Exposure Guidance v01
5	KDB865664 D01	SAR measurement 100MHz to 6GHz v01r04
6	KDB865664 D02	RF Exposure Reporting v01r02
7	KDB941225 D01	3G SAR Procedures v03r01
8	KDB941225 D05	SAR for LTE Devices v02r05
9	KDB248227 D01	802.11 Wi-Fi SAR v02r02
10	KDB941225 D06	Hotspot Mode v02r01
11	KDB648474 D04	Handset SAR v01r03
12	KDB690783 D01	SAR Listings on Grant v01r03

6.1 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain/Body/Arms/Legs)	1.60 mW/g	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Heads/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

The limit applied in this test report is shown in bold letters

Notes:

* 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.

** The Spatial Average value of the SAR averaged over the whole body.

*** 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.

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

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.

6.2 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dW) absorbed by(dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ).

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

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

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

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 System

7.1 The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

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

The following figure shows the system.



The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

7.2 Robot

The COMOSAR system uses the high precision robots KR 6 R900 sixx type out of the newer series from Satimo SA (France). For the 6-axis controller COMOSAR system, the KUKA robot controller version from Satimo is used. The KR 6 R900 sixx robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

7.3 Probe

For the measurements the Specific Dosimetric E-Field Probe SSE 5 with following specifications is used



Figure 1 – MVG COMOSAR Dosimetric E field Dipole

- Dynamic range: 0.01-100 W/kg

Probe Length	330 mm
Length of Individual Dipoles	4.5 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	5 mm
Distance between dipoles / probe	2.7 mm

- Calibration range: 300MHz to 3GHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line: less than 30°



Figure 1 – MVG COMOSAR Dosimetric E field Probe

Dynamic range: 0.01-100 W/kg

Probe Length	330 mm
Length of Individual Dipoles	2 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	2.5 mm
Distance between dipoles / probe	1 mm

- Calibration range: 0.15GHz to 7.5GHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line: less than 30°

7.4 Measurement procedure

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface.
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16 mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors can not directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8 * 4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

Spatial Peak SAR Evaluation

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

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

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

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

SAR Averaged Methods

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

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

7.5 Description of interpolation/extrapolation scheme

- The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.
- An extrapolation is used to determine this highest local SAR values.
The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.
- The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR average over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

7.6 Phantom

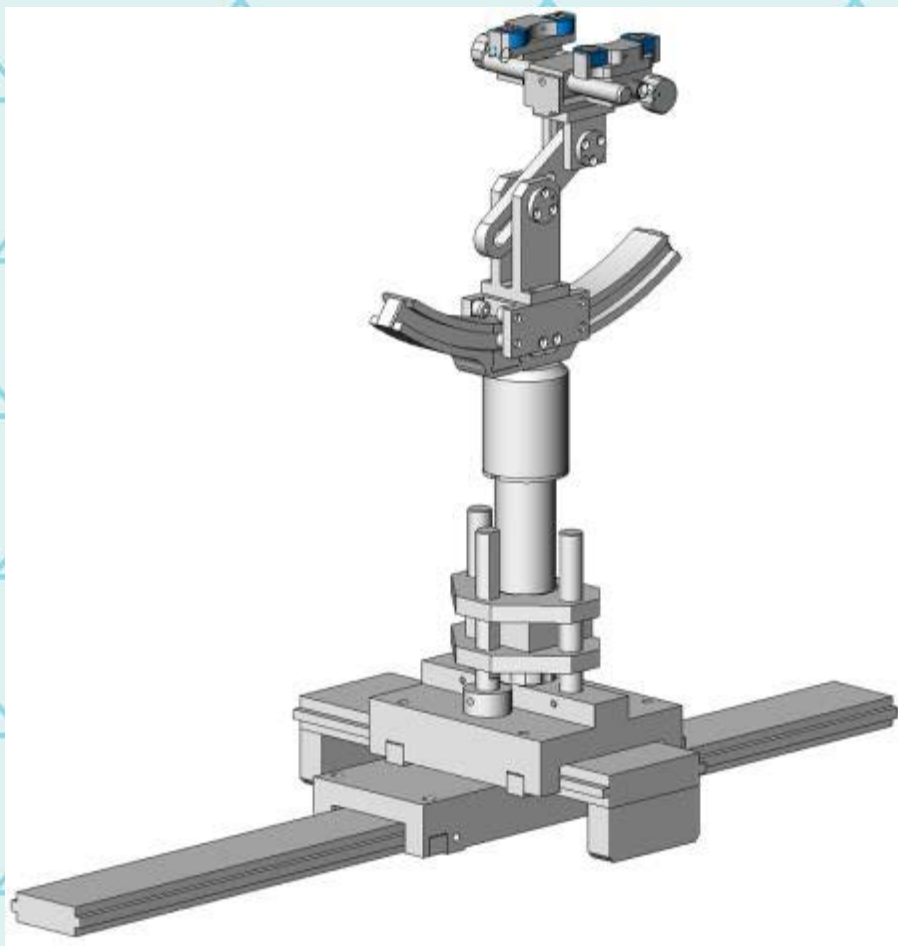
For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

7.7 Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



Device holder

System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

7.8 Video Positioning System

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



7.9 Tissue simulating liquids: dielectric properties

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

The following materials are used for producing the tissue-equivalent materials.

(Liquids used for tests are marked with ☒):

Ingredients(% of weight)	Frequency (MHz)					
frequency band	☒ 750	☒ 835	☒ 1800	☒ 1900	☒ 2450	☒ 2600
Tissue Type	Head	Head	Head	Head	Head	Head
Water	39.2	41.45	52.64	55.242	62.7	55.242
Salt (NaCl)	2.7	1.45	0.36	0.306	0.5	0.306
Sugar	57.0	56.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.0	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	47.0	44.542	0.0	44.452
Ingredients(% of weight)	Frequency (MHz)					
frequency band	☒ 750	☒ 835	☒ 1800	☒ 1900	☒ 2450	☒ 2600
Tissue Type	Body	Body	Body	Body	Body	Body
Water	50.30	52.4	69.91	69.91	73.2	64.493
Salt (NaCl)	1.60	1.40	0.13	0.13	0.04	0.024
Sugar	47.0	45.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	29.96	29.96	26.7	32.252

Salt: 99+% Pure Sodium Chloride

Sugar: 98+% Pure Sucrose

Water: De-ionized, 16MΩ+ resistivity

HEC: Hydroxyethyl Cellulose

DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Triton X-100(ultra pure): Polyethylene glycol mono [4-(1,1,3,3-tetramethylbutyl)phenyl]ether

7.10 Tissue simulating liquids: parameters

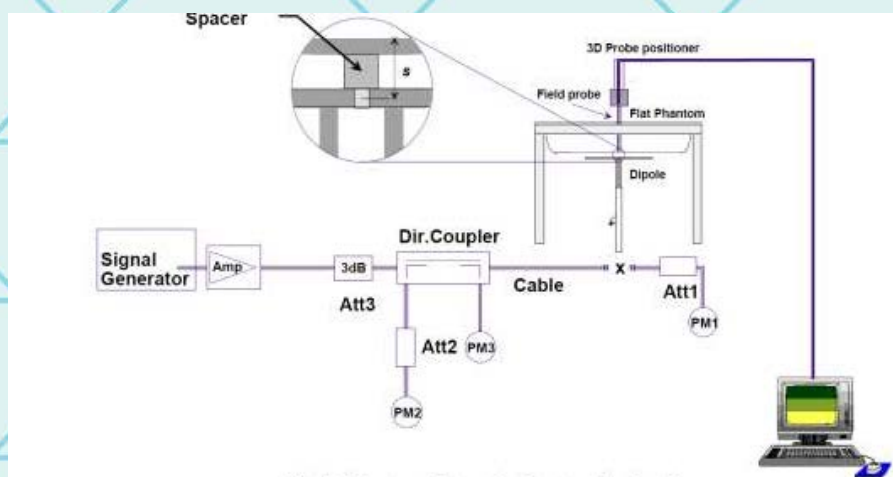
Used Target Frequency	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
	ϵ_r (+/-5%)	σ (S/m) (+/-5%)	ϵ_r	σ (S/m)		
750MHz Head	41.90 (39.04~43.99)	0.89 (0.85~0.93)	41.35	0.89	21.6°C	2025-03-17
835MHz Head	41.50 (39.43~43.57)	0.90 (0.86~0.95)	40.53	0.93	21.6°C	2025-03-17
1800MHz Head	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.31	1.37	21.6°C	2025-03-19
1900MHz Head	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.84	1.43	21.6°C	2025-03-21
2450MHz Head	39.20 (37.24~41.16)	1.80 (1.71~1.89)	40.27	1.82	21.6°C	2025-03-24
2600MHz Head	39.00 (37.05~40.95)	1.96 (1.86~2.05)	39.87	1.94	21.6°C	2025-03-28
ϵ_r = Relative permittivity, σ = Conductivity						

8 System Check

8.1 System check procedure

The System check is performed by using a System check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100 mW. To adjust this power a power meter is used. The power sensor is connected to the cable before the System check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the validation to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



8.2 System check results

The system Check is performed for verifying the accuracy of the complete measurement system and performance of the software. The following table shows System check results for all frequency bands and tissue liquids used during the tests (plot(s) see annex A).

System Check	Target SAR (1W) (+/-10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/kg)	10-g (W/kg)	1-g (W/kg)	10-g (W/kg)		
D750V2 Body	8.49 (7.65~9.33)	5.55 (5.00~6.10)	7.84	5.37	21.6°C	2025-03-17
D835V2 Body	9.82 (8.61~10.51)	6.22 (5.60~6.84)	10.15	6.45	21.6°C	2025-03-17
D1800V2 Body	38.40 (34.56~42.24)	20.10 (18.09~22.11)	41.56	21.72	21.6°C	2025-03-19
D1900V2 Body	39.70 (35.73~43.67)	20.50 (18.45~22.55)	39.33	20.94	21.6°C	2025-03-21
D2450V2 Body	52.40 (47.16~57.64)	24.00 (21.60~26.40)	54.33	23.33	21.6°C	2025-03-24
D2600V2 Body	55.30 (49.77~60.83)	24.60 (22.14~27.06)	53.18	23.43	21.6°C	2025-03-28

Note: 1. All SAR values are normalized to 1W forward power.

2. The actual forward power output to the dipole antenna is 20dbm(100mw), so the measured value differs ten times from the table

Note: 5G band system check USES standard waveguide, so the test results are standard en62209-2 table B2

9 SAR Test Test Configuration

9.1 GSM Test Configurations

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using CMU200 the power lever is set to “5” and “0” in SAR of GSM850 and GSM1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

9.2 UMTS Test Configuration

1) Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1”s for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPDCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the Headset or cannot be measured due to technical or equipment limitations must be clearly identified.

2) WCDMA

a. Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1”s. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

b. Body SAR Measurements

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1”s. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the Headset with 12.2 kbps RMC as the primary mode.

3) HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in

the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as "otherwise" in the applicable procedures; SAR measurement is required for the secondary mode.

Per KDB941225 D01, the 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures for the highest reported SAR body exposure configuration in 12.2 kbps RMC.

HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c and β_d gain factors for DPCCH and DPDCH were set according to the values in the below table, α_{hs} for HS-DPCCH is set automatically to the correct value when ΔACK , $\Delta NACK$, $\Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test ^o	β_c ^o	β_d ^o	β_d (SF) ^o	β_c / β_d ^o	β_{hs} (1) ^o	CM(dB)(2) ^o	MPR (dB) ^o
1 ^o	2/15 ^o	15/15 ^o	64 ^o	2/15 ^o	4/15 ^o	0.0 ^o	0 ^o
2 ^o	12/15(3) ^o	15/15(3) ^o	64 ^o	12/15(3) ^o	24/15 ^o	1.0 ^o	0 ^o
3 ^o	15/15 ^o	8/15 ^o	64 ^o	15/8 ^o	30/15 ^o	1.5 ^o	0.5 ^o
4 ^o	15/15 ^o	4/15 ^o	64 ^o	15/4 ^o	30/15 ^o	1.5 ^o	0.5 ^o

Note 1: ΔACK , $\Delta NACK$ and $\Delta CQI = 8$ $\alpha_{hs} = \beta_{hs} / \beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM=1 for $\beta_c / \beta_d = 12/15$, $\beta_{hs} / \beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 3: For subtest 2 the β_c / β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.:

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI's
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

4) HSUPA

SAR for body exposure configurations is measured according to the "Body SAR Measurements" procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

Per KDB941225 D01v03, the 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

9.3 LTE Test Configuration

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices. The CMW500 WideBand Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames (Maximum TTI)

1) Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2) MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

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
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

3) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of "NS_01" on the base station simulator.

4) LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

ii) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in i) are applied to measure the SAR for QPSK with 50% RB allocation.

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

iv) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

5) TDD LTE test configuration

According to KDB 941225 D05 SAR for LTE Devices v02r04, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

9.4 Wi-Fi Test Configuration

For the 802.11b/g SAR tests, a communication link is set up with the test mode software for Wi-Fi mode test. The Absolute Radio Frequency Channel Number(ARFCN) is allocated to 1, 6 and 11 respectively in the case of 2450 MHz. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. 802.11b/g operating modes are tested independently according to the service requirements in each frequency band. 802.11b/g modes are tested on channel 1, 6, 11; however, if output power reduction is necessary for channels 1 and/or 11 to meet restricted band requirements the highest output channel closest to each of these channels must be tested instead.

SAR is not required for 802.11g/n channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels.

Mode	Band	GHz	Channel	“Default Test Channels”	
				802.11b	802.11g
802.11b/g	2.4 GHz	2412	1#	√	△
		2437	6	√	△
		2462	11#	√	△

Notes:

√ = “default test channels”

△ = possible 802.11g channels with maximum average output $\frac{1}{4}$ dB the “default test channels”

= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

802.11 Test Channels per FCC Requirements

9.5 WiFi 2.4G SAR Test Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions.

A) 802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1) When the reported SAR of the highest measured maximum output power channel (section 3.1 of of KDB 248227D01v02) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2) When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

B) 2.4GHz 802.11g/n OFDM SAR Test Exclusion Requirements

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3 of of KDB 248227D01v02r01). SAR is not required for the following 2.4 GHz OFDM conditions.

- 1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
- 2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

C) SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

10 Detailed Test Results

10.1 Conducted Power measurements

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

10.1.1 Conducted Power of WCDMA

Mode		Maximum Tune-up(dBm)	WCDMA Band 2		
			Conducted Power (dBm)		
			CH9262	CH9400	CH9538
RMC 12.2K		23.00	1852.4	1880.0	1907.6
HSDPA	Subtest-1	22.50	21.42	22.97	22.32
	Subtest-2	23.50	21.76	21.97	22.10
	Subtest-3	22.50	23.04	22.65	20.86
	Subtest-4	22.00	22.01	21.77	21.79
HSUPA	Subtest-1	22.00	21.86	21.07	21.26
	Subtest-2	23.50	20.96	23.23	22.07
	Subtest-3	23.00	22.31	22.13	22.73
	Subtest-4	22.50	22.31	22.50	22.16
	Subtest-5	22.50	20.75	22.28	21.61
		22.50	21.41	22.02	22.30
Mode		Maximum Tune-up(dBm)	WCDMA Band 4		
			Conducted Power (dBm)		
			CH1312	CH1413	CH1513
RMC 12.2K		24.00	1712.4	1732.6	1752.6
HSDPA	Subtest-1	24.00	22.52	23.04	23.52
	Subtest-2	24.50	23.72	23.79	24.08
	Subtest-3	23.50	22.74	23.18	23.15
	Subtest-4	24.00	24.00	22.38	23.77
HSUPA	Subtest-1	24.00	23.29	22.41	23.63
	Subtest-2	23.50	23.37	22.80	22.36
	Subtest-3	23.00	22.84	22.97	22.37
	Subtest-4	24.00	23.51	23.04	21.96
	Subtest-5	23.00	22.82	21.77	22.79
		23.50	22.62	23.35	22.10
Mode		Maximum Tune-up(dBm)	WCDMA Band 5		
			Conducted Power (dBm)		
			CH4132	CH4183	CH4233
RMC 12.2K		23.50	826.4	836.6	846.6
HSDPA	Subtest-1	22.50	22.51	23.33	22.75
	Subtest-2	22.50	22.47	21.97	22.23
	Subtest-3	23.00	22.14	22.57	22.20
	Subtest-4	23.00	22.16	22.52	21.67
HSUPA	Subtest-1	23.50	22.33	21.80	23.01
	Subtest-2	22.50	22.06	22.18	22.13
	Subtest-3	23.00	21.98	22.82	22.34
	Subtest-4	22.50	22.24	21.40	22.09
	Subtest-5	23.50	23.02	21.54	22.78
		23.00	22.86	22.68	22.21

Per KDB 941225 D01, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/2$ dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

10.1.2 Conducted Power of LTE Band 2

LTE-FDD Band 2				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18607 1850.7MHz	18900 1880.0MHz	19193 1909.3MHz
1.4MHz	QPSK	1	0	23.50	23.39	23.09	23.21
			2	23.50	23.44	23.06	23.18
			5	23.50	23.41	23.06	23.11
		3	0	23.50	23.18	23.14	23.12
			2	23.50	23.14	23.10	23.17
			3	23.50	23.10	23.12	23.10
	16QAM	6	0	22.50	22.30	22.11	22.27
			0	23.50	23.31	22.31	22.57
			2	23.50	23.29	22.29	22.69
		3	5	23.50	23.31	22.24	22.63
			0	23.00	22.47	22.25	22.71
			2	23.00	22.48	22.20	22.69
3MHz	QPSK	1	3	23.00	22.47	22.25	22.63
			6	0	21.50	21.36	21.42
		8	0	23.50	23.11	23.19	23.27
			7	23.50	23.08	23.21	23.20
			14	23.50	23.19	23.11	23.26
		15	0	22.50	22.21	22.04	22.16
			4	22.50	22.24	22.10	22.17
			7	22.50	22.26	22.09	22.11
	16QAM	1	0	22.50	22.13	22.09	22.14
			0	23.50	23.38	22.30	22.70
			7	23.50	23.34	22.33	22.77
		8	14	23.50	23.31	22.25	22.67
			0	21.50	21.16	21.27	21.34
			4	21.50	21.22	21.30	21.27
		15	7	21.50	21.20	21.32	21.21
			0	21.50	21.34	21.25	21.33
5MHz	QPSK	1	0	23.50	23.12	23.19	23.19
			13	23.50	23.09	23.17	23.17
			24	23.50	23.11	23.17	23.12
		12	0	22.50	22.20	22.03	22.27
			6	22.50	22.26	22.12	22.09
			13	22.50	22.19	22.03	22.26

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16QAM	25	0	22.50	22.20	22.10	22.21
	1	0	23.00	22.76	21.89	22.24
		13	23.00	22.61	21.88	22.28
		24	23.00	22.62	21.95	22.26
	12	0	21.50	21.21	21.11	21.32
		6	21.50	21.22	21.14	21.35
		13	21.50	21.17	21.06	21.30
	25	0	21.50	21.36	21.29	21.32

LTE-FDD Band 2				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18650	18900	19150
					1855.0MHz	1880.0MHz	1905.0MHz
10MHz	QPSK	1	0	23.50	23.25	23.15	23.29
			25	23.50	23.22	23.10	23.28
			49	23.50	23.29	23.25	23.30
		25	0	22.50	22.17	22.16	22.32
			13	22.50	22.21	22.04	22.21
			25	22.50	22.16	22.17	22.26
	16QAM	1	0	23.50	23.44	22.27	22.47
			25	23.50	23.37	22.28	22.39
			49	23.50	23.40	22.26	22.41
		25	0	21.50	21.25	21.26	21.35
			13	21.50	21.28	21.28	21.25
			25	21.50	21.25	21.24	21.30
50	0	21.50	21.36	21.33	21.31		
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	18675	18900	19125
					1857.5MHz	1880.0MHz	1902.5MHz
15MHz	QPSK	1	0	23.50	23.30	23.18	23.41
			38	23.50	23.27	23.14	23.33
			74	23.50	23.20	23.19	23.34
		36	0	22.50	22.18	22.25	22.19
			18	22.50	22.20	22.13	22.26
			39	22.50	22.29	22.12	22.21
	16QAM	1	0	24.00	23.60	22.23	23.05
			38	23.50	23.37	22.24	23.02
			74	23.50	23.42	22.20	22.97
		36	0	21.50	21.44	21.45	21.44
			18	21.50	21.36	21.36	21.40
			39	21.50	21.30	21.43	21.33
75	0	21.50	21.44	21.30	21.44		
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	18700	18900	19100
					1860.0MHz	1880.0MHz	1900.0MHz
20MHz	QPSK	1	0	24.00	23.62	23.30	23.41
			50	24.00	23.53	23.26	23.50
			99	23.50	23.49	23.20	23.38
		50	0	22.50	22.26	22.24	22.18
			25	22.50	22.22	22.08	22.25
			50	22.50	22.25	22.25	22.15
	16QAM	100	0	22.50	22.30	22.17	22.40
			0	23.00	22.59	21.97	22.23
			50	22.50	22.40	21.92	22.19
		50	99	22.50	22.48	21.96	22.08
			0	21.50	21.48	21.26	21.39
			25	21.50	21.42	21.25	21.32
50	21.50	21.44	21.18	21.26			
100	0	21.50	21.37	21.31	21.36		

10.1.3 Conducted Power of LTE Band 4

LTE-FDD Band 4				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		19957 1710.7MHz	20175 1732.5MHz	20393 1754.3MHz
1.4MHz	QPSK	1	0	24.00	23.32	23.51	23.79
			2	24.00	23.32	23.61	23.74
			5	24.00	23.32	23.54	23.78
		3	0	23.50	23.26	23.47	23.48
			2	24.00	23.32	23.50	23.54
			3	24.00	23.26	23.55	23.49
	16QAM	1	0	23.00	22.34	22.51	22.66
			0	24.00	22.54	22.96	23.66
			2	24.00	22.50	22.93	23.75
		3	5	24.00	22.47	22.77	23.72
			0	23.50	22.44	22.88	23.09
			2	23.50	22.52	22.91	23.15
3MHz	QPSK	1	3	23.50	22.49	22.85	23.15
			6	22.00	21.67	21.77	22.00
		8	0	22.00	21.67	21.77	22.00
			0	24.00	23.31	23.47	23.69
			7	24.00	23.27	23.47	23.66
			14	24.00	23.22	23.46	23.69
	16QAM	8	0	23.00	22.35	22.50	22.56
			4	23.00	22.41	22.55	22.59
			7	23.00	22.30	22.50	22.55
		15	0	23.00	22.37	22.51	22.56
			0	24.00	23.63	23.20	22.99
			7	24.00	23.55	23.11	23.12
5MHz	QPSK	1	14	24.00	23.53	23.07	23.11
			0	22.00	21.34	21.83	21.72
			4	22.00	21.39	21.81	21.67
		8	7	22.00	21.28	21.81	21.69
			0	22.00	21.51	21.62	21.64
			15	22.00	21.51	21.62	21.64
	16QAM	1	0	22.00	21.51	21.62	21.64
			0	24.00	23.19	23.54	23.44
			13	24.00	23.18	23.60	23.34
		12	24	24.00	23.25	23.62	23.40
			0	23.00	22.42	22.45	22.54
			6	23.00	22.42	22.49	22.63
10MHz	QPSK	12	13	22.50	22.34	22.49	22.48
			0	23.00	22.30	22.51	22.52
			25	23.00	22.78	22.27	22.94
	16QAM	1	0	23.00	22.64	22.29	22.87
			13	23.00	22.62	22.33	22.92
			24	23.00	22.62	22.33	22.92
15MHz	QPSK	12	0	22.00	21.40	21.50	21.76
			6	22.00	21.41	21.42	21.71
			13	22.00	21.27	21.46	21.67
	16QAM	25	0	22.00	21.44	21.63	21.68
			0	22.00	21.44	21.63	21.68
			0	22.00	21.44	21.63	21.68

LTE-FDD Band 4				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20000 1715.0MHz	20175 1732.5MHz	20350 1750.0MHz
10MHz	QPSK	1	0	24.00	23.34	23.53	23.72
			25	24.00	23.26	23.60	23.76
			49	24.00	23.30	23.54	23.77
		25	0	23.00	22.36	22.52	22.52
			13	23.00	22.35	22.62	22.49
			25	23.00	22.34	22.50	22.64
	16QAM	1	0	24.00	23.65	22.64	22.92
			25	23.50	23.47	22.69	22.88
			49	23.50	23.49	22.74	22.83
		25	0	22.00	21.44	21.68	21.64
			13	22.00	21.34	21.61	21.71
			25	22.00	21.35	21.57	21.71
15MHz	QPSK	1	0	24.00	23.39	23.54	23.91
			38	24.00	23.34	23.56	23.81
			74	24.00	23.45	23.57	23.80
		36	0	23.00	22.31	22.64	22.52
			18	23.00	22.28	22.49	22.54
			39	23.00	22.33	22.50	22.67
	16QAM	75	0	23.00	22.44	22.51	22.71
			0	24.00	23.65	22.65	23.39
			38	23.50	23.50	22.61	23.26
		1	74	24.00	23.58	22.69	23.26
			0	22.00	21.40	21.76	21.72
			18	22.00	21.47	21.72	21.73
20MHz	QPSK	36	39	22.00	21.45	21.74	21.68
			75	0	22.00	21.56	21.65
		75	0	22.00	21.56	21.68	21.65
			0	24.00	23.52	23.52	23.94
			50	24.00	23.50	23.57	23.77
			99	24.00	23.62	23.56	23.79
	16QAM	50	0	23.00	22.47	22.66	22.66
			25	22.50	22.37	22.46	22.49
			50	23.00	22.45	22.60	22.60
		100	0	23.00	22.44	22.49	22.62
			0	23.00	22.17	22.81	22.70
			50	23.00	22.18	22.80	22.66
25MHz	QPSK	1	99	23.00	22.30	22.85	22.72
			0	22.00	21.58	21.63	21.73
			25	22.00	21.55	21.68	21.68
	16QAM	50	50	22.00	21.65	21.70	21.66
			0	22.00	21.53	21.58	21.72
			100	0	22.00	21.58	21.72

10.1.4 Conducted Power of LTE Band 5

LTE-FDD Band 5				Maximum Tune- up(dBm)	Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	RB offset		20407	20525	20643	
					824.7MHz	836.5MHz	848.3MHz	
1.4MHz	QPSK	1	0	24.00	23.68	23.52	23.84	
			2	24.00	23.70	23.63	23.94	
			5	24.00	23.70	23.56	23.92	
		3	0	24.00	23.60	23.77	23.66	
			2	24.00	23.48	23.72	23.84	
			3	24.00	23.51	23.72	23.73	
	16QAM	6	0	23.00	22.68	22.64	22.83	
			1	0	24.50	23.76	23.35	24.10
				2	24.00	23.70	23.33	23.99
		3		5	24.00	23.71	23.38	23.99
			0	0	23.50	22.86	22.85	23.44
				2	23.50	22.88	22.76	23.30
3	23.50	22.93		22.77	23.36			
6	0	22.50	21.65	21.66	22.08			
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	20415	20525	20635	
					825.5MHz	836.5MHz	847.5MHz	
3MHz	QPSK	1	0	24.00	23.43	23.58	23.90	
			7	24.00	23.47	23.61	23.89	
			14	24.00	23.51	23.65	24.00	
		8	0	23.00	22.74	22.70	22.83	
			4	23.00	22.72	22.74	22.63	
			7	23.00	22.61	22.66	22.75	
	16QAM	15	0	23.00	22.64	22.74	22.92	
			0	0	24.00	23.63	23.31	23.99
				7	24.00	23.55	23.35	23.91
		14		14	24.00	23.55	23.37	23.96
			8	0	22.50	21.52	22.02	21.91
				4	22.50	21.58	22.03	21.86
7	22.00	21.55		21.99	21.85			
15	0	22.00	21.68	21.95	21.90			

LTE-FDD Band 5				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20425 826.5MHz	20525 836.5MHz	20625 846.5MHz
5MHz	QPSK	1	0	24.00	23.41	23.68	23.78
			13	24.00	23.41	23.70	23.73
			24	24.00	23.51	23.79	23.68
		12	0	23.00	22.56	22.70	22.76
			6	23.00	22.58	22.74	22.86
			13	23.00	22.59	22.64	22.77
	16QAM	25	0	23.00	22.60	22.65	22.83
			0	23.00	22.92	22.35	22.85
			13	23.00	22.89	22.33	22.82
		12	24	23.00	22.88	22.48	22.79
			0	22.00	21.54	21.68	21.87
			6	22.00	21.62	21.71	21.88
10MHz	QPSK	1	13	22.00	21.55	21.68	21.88
			25	22.00	21.77	21.92	21.91
			0	22.00	20450	20525	20600
		25	0	23.00	829.0MHz	836.5MHz	844.0MHz
			13	23.00	23.55	23.67	23.88
			25	23.00	23.59	23.82	23.85
	16QAM	1	49	24.00	23.75	23.91	23.92
			0	23.00	22.58	22.71	22.87
			13	23.00	22.45	22.78	22.89
		25	25	23.00	22.69	22.71	22.82
			0	23.00	22.51	22.68	22.84
			0	23.00	22.51	22.68	22.84
	QPSK	50	0	24.00	23.69	22.65	22.82
			25	24.00	23.69	22.82	22.94
			49	24.00	23.86	22.86	22.89
	16QAM	1	0	22.00	21.62	21.76	21.88
			13	22.00	21.86	21.81	21.92
			25	22.00	21.58	21.80	21.90
	16QAM	25	0	22.00	21.92	21.93	21.87
			13	22.00	21.86	21.81	21.92
			25	22.00	21.58	21.80	21.90
		50	0	22.00	21.92	21.93	21.87

10.1.5 Conducted Power of LTE Band 7

LTE-FDD Band 7				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20775 2502.5MHz	21100 2535.0MHz	21425 2567.5MHz
5MHz	QPSK	1	0	23.50	22.89	23.18	23.05
			13	23.50	22.97	23.21	23.06
			24	23.50	23.11	23.16	23.16
		12	0	22.50	21.85	22.26	22.00
			6	22.50	21.87	22.20	21.98
			13	22.50	21.94	22.21	22.07
	16QAM	25	0	22.50	21.93	22.26	22.05
		1	0	23.00	22.36	22.51	22.47
			13	23.00	22.49	22.57	22.48
			24	23.00	22.52	22.50	22.54
		12	0	21.50	20.84	21.32	21.01
			6	21.50	20.84	21.29	20.98
			13	21.50	20.90	21.26	21.03
10MHz	QPSK	1	0	23.50	22.90	23.22	23.06
			25	23.50	22.99	23.17	22.94
			49	23.50	23.10	23.16	23.12
		25	0	22.50	21.92	22.27	21.96
			13	22.50	21.97	22.23	21.95
			25	22.50	22.03	22.26	22.01
		50	0	22.50	21.96	22.29	21.99
	16QAM	1	0	22.50	22.34	22.45	22.04
			25	22.50	22.44	22.37	21.91
			49	23.00	22.51	22.39	22.13
		25	0	21.50	20.93	21.25	20.95
			13	21.50	20.96	21.21	20.94
			25	21.50	21.03	21.23	20.98
		50	0	21.50	20.95	21.27	20.96

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20825	21100	21375
					2057.5MHz	2535.0MHz	2562.5MHz
15MHz	QPSK	1	0	23.50	22.89	23.19	23.07
			38	23.50	23.08	23.22	23.03
			74	23.50	23.13	23.08	23.08
		36	0	22.50	21.96	22.21	21.99
			18	22.50	21.99	22.22	21.92
			39	22.50	22.05	22.19	21.97
	16QAM	1	0	22.50	22.06	22.23	22.00
			38	22.50	22.25	22.48	22.19
			74	23.00	22.41	22.52	22.15
		36	0	21.50	21.01	21.32	20.99
			18	21.50	21.05	21.31	20.92
			39	21.50	21.09	21.27	20.97
20MHz	QPSK	1	0	21.50	21.04	21.24	21.06
			50	23.50	22.84	23.37	23.02
			99	23.50	23.03	23.41	23.03
		50	0	22.50	22.19	23.24	22.99
			25	22.50	22.03	22.30	22.05
			50	22.50	22.08	22.31	22.01
	16QAM	100	0	22.50	22.12	22.23	22.01
			0	22.50	22.04	22.27	22.00
			0	22.50	22.22	22.48	22.32
		50	0	22.50	22.28	22.50	22.28
			99	23.00	22.51	22.33	22.27
			0	21.50	21.05	21.27	21.05
25MHz	QPSK	50	25	21.50	21.10	21.26	21.02
			50	21.50	21.16	21.20	21.01
			0	21.50	21.02	21.22	20.98
	16QAM	100	0	21.50	21.02	21.22	20.98
			0	21.50	21.02	21.22	20.98
			0	21.50	21.02	21.22	20.98

10.1.6 Conducted Power of LTE Band 12

LTE-FDD Band 12				Maximum Tune- up(dBm)	Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	RB offset		23017	23095	23173	
					699.7MHz	707.5MHz	715.3 MHz	
1.4MHz	QPSK	1	0	24.00	23.46	23.42	23.61	
			2	24.00	23.47	23.42	23.68	
			5	24.00	23.49	23.48	23.66	
		3	0	24.00	23.36	23.64	23.56	
			2	24.00	23.40	23.54	23.58	
			3	23.50	23.43	23.49	23.45	
	16QAM	6	0	23.00	22.33	22.56	22.59	
			0	24.00	23.66	23.19	23.64	
			2	24.00	23.70	23.03	23.61	
		1	5	24.00	23.84	23.12	23.64	
			0	23.50	22.67	22.55	23.01	
			2	23.50	22.70	22.62	23.01	
		3	23.50	22.78	22.60	23.02		
		6	0	22.00	21.49	21.46	21.67	
		Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	23025	23095
700.5MHz	707.5MHz						714.5 MHz	
3MHz	QPSK	1	0	24.00	23.45	23.42	23.75	
			7	24.00	23.41	23.51	23.68	
			14	24.00	23.38	23.43	23.67	
		8	0	23.00	22.46	22.59	22.59	
			4	23.00	22.53	22.45	22.55	
			7	23.00	22.54	22.53	22.49	
	16QAM	15	0	23.00	22.53	22.45	22.64	
			0	24.00	23.52	23.08	23.68	
			7	24.00	23.48	23.05	23.65	
		1	14	24.00	23.50	23.10	23.70	
			8	0	22.00	21.28	21.76	21.53
				4	22.00	21.28	21.71	21.59
7	22.00	21.37		21.76	21.58			
15	0	22.00	21.51	21.57	21.63			

LTE-FDD Band 12				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		23035 701.5MHz	23095 707.5MHz	23155 713.5 MHz
5MHz	QPSK	1	0	24.00	23.35	23.42	23.57
			13	23.50	23.33	23.44	23.46
			24	24.00	23.44	23.54	23.46
		12	0	23.00	22.44	22.54	22.54
			6	23.00	22.38	22.41	22.52
			13	23.00	22.40	22.43	22.62
	16QAM	25	0	23.00	22.51	22.54	22.52
			0	23.00	22.57	22.19	22.59
			13	23.00	22.57	22.11	22.64
		1	24	23.00	22.67	22.32	22.58
			0	22.00	21.34	21.34	21.61
			12	21.50	21.38	21.40	21.48
		12	6	21.50	21.41	21.47	21.47
			13	21.50	21.41	21.47	21.47
			0	22.00	21.65	21.62	21.51
			25	22.00	21.65	21.62	21.51
10MHz	QPSK	1	0	24.00	23.32	23.35	23.71
			25	24.00	23.46	23.46	23.84
			49	24.00	23.54	23.53	23.78
		25	0	23.00	22.34	22.54	22.45
			13	23.00	22.52	22.46	22.46
			25	23.00	22.60	22.53	22.54
		50	0	23.00	22.56	22.54	22.56
			0	24.00	23.54	22.47	22.60
			25	24.00	23.68	22.54	22.62
		1	49	24.00	23.58	22.62	22.62
			0	22.00	21.29	21.61	21.55
			13	22.00	21.40	21.64	21.37
	16QAM	25	25	22.00	21.39	21.60	21.61
			0	22.00	21.37	21.57	21.63
			50	22.00	21.37	21.57	21.63
		50	0	22.00	21.37	21.57	21.63
			0	22.00	21.37	21.57	21.63
			50	22.00	21.37	21.57	21.63
		1	0	22.00	21.37	21.57	21.63
			0	22.00	21.37	21.57	21.63
			50	22.00	21.37	21.57	21.63
		25	0	22.00	21.37	21.57	21.63
			0	22.00	21.37	21.57	21.63
			50	22.00	21.37	21.57	21.63

10.1.7 Conducted Power of LTE Band 41

LTE-TDD Band 41				Maximum Tune- up(dBm)	Conducted Power(dBm)				
Bandwidth	Modulation	RB allocation	RB offset		39675 2498.5MHz	40160 2552.0MHz	40620 2593 MHz	41080 2639.5 MHz	41565 2687.5MHz
5MHz	QPSK	1	0	23.00	22.53	22.49	22.47	22.53	22.59
			13	23.00	22.55	22.56	22.56	22.57	22.59
			24	23.00	22.62	22.60	22.59	22.61	22.67
		12	0	22.00	21.66	21.67	21.67	21.63	21.59
			6	22.00	21.70	21.73	21.75	21.65	21.60
			13	22.00	21.71	21.65	21.63	21.60	21.55
	16QAM	25	0	22.00	21.63	21.62	21.61	21.59	21.58
			0	22.50	21.43	21.99	22.11	21.86	21.21
			13	22.50	21.38	21.59	22.02	21.37	21.23
		1	24	22.50	21.43	21.62	22.03	21.24	21.20
			0	21.00	20.68	20.77	20.81	20.73	20.67
			6	21.00	20.69	20.73	20.78	20.72	20.63
10MHz	QPSK	12	13	21.00	20.62	20.74	20.80	20.74	20.57
			25	21.00	20.92	20.96	21.00	20.97	20.96
		25	0	21.00	20.92	20.96	21.00	20.97	20.96
			0	22.50	21.63	21.68	21.76	21.67	21.54
			0	22.00	21.63	21.68	21.76	21.67	21.54
			25	22.00	21.54	21.64	21.66	21.67	21.67
	16QAM	50	0	22.00	21.63	21.68	21.76	21.67	21.54
			0	22.50	22.16	21.63	21.03	21.66	22.01
			25	22.50	22.20	21.99	20.93	21.53	22.25
		1	49	22.50	22.24	22.04	20.98	21.03	22.19
			0	21.00	20.72	20.78	20.79	20.71	20.69
			13	21.00	20.75	20.77	20.82	20.80	20.75
15MHz	QPSK	25	25	21.00	20.72	20.75	20.76	20.74	20.68
			50	21.00	20.80	20.82	20.88	20.86	20.82
		50	0	21.00	20.80	20.82	20.88	20.86	20.82
			0	22.50	22.16	21.63	21.03	21.66	22.01
			25	22.50	22.20	21.99	20.93	21.53	22.25
			49	22.50	22.24	22.04	20.98	21.03	22.19
	16QAM	25	0	21.00	20.72	20.78	20.79	20.71	20.69
			13	21.00	20.75	20.77	20.82	20.80	20.75
			25	21.00	20.72	20.75	20.76	20.74	20.68
		50	0	21.00	20.80	20.82	20.88	20.86	20.82
			0	22.50	22.16	21.63	21.03	21.66	22.01
			25	22.50	22.20	21.99	20.93	21.53	22.25

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	39725	40160	40620	41030	41515
					2503.5MHz	2547.0MHz	2593.0MHz	2634.0MHz	2682.5MHz
15MHz	QPSK	1	0	23.00	22.69	22.70	22.87	22.87	22.59
			38	23.00	22.64	22.72	22.80	22.65	22.47
			74	23.00	22.70	22.77	22.84	22.56	22.38
		36	0	22.00	21.68	21.71	21.72	21.67	21.66
			18	22.00	21.73	21.75	21.79	21.72	21.66
			39	22.00	21.61	21.69	21.73	21.70	21.68
	16QAM	75	0	22.00	21.69	21.72	21.74	21.70	21.66
			0	22.50	22.29	22.15	21.00	21.69	22.04
			38	22.50	22.15	21.67	21.05	21.43	21.98
		1	74	22.50	22.18	21.72	20.94	21.78	21.85
			0	21.00	20.75	20.87	20.94	20.80	20.67
			18	21.50	20.82	20.93	21.03	20.66	20.59
		36	39	21.50	20.70	20.93	21.07	20.90	20.58
			0	21.00	20.71	20.79	20.84	20.87	20.90
			75	21.00	20.71	20.79	20.84	20.87	20.90
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	39750	40185	40620	41055	41490
					2506 MHz	2549.5MHz	2593 MHz	2636.5MHz	2680 MHz
20MHz	QPSK	1	0	23.00	22.48	22.55	22.73	22.60	22.53
			50	23.00	22.55	22.74	22.81	22.65	22.56
			99	23.00	22.49	22.64	22.79	22.72	22.64
		50	0	22.00	21.69	21.68	21.67	21.66	21.65
			25	22.00	21.65	21.68	21.71	21.68	21.67
			50	22.00	21.72	21.71	21.71	21.66	21.62
	16QAM	100	0	22.00	21.70	21.75	21.80	21.78	21.55
			0	21.50	21.36	21.39	21.41	21.44	21.47
			50	22.00	21.38	21.54	21.55	21.09	20.85
		1	99	22.00	21.34	21.36	21.38	21.49	21.58
			0	21.00	20.93	20.91	20.89	20.88	20.83
			25	21.00	20.96	20.90	20.83	20.84	20.89
		50	50	21.00	20.80	20.81	20.82	20.80	20.75
			0	21.00	20.73	20.79	20.91	20.84	20.79
			100	21.00	20.73	20.79	20.91	20.84	20.79

10.1.8 Conducted Power of Wi-Fi 2.4G

Mode	802.11b		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	22.38	23.20	22.02
Mode	802.11g		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	17.76	25.42	24.41
Mode	802.11n(HT20)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	24.39	24.76	24.02
Mode	802.11n(HT40)		
Channel/Frequency(MHz)	7(2422)	6(2437)	9(2452)
Average Power(dBm)	21.01	22.24	23.76

10.1.9 Tune-up power tolerance

Band		Tune-up power tolerance(dBm)	
WCDMA 2		Max output power =23.50±1.0dBm	
WCDMA 4		Max output power =24.50±1.0dBm	
WCDMA 4		Max output power =23.50±1.0dBm	
LTE B2		Max output power =24.00±1.0dBm	
LTE B4		Max output power =24.00±1.0dBm	
LTE B5		Max output power =24.50±1.0dBm	
LTE B7		Max output power =23.50±1.0dBm	
LTE B12		Max output power =24.00±1.0dBm	
LTE B41		Max output power =23.00±1.0dBm	
WIFI	2.4GWIFI	802.11b	Max output power =23.50±1.0dBm
		802.11g	Max output power =25.50±1.0dBm
		802.11n (HT20)	Max output power =25.00±1.0dBm
		802.11n (HT40)	Max output power =24.00±1.0dBm

10.2 SAR test results

Notes:

1) Per KDB447498 D01v05 r02, the SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the scaled SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8 \text{ W/kg}$), testing at the high and low channels is optional.

2) Per KDB447498 D01v05r02, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is: $\leq 0.8 \text{ W/kg}$ or 2.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\leq 100 \text{ MHz}$. When the maximum output power variation across the required test channels is $> \frac{1}{2} \text{ dB}$, instead of the middle channel, the highest output power channel must be used.

3) Per KDB447498 D01v05r02, All measurement SAR result is scaled-up to account for tune-up tolerance is compliant.

4) Per KDB648474 D04v01r02, body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn with headset SAR.

5) Per KDB248227 D01v01r02, the procedures required to establish specific device operating configurations for testing the SAR of 802.11 a/b/g transmitters.

(1) For Headsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is $\leq 0.4 \text{ W/kg}$, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is $\leq 0.8 \text{ W/kg}$ or all test positions are measured.

(2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is $\leq 0.8 \text{ W/kg}$, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is $> 1.2 \text{ W/kg}$, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is $\leq 1.2 \text{ W/kg}$.

(3) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is ≤ 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is ≤ 1.2 W/kg.

6) Per KDB865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/Kg; if the deviation among the repeated measurement is $\leq 20\%$, and the measured SAR < 1.45 W/Kg, only one repeated measurement is required.

7) Per KDB865664 D02v01r01, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing (Refer to appendix B for details).

8) Per KDB941225 D06v01r01, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

9) Per KDB 941225 D01, 3G SAR Measurement Procedures, The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

10) Per KDB 941225 D05, SAR Evaluation Considerations for LTE Devices

(1) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. 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 and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

(2) QPSK with 100% RB allocation

SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be

tested.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> 1/2$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is $> 1/2$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

10.3 Test Result

10.3.1 Results overview of WCDMA

Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
WCDMA Band 2 (RMC*)	Front	9400	1880	0.450	0.360	100	1.00	23.23	23.50	0.421	1.030
	Back	9400	1880	-0.970	0.564	100	1.00	23.23	23.50	0.307	1.030
	Left	9400	1880	-3.440	0.417	100	1.00	23.23	23.50	0.210	1.030
	Right	9400	1880	2.250	0.371	100	1.00	23.23	23.50	0.171	1.030
	Top	9400	1880	-1.760	0.398	100	1.00	23.23	23.50	0.105	1.030
	Bottom	9400	1880	-4.490	0.312	100	1.00	23.23	23.50	0.081	1.030

Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
WCDMA Band 4 (RMC*)	Front	1513	1752.6	-1.890	0.513	100	1.00	24.08	24.50	0.565	1.102
	Back	1513	1752.6	-0.460	0.784	100	1.00	24.08	24.50	0.864	1.102
	Left	1513	1752.6	2.430	0.432	100	1.00	24.08	24.50	0.476	1.102
	Right	1513	1752.6	-4.700	0.385	100	1.00	24.08	24.50	0.424	1.102
	Top	1513	1752.6	-3.860	0.401	100	1.00	24.08	24.50	0.442	1.102
	Bottom	1513	1752.6	1.660	0.317	100	1.00	24.08	24.50	0.349	1.102

Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
WCDMA Band 5 (RMC*)	4132	826.4	-2.270	0.450	100	1.00	23.33	23.50	0.468	1.040	4132
	4132	826.4	-2.470	0.504	100	1.00	23.33	23.50	0.524	1.040	4132
	4132	826.4	1.800	0.324	100	1.00	23.33	23.50	0.337	1.040	4132
	4132	826.4	-3.620	0.298	100	1.00	23.33	23.50	0.310	1.040	4132
	4132	826.4	-0.550	0.112	100	1.00	23.33	23.50	0.116	1.040	4132
	4132	826.4	-1.740	0.079	100	1.00	23.33	23.50	0.082	1.040	4132

10.3.2 Results overview of LTE

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 2 (BW: 20MHz)	1RB	Front	18700	1860.0	-0.140	0.296	100	1.00	23.62	24.00	0.323	1.091
		Back	18700	1860.0	-0.700	0.467	100	1.00	23.62	24.00	0.510	1.091
		Left	18700	1860.0	1.560	0.203	100	1.00	23.62	24.00	0.222	1.091
		Right	18700	1860.0	-3.440	0.177	100	1.00	23.62	24.00	0.193	1.091
		Top	18700	1860.0	-2.190	0.102	100	1.00	23.62	24.00	0.111	1.091
		Bottom	18700	1860.0	-4.650	0.069	100	1.00	23.62	24.00	0.075	1.091
	50%RB	Front	18700	1860.0	3.610	0.278	100	1.00	23.62	24.00	0.303	1.091
		Back	18700	1860.0	-2.150	0.431	100	1.00	23.62	24.00	0.470	1.091
		Left	18700	1860.0	2.110	0.189	100	1.00	23.62	24.00	0.206	1.091
		Right	18700	1860.0	2.800	0.162	100	1.00	23.62	24.00	0.177	1.091
		Top	18700	1860.0	-2.950	0.086	100	1.00	23.62	24.00	0.094	1.091
		Bottom	18700	1860.0	-4.770	0.061	100	1.00	23.62	24.00	0.067	1.091

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 4 (BW: 20MHz)	1RB	Front	20300	1745.0	-0.250	0.443	100	1.00	23.94	24.00	0.449	1.014
		Back	20300	1745.0	0.200	0.783	100	1.00	23.94	24.00	0.794	1.014
		Left	20300	1745.0	-4.660	0.336	100	1.00	23.94	24.00	0.341	1.014
		Right	20300	1745.0	-2.530	0.268	100	1.00	23.94	24.00	0.272	1.014
		Top	20300	1745.0	-1.080	0.157	100	1.00	23.94	24.00	0.159	1.014
		Bottom	20300	1745.0	2.370	0.089	100	1.00	23.94	24.00	0.090	1.014
	50%RB	Front	20300	1745.0	3.050	0.421	100	1.00	23.94	24.00	0.427	1.014
		Back	20300	1745.0	-3.000	0.743	100	1.00	23.94	24.00	0.753	1.014
		Left	20300	1745.0	3.700	0.310	100	1.00	23.94	24.00	0.314	1.014
		Right	20300	1745.0	-3.870	0.237	100	1.00	23.94	24.00	0.240	1.014
		Top	20300	1745.0	-3.550	0.142	100	1.00	23.94	24.00	0.144	1.014
		Bottom	20300	1745.0	3.090	0.081	100	1.00	23.94	24.00	0.082	1.014

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 5 (BW: 10MHz)	1RB	Front	20643	848.3	0.320	0.345	100	1.00	24.10	24.50	0.378	1.096
		Back	20643	848.3	1.110	0.429	100	1.00	24.10	24.50	0.470	1.096
		Left	20643	848.3	-0.530	0.288	100	1.00	24.10	24.50	0.316	1.096
		Right	20643	848.3	-1.020	0.178	100	1.00	24.10	24.50	0.195	1.096
		Top	20643	848.3	-4.000	0.216	100	1.00	24.10	24.50	0.237	1.096
		Bottom	20643	848.3	-3.710	0.098	100	1.00	24.10	24.50	0.107	1.096
	50%RB	Front	20643	848.3	-2.910	0.328	100	1.00	24.10	24.50	0.360	1.096
		Back	20643	848.3	-1.960	0.401	100	1.00	24.10	24.50	0.440	1.096
		Left	20643	848.3	-4.870	0.232	100	1.00	24.10	24.50	0.254	1.096
		Right	20643	848.3	-4.530	0.173	100	1.00	24.10	24.50	0.190	1.096
		Top	20643	848.3	4.410	0.205	100	1.00	24.10	24.50	0.225	1.096
		Bottom	20643	848.3	-1.550	0.095	100	1.00	24.10	24.50	0.104	1.096

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 7 (BW: 20MHz)	1RB	Front	21425	2567.5	0.550	0.337	100	1.00	23.41	23.50	0.344	1.021
		Back	21425	2567.5	-1.900	0.770	100	1.00	23.41	23.50	0.786	1.021
		Left	21425	2567.5	-2.130	0.269	100	1.00	23.41	23.50	0.275	1.021
		Right	21425	2567.5	-0.640	0.197	100	1.00	23.41	23.50	0.201	1.021
		Top	21425	2567.5	-4.080	0.113	100	1.00	23.41	23.50	0.115	1.021
		Bottom	21425	2567.5	-3.350	0.078	100	1.00	23.41	23.50	0.080	1.021
	50%RB	Front	21425	2567.5	-3.700	0.317	100	1.00	23.41	23.50	0.324	1.021
		Back	21425	2567.5	-4.600	0.719	100	1.00	23.41	23.50	0.734	1.021
		Left	21425	2567.5	-3.850	0.257	100	1.00	23.41	23.50	0.262	1.021
		Right	21425	2567.5	-4.730	0.193	100	1.00	23.41	23.50	0.197	1.021
		Top	21425	2567.5	-4.290	0.108	100	1.00	23.41	23.50	0.110	1.021
		Bottom	21425	2567.5	-1.820	0.076	100	1.00	23.41	23.50	0.078	1.021

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 12 (BW: 10MHz)	1RB	Front	23017	699.7	-4.470	0.133	100	1.00	23.84	24.00	0.138	1.038
		Back	23017	699.7	-4.390	0.312	100	1.00	23.84	24.00	0.324	1.038
		Left	23017	699.7	-3.160	0.101	100	1.00	23.84	24.00	0.105	1.038
		Right	23017	699.7	-2.280	0.098	100	1.00	23.84	24.00	0.102	1.038
		Top	23017	699.7	-0.690	0.060	100	1.00	23.84	24.00	0.062	1.038
		Bottom	23017	699.7	-1.170	0.034	100	1.00	23.84	24.00	0.035	1.038
	50%RB	Front	23017	699.7	-0.740	0.113	100	1.00	23.84	24.00	0.117	1.038
		Back	23017	699.7	-1.730	0.289	100	1.00	23.84	24.00	0.300	1.038
		Left	23017	699.7	0.830	0.094	100	1.00	23.84	24.00	0.098	1.038
		Right	23017	699.7	-1.530	0.086	100	1.00	23.84	24.00	0.089	1.038
		Top	23017	699.7	2.540	0.053	100	1.00	23.84	24.00	0.055	1.038
		Bottom	23017	699.7	2.380	0.031	100	1.00	23.84	24.00	0.032	1.038

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 41 (BW: 5MHz)	1RB	Front	40620	2593.0	-2.210	0.198	100	1.00	22.87	23.00	0.204	1.030
		Back	40620	2593.0	1.030	0.355	100	1.00	22.87	23.00	0.366	1.030
		Left	40620	2593.0	-3.860	0.128	100	1.00	22.87	23.00	0.132	1.030
		Right	40620	2593.0	-4.020	0.101	100	1.00	22.87	23.00	0.104	1.030
		Top	40620	2593.0	1.550	0.087	100	1.00	22.87	23.00	0.090	1.030
		Bottom	40620	2593.0	-0.910	0.051	100	1.00	22.87	23.00	0.053	1.030
		Back	40620	2593.0	-4.700	0.350	100	1.00	22.87	23.00	0.361	1.030
		Back	40620	2593.0	0.330	0.362	100	1.00	22.87	23.00	0.373	1.030
		Back	40620	2593.0	-2.96	0.353	100	1.00	22.87	23.00	0.364	1.030
		Back	40620	2593.0	-3.11	0.359	100	1.00	22.87	23.00	0.370	1.030
	50%RB	Front	40620	2593.0	0.720	0.176	100	1.00	22.87	23.00	0.181	1.030
		Back	40620	2593.0	-4.860	0.323	100	1.00	22.87	23.00	0.333	1.030
		Left	40620	2593.0	-1.780	0.124	100	1.00	22.87	23.00	0.128	1.030
		Right	40620	2593.0	-0.850	0.114	100	1.00	22.87	23.00	0.117	1.030
		Top	40620	2593.0	-4.560	0.076	100	1.00	22.87	23.00	0.078	1.030
		Bottom	40620	2593.0	1.490	0.047	100	1.00	22.87	23.00	0.048	1.030

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 41 (BW: 10MHz)	1RB	Front	40620	2593.0	-3.620	0.203	100	1.00	22.87	23.00	0.209	1.030
		Back	40620	2593.0	-2.950	0.361	100	1.00	22.87	23.00	0.372	1.030
		Left	40620	2593.0	-1.440	0.131	100	1.00	22.87	23.00	0.135	1.030
		Right	40620	2593.0	0.850	0.106	100	1.00	22.87	23.00	0.109	1.030
		Top	40620	2593.0	4.170	0.090	100	1.00	22.87	23.00	0.093	1.030
		Bottom	40620	2593.0	-2.080	0.055	100	1.00	22.87	23.00	0.057	1.030
		Back	40620	2593.0	-3.770	0.359	100	1.00	22.87	23.00	0.370	1.030
		Back	40620	2593.0	-0.460	0.366	100	1.00	22.87	23.00	0.377	1.030
		Back	40620	2593.0	1.77	0.359	100	1.00	22.87	23.00	0.370	1.030
	50%RB	Back	40620	2593.0	-2.99	0.362	100	1.00	22.87	23.00	0.373	1.030
		Front	40620	2593.0	0.590	0.184	100	1.00	22.87	23.00	0.190	1.030
		Back	40620	2593.0	-0.010	0.336	100	1.00	22.87	23.00	0.346	1.030
		Left	40620	2593.0	4.850	0.126	100	1.00	22.87	23.00	0.130	1.030
		Right	40620	2593.0	2.880	0.095	100	1.00	22.87	23.00	0.098	1.030
		Top	40620	2593.0	3.340	0.086	100	1.00	22.87	23.00	0.089	1.030
		Bottom	40620	2593.0	1.650	0.047	100	1.00	22.87	23.00	0.048	1.030

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 41 (BW: 15MHz)	1RB	Front	40620	2593.0	-0.220	0.198	100	1.00	22.87	23.00	0.204	1.030
		Back	40620	2593.0	-2.130	0.352	100	1.00	22.87	23.00	0.363	1.030
		Left	40620	2593.0	-3.660	0.130	100	1.00	22.87	23.00	0.134	1.030
		Right	40620	2593.0	2.150	0.103	100	1.00	22.87	23.00	0.106	1.030
		Top	40620	2593.0	0.350	0.089	100	1.00	22.87	23.00	0.092	1.030
		Bottom	40620	2593.0	-4.660	0.052	100	1.00	22.87	23.00	0.054	1.030
		Back	40620	2593.0	-2.590	0.355	100	1.00	22.87	23.00	0.366	1.030
		Back	40620	2593.0	-1.180	0.360	100	1.00	22.87	23.00	0.371	1.030
		Back	40620	2593.0	3.47	0.354	100	1.00	22.87	23.00	0.365	1.030
	50%RB	Back	40620	2593.0	-0.67	0.359	100	1.00	22.87	23.00	0.370	1.030
		Front	40620	2593.0	0.140	0.189	100	1.00	22.87	23.00	0.195	1.030
		Back	40620	2593.0	-2.320	0.333	100	1.00	22.87	23.00	0.343	1.030
		Left	40620	2593.0	-0.770	0.119	100	1.00	22.87	23.00	0.123	1.030
		Right	40620	2593.0	4.140	0.093	100	1.00	22.87	23.00	0.096	1.030
		Top	40620	2593.0	3.540	0.071	100	1.00	22.87	23.00	0.073	1.030
		Bottom	40620	2593.0	0.130	0.042	100	1.00	22.87	23.00	0.043	1.030

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 41 (BW: 20MHz)	1RB	Front	40620	2593.0	-3.620	0.206	100	1.00	22.87	23.00	0.212	1.030
		Back	40620	2593.0	-1.440	0.369	100	1.00	22.87	23.00	0.380	1.030
		Left	40620	2593.0	2.030	0.122	100	1.00	22.87	23.00	0.126	1.030
		Right	40620	2593.0	-3.640	0.099	100	1.00	22.87	23.00	0.102	1.030
		Top	40620	2593.0	-1.770	0.067	100	1.00	22.87	23.00	0.069	1.030
		Bottom	40620	2593.0	-0.940	0.046	100	1.00	22.87	23.00	0.047	1.030
		Back	40620	2593.0	2.230	0.366	100	1.00	22.87	23.00	0.377	1.030
		Back	40620	2593.0	-1.260	0.367	100	1.00	22.87	23.00	0.378	1.030
		Back	40620	2593.0	-4.45	0.365	100	1.00	22.87	23.00	0.376	1.030
		Back	40620	2593.0	-0.39	0.362	100	1.00	22.87	23.00	0.373	1.030
	50%RB	Front	40620	2593.0	-2.210	0.193	100	1.00	22.87	23.00	0.199	1.030
		Back	40620	2593.0	-1.010	0.358	100	1.00	22.87	23.00	0.369	1.030
		Left	40620	2593.0	4.930	0.117	100	1.00	22.87	23.00	0.121	1.030
		Right	40620	2593.0	3.970	0.092	100	1.00	22.87	23.00	0.095	1.030
		Top	40620	2593.0	0.730	0.061	100	1.00	22.87	23.00	0.063	1.030
		Bottom	40620	2593.0	4.690	0.042	100	1.00	22.87	23.00	0.043	1.030

10.3.3 Results overview of Wifi

Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
2.4g (2.4~2.4835) 802.11b	Front	6	2437	-0.660	0.409	100	1.00	22.87	23.00	0.421	1.030
	Back	6	2437	1.180	0.298	100	1.00	22.87	23.00	0.307	1.030
	Left	6	2437	-3.260	0.204	100	1.00	22.87	23.00	0.210	1.030
	Right	6	2437	-4.650	0.166	100	1.00	22.87	23.00	0.171	1.030
	Top	6	2437	-1.880	0.102	100	1.00	22.87	23.00	0.105	1.030
	Bottom	6	2437	0.960	0.079	100	1.00	22.87	23.00	0.081	1.030

Note:

- The maximum SAR Value of each test band is marked bold.
- SAR plot is provided only for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.
- Per KDB 447498 D01 v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8 W/kg, other channels SAR testing is not necessary.
- Per KDB 447498 D01 v06, head/body-worn use is evaluated with the device positioned at 0mm/10 mm from a head/flat phantom respectively filled with head tissue-equivalent medium.
- Per KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device with antennas 2.5 cm or closer to the edge of the device, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.
- Per KDB 447498 D01 v06, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor= $10^{[(\text{tune-up limit power(dBm)} - \text{Ave.power power (dBm)})/10]}$, where tune-up limit is the maximum rated power among all production units.
- Reported SAR(W/kg)=Measured SAR (W/kg)*Scaling Factor.

11 Multiple Transmitter Information

The SAR measurement positions of each side are as below:

< Rear Side >

Mode	Front side	Rear side	Left side	Right side	Top side	Bottom side
2G/3G/4G Antenna	Yes	Yes	Yes	Yes	Yes	Yes
Wi-Fi/BT Antenna	Yes	Yes	Yes	Yes	Yes	Yes

Per KDB941225 D06v01r01, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

11.1 Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities are as below:

Simultaneous Transmission Possibilities			
Simultaneous Tx Combination	Configuration	Body	Hotspot
1	GSM/GPRS/UMTS/LTE +Wi-Fi	YES	YES
2	GSM/GPRS/UMTS/LTE +BT	NO	NO

Note: The device does not support simultaneous BT and Wi-Fi ,because the BT and Wi-Fi share the same antenna and can't transmit simultaneously.

11.2 SAR Summation Scenario

Hotspot(body-worn0mm)

Band	Test Position	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
		WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
WCDMA Band 2	Front	0.383	0.421	0.804	
	Back	0.600	0.307	0.907	
	Left	0.444	0.210	0.654	
	Right	0.395	0.171	0.566	
	Top	0.424	0.105	0.529	
	Bottom	0.332	0.081	0.413	
WCDMA Band 4	Front	0.565	0.421	0.986	
	Back	0.864	0.307	1.171	
	Left	0.476	0.210	0.686	
	Right	0.424	0.171	0.595	
	Top	0.442	0.105	0.547	
	Bottom	0.349	0.081	0.430	
WCDMA Band 5	Front	0.468	0.421	0.889	
	Back	0.524	0.307	0.831	
	Left	0.337	0.210	0.547	
	Right	0.310	0.171	0.481	
	Top	0.116	0.105	0.221	
	Bottom	0.082	0.081	0.163	

Band	Test Position	RB allocation	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
			WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
LTE Band 2	Front	1RB	0.323	0.421	0.744	1.6
	Back		0.510	0.307	0.817	
	Left		0.222	0.210	0.432	
	Right		0.193	0.171	0.364	
	Top		0.111	0.105	0.216	
	Bottom		0.075	0.081	0.156	
	Front	50%RB	0.303	0.421	0.724	
	Back		0.470	0.307	0.777	
	Left		0.206	0.210	0.416	
	Right		0.177	0.171	0.348	
	Top		0.094	0.105	0.199	
	Bottom		0.067	0.081	0.148	
LTE Band 4	Front	1RB	0.449	0.421	0.870	
	Back		0.794	0.307	1.101	
	Left		0.341	0.210	0.551	
	Right		0.272	0.171	0.443	
	Top		0.159	0.105	0.264	
	Bottom		0.090	0.081	0.171	
	Front	50%RB	0.427	0.421	0.848	
	Back		0.753	0.307	1.060	
	Left		0.314	0.210	0.524	
	Right		0.240	0.171	0.411	
	Top		0.144	0.105	0.249	
	Bottom		0.082	0.081	0.163	
LTE Band 5	Front	1RB	0.378	0.421	0.799	
	Back		0.470	0.307	0.777	
	Left		0.316	0.210	0.526	
	Right		0.195	0.171	0.366	
	Top		0.237	0.105	0.342	
	Bottom		0.107	0.081	0.188	
	Front	50%RB	0.360	0.421	0.781	
	Back		0.440	0.307	0.747	
	Left		0.254	0.210	0.464	
	Right		0.190	0.171	0.361	
	Top		0.225	0.105	0.330	
	Bottom		0.104	0.081	0.185	
LTE Band 7	Front	1RB	0.344	0.421	0.765	
	Back		0.786	0.307	1.093	
	Left		0.275	0.210	0.485	
	Right		0.201	0.171	0.372	
	Top		0.115	0.105	0.220	
	Bottom		0.080	0.081	0.161	
	Front	50%RB	0.324	0.421	0.745	
	Back		0.734	0.307	1.041	
	Left		0.262	0.210	0.472	
	Right		0.197	0.171	0.368	
	Top		0.110	0.105	0.215	
	Bottom		0.078	0.081	0.159	

Band	Test Position	RB allocation	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
			WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
LTE Band 12	Front	1RB	0.138	0.421	0.559	1.6
	Back		0.324	0.307	0.631	
	Left		0.105	0.210	0.315	
	Right		0.102	0.171	0.273	
	Top		0.062	0.105	0.167	
	Bottom		0.035	0.081	0.116	
	Front	50%RB	0.117	0.421	0.538	
	Back		0.300	0.307	0.607	
	Left		0.098	0.210	0.308	
	Right		0.089	0.171	0.260	
	Top		0.055	0.105	0.160	
	Bottom		0.032	0.081	0.113	

Band	Test Position	RB allocation	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
			WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
LTE Band 41 5M	Front	1RB	0.204	0.421	0.625	Llimit (W/kg)
	Back		0.366	0.307	0.673	
	Left		0.132	0.210	0.342	
	Right		0.104	0.171	0.275	
	Top		0.090	0.105	0.195	
	Bottom		0.053	0.081	0.134	
	Back	50%RB	0.361	0.421	0.782	
	Back		0.373	0.307	0.680	
	Back		0.364	0.210	0.574	
	Back		0.370	0.171	0.541	
	Front		0.181	0.421	0.602	
	Back		0.333	0.307	0.640	
	Left		0.128	0.210	0.338	
	Right		0.117	0.171	0.288	
	Top		0.078	0.105	0.183	
	Bottom		0.048	0.081	0.129	

Band	Test Position	RB allocation	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
			WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
LTE Band 41 10M	Front	1RB	0.209	0.421	0.630	Llimit (W/kg)
	Back		0.372	0.307	0.679	
	Left		0.135	0.210	0.345	
	Right		0.109	0.171	0.280	
	Top		0.093	0.105	0.198	
	Bottom		0.057	0.081	0.138	
	Back	50%RB	0.370	0.421	0.791	
	Back		0.377	0.307	0.684	
	Back		0.370	0.210	0.580	
	Back		0.373	0.171	0.544	
	Front		0.190	0.421	0.611	
	Back		0.346	0.307	0.653	
	Left		0.130	0.210	0.340	
	Right		0.098	0.171	0.269	
	Top		0.089	0.105	0.194	
	Bottom		0.048	0.081	0.129	

Band	Test Position	RB allocation	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
			WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
LTE Band 41 15M	Front	1RB	0.204	0.421	0.625	
	Back		0.363	0.307	0.670	
	Left		0.134	0.210	0.344	
	Right		0.106	0.171	0.277	
	Top		0.092	0.105	0.197	
	Bottom		0.054	0.081	0.135	
	Back		0.366	0.421	0.787	
	Back	50%RB	0.371	0.307	0.678	
	Back		0.365	0.210	0.575	
	Back		0.370	0.171	0.541	
	Front		0.195	0.421	0.616	
	Back		0.343	0.307	0.650	
	Left		0.123	0.210	0.333	
	Right		0.096	0.171	0.267	
	Top		0.073	0.105	0.178	
	Bottom		0.043	0.081	0.124	

Band	Test Position	RB allocation	Scaled SAR		Σ SAR (W/kg)	Llimit (W/kg)
			WWAN SAR 1g(W/kg)	WIFI2.4G SAR 1g(W/kg)		
LTE Band 41 20M	Front	1RB	0.212	0.421	0.633	
	Back		0.380	0.307	0.687	
	Left		0.126	0.210	0.336	
	Right		0.102	0.171	0.273	
	Top		0.069	0.105	0.174	
	Bottom		0.047	0.081	0.128	
	Back	50%RB	0.377	0.421	0.798	
	Back		0.378	0.307	0.685	
	Back		0.376	0.210	0.586	
	Back		0.373	0.171	0.544	
	Front		0.199	0.421	0.620	
	Back		0.369	0.307	0.676	
	Left		0.121	0.210	0.331	
	Right		0.095	0.171	0.266	
	Top		0.063	0.105	0.168	
	Bottom		0.043	0.081	0.124	

12 Measurement uncertainty evaluation

12.1 Measurement uncertainty evaluation for SAR test

The following table includes the uncertainty table of the IEEE 1528. The values are determined by Satimo. The breakdown of the individual uncertainties is as follows:

Measurement Uncertainty evaluation for SAR test								
Uncertainty Component	Tol. (±%)	Prob. Dist.	Div.	C _i (1g)	C _i (10g)	1g U _i (±%)	10g U _i (±%)	V _i
measurement system								
Probe Calibration	5.8	N	1	1	1	5.8	5.8	∞
Axial Isotropy	3.5	R	$\sqrt{3}$	$(1-C_p)^{1/2}$	$(1-C_p)^{1/2}$	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
Boundary Effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
system Detection Limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	3	N	1	1	1	3.00	3.00	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF Ambient Conditions-Noise	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF Ambient Conditions-Reflections	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe Positioner Mechanical Tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and Integration Algorithms for Max.SAR Evaluation	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related								
Test Sample Positioning	2.6	N	1	1	1	2.60	2.60	11
Device Holder Uncertainty	3	N	1	1	1	3.00	3.00	7
Output Power Variation-SAR drift measurement	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞

Phantom and Tissue Parameters								
Phantom Uncertainty (shape and thickness tolerances)	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity (meas.)	2.5	N	1	0.64	0.43	1.60	1.08	5
Liquid conductivity (target.)	5	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	5
Liquid Permittivity (meas.)	2.5	N	1	0.60	0.49	1.50	1.23	∞
Liquid Permittivity (target.)	5	R	$\sqrt{3}$	0.60	0.49	1.73	1.42	∞
Combined Standard Uncertainty		Rss				10.63	10.54	
Expanded Uncertainty{95% CONFIDENCE INTERVAL}		k				21.26	21.08	

12.2 Measurement uncertainty evaluation for system check

The following table includes the uncertainty table of the IEEE 1528. The values are determined by Satimo. The breakdown of the individual uncertainties is as follows:

Uncertainty For System Performance Check								
Uncertainty Component	Tol. (±%)	Prob. Dist.	Div.	C _i 1g	C _i 10g	1g U _i (±%)	10g U _i (±%)	V _i
measurement system								
Probe Calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	$\sqrt{3}$	$(1-C_p)^{1/2}$	$(1-C_p)^{1/2}$	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
Boundary Effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
system detection Limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	0	N	1	1	1	0.00	0.00	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient Conditions - Noise	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient Conditions – Reflections	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioned Mechanical Tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Dipole								
Deviation of experimental source from numerical source	4	N	1	1	1	4.00	4.00	∞
Input power and SAR drift measurement	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid Distance	2	R	$\sqrt{3}$	1	1	1.16	1.16	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (shape and thickness tolerances)	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity (meas.)	2.5	N	1	0.64	0.43	1.60	1.08	5
Liquid conductivity (target.)	5	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	5
Liquid Permittivity (meas.)	2.5	N	1	0.60	0.49	1.50	1.23	∞
Liquid Permittivity (target.)	5	R	$\sqrt{3}$	0.60	0.49	1.73	1.41	∞
Combined Standard Uncertainty		Rss				10.28	9.98	
Expanded Uncertainty (95% Confidence interval)		k				20.57	19.95	

13 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

	Manufacturer	Device Type	Type(Model)	Serial number	calibration	
					Last Cal.	Due Date
☒	SATIMO	COMOSAR DOSIMETRIC E FIELD PROBE	SSE2	3523-EPGO-428	2024-06-18	2025-06-17
☒	SATIMO	COMOSAR 750 MHz REFERENCE DIPOLE	SID750	SN 48/16 DIP0G750-444	2023-06-25	2026-06-24
☒	SATIMO	COMOSAR 835 MHz REFERENCE DIPOLE	SID835	SN 14/13 DIP0G835-235	2023-06-25	2026-06-24
☒	SATIMO	COMOSAR 900 MHz REFERENCE DIPOLE	SID900	SN 14/13 DIP0G900-231	2023-06-25	2026-06-24
☒	SATIMO	COMOSAR 1800 MHz REFERENCE DIPOLE	SID1800	SN 14/13 DIP1G800-232	2023-06-25	2026-06-24
☐	SATIMO	COMOSAR 1900 MHz REFERENCE DIPOLE	SID1900	SN 14/13 DIP1G900-236	2023-06-25	2026-06-24
☒	SATIMO	COMOSAR 2000 MHz REFERENCE DIPOLE	SID2000	SN 14/13 DIP2G000-237	2023-06-25	2026-06-24
☒	SATIMO	COMOSAR 2450 MHz REFERENCE DIPOLE	SID2450	SN 14/13 DIP2G450-238	2023-06-25	2026-06-24
☒	SATIMO	COMOSAR 2600 MHz REFERENCE DIPOLE	SID2600	SN 28/14 DIP2G600-327	2023-06-25	2026-06-24
☒	SATIMO	Software	OPENSAR	N/A	N/A	N/A
☒	SATIMO	Phantom	COMOSAR IEEE SAM PHANTOM	SN 14/13 SAM99	N/A	N/A
☒	R & S	Universal Radio Communication Tester	CMU 200	119733	2024-10-21	2025-10-20
☒	R & S	Universal Radio Communication Tester	CMW500	144459	2024-10-21	2025-10-20
☒	R & S	UXM5G Wireless Test Platform	E7515B	MY60192341	2024-10-21	2025-10-20
☒	HP	Network Analyser	8753D	3410A08889	2024-10-21	2025-10-20
☒	HP	Signal Generator	E4421B	GB39340770	2024-10-28	2025-10-27
☒	Keithley	Multimeter	Keithley 2000	4014539	2024-10-28	2025-10-27
☒	SATIMO	Amplifier	Power Amplifier	MODU-023-A-0004	2024-10-21	2025-10-20
☒	Agilent	Power Meter	E4418B	GB43312909	2024-10-21	2025-10-20
☒	Agilent	Power Meter Sensor	E4412A	MY41500046	2024-10-21	2025-10-20

Annex A: System performance verification

(Please See the SAR Measurement Plots of annex A.)

Annex B: Measurement results

(Please See the SAR Measurement Plots of annex B.)

Annex C: Calibration reports

(Please See the Calibration reports of annex C.)

	Annex A: System Check
	Tested Model : DWR-932W
	Report Number: WSCT-ANAB-R&E250400022A-SAR

I. RESULTS

<u>TYPE</u>	<u>BAND</u>	<u>PARAMETERS</u>
Validation	CW750	<u>Measurement 1: Validation Plane with Dipole device position on Middle Channel in CW mode</u>
Validation	CW835	<u>Measurement 2: Validation Plane with Dipole device position on Middle Channel in CW mode</u>
Validation	CW1800	<u>Measurement 3: Validation Plane with Dipole device position on Middle Channel in CW mode</u>
Validation	CW1900	<u>Measurement 4: Validation Plane with Dipole device position on Middle Channel in CW mode</u>
Validation	CW2450	<u>Measurement 5: Validation Plane with Dipole device position on Middle Channel in CW mode</u>
Validation	CW2600	<u>Measurement 6: Validation Plane with Dipole device position on Middle Channel in CW mode</u>

MEASUREMENT 1

Type: Validation measurement (Complete)

Date of measurement: 17/03/2025

Measurement duration: 11 minutes 40 seconds

A. Experimental conditions.

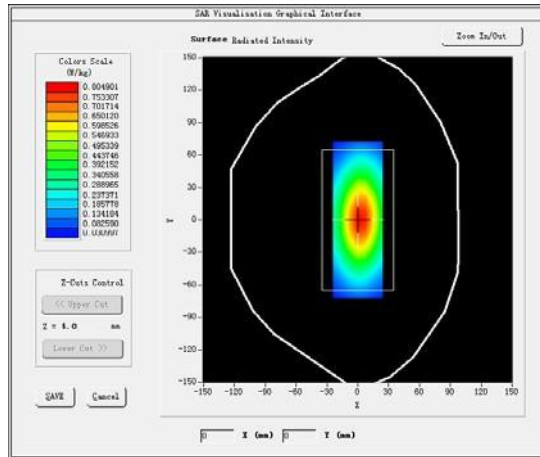
<u>Area Scan</u>	<u>dx=8mm dy=8mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW750</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

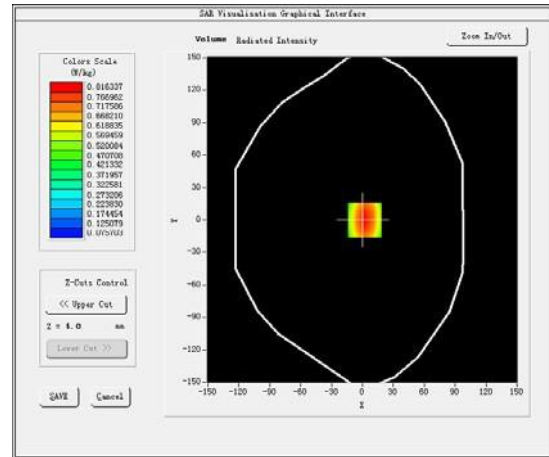
Middle Band SAR (Channel -1):

Frequency (MHz)	750.000000
Relative permittivity (real part)	41.350601
Relative permittivity (imaginary part)	21.254601
Conductivity (S/m)	0.885608
Variation (%)	1.030000

SURFACE SAR



VOLUME SAR

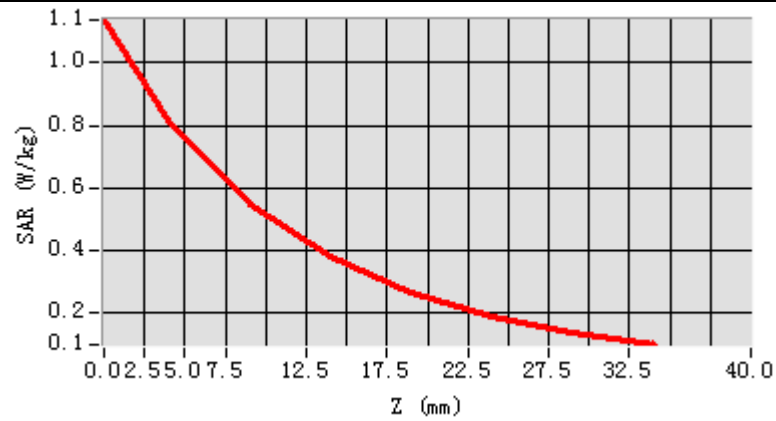


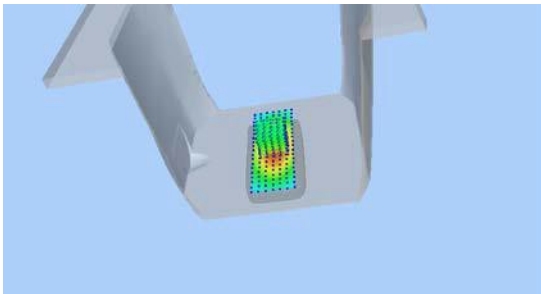
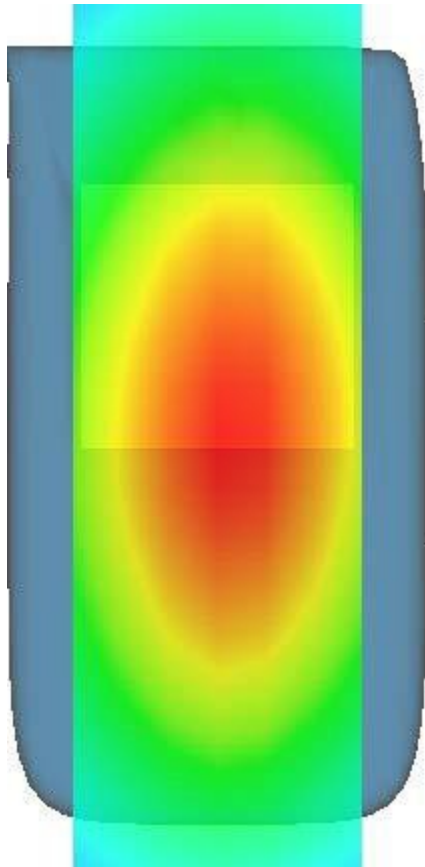
Maximum location: X=2.00, Y=0.00

SAR Peak: 1.13 W/kg

SAR 10g (W/Kg)	0.537155
SAR 1g (W/Kg)	0.783648

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.1379	0.8163	0.5446	0.3776	0.2647	0.1886	0.1348



3D screen shot	Hot spot position
	

MEASUREMENT 2

Type: Validation measurement (Complete)

Date of measurement: 17/03/2025

Measurement duration: 11 minutes 54 seconds

A. Experimental conditions.

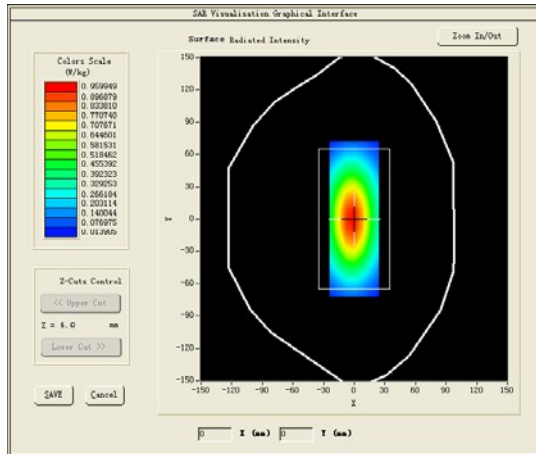
<u>Area Scan</u>	<u>dx=8mm dy=8mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW835</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

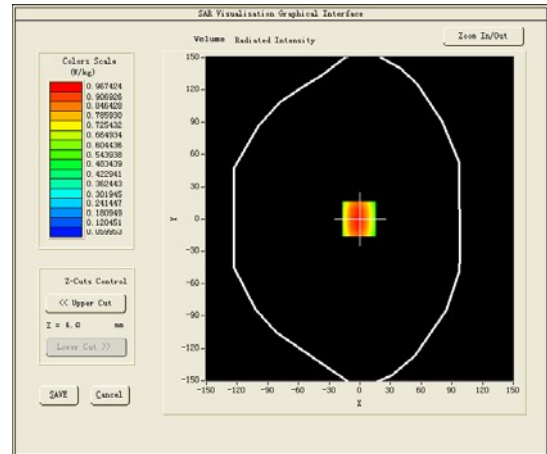
Middle Band SAR (Channel -1):

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.534712
Relative permittivity (imaginary part)	21.274156
Conductivity (S/m)	0.926581
Variation (%)	0.120000

SURFACE SAR



VOLUME SAR

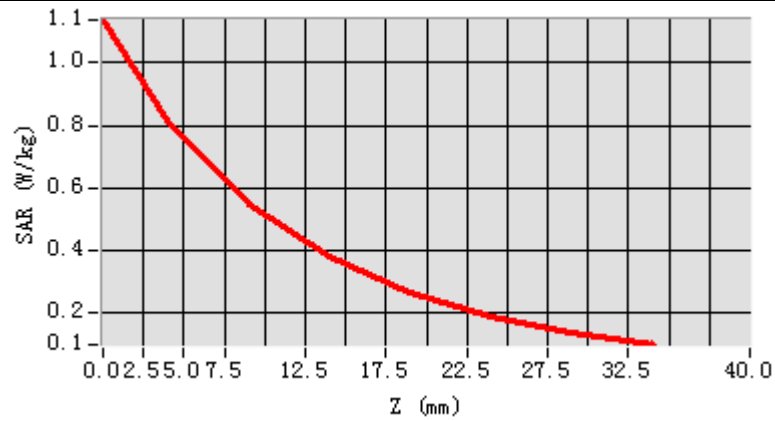


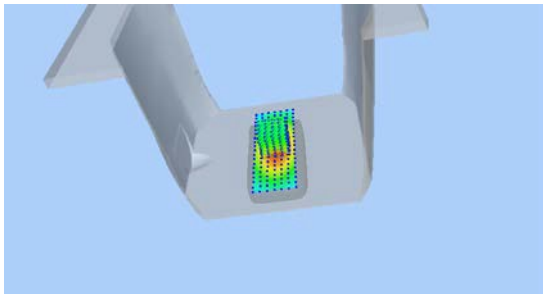
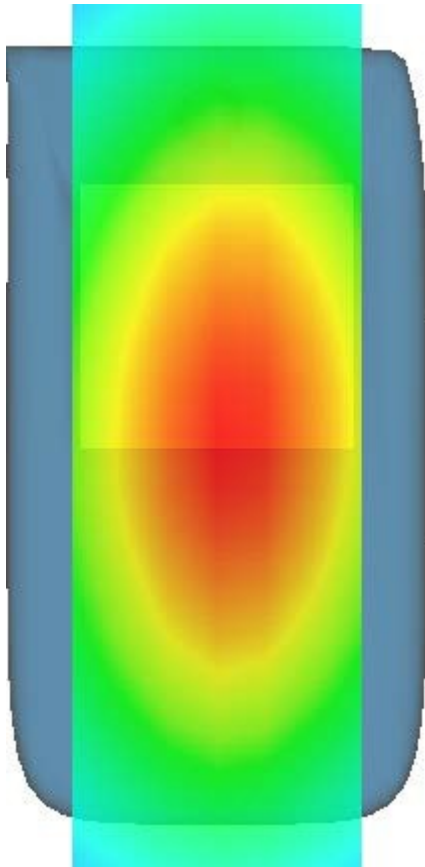
Maximum location: X=-1.00, Y=0.00

SAR Peak: 1.44 W/kg

SAR 10g (W/Kg)	0.644746
SAR 1g (W/Kg)	1.014583

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.1418	0.9674	0.6426	0.4358	0.2947	0.1989	0.1326



3D screen shot	Hot spot position
	

MEASUREMENT 3

Type: Validation measurement (Complete)

Date of measurement: 19/03/2025

Measurement duration: 11 minutes 22 seconds

A. Experimental conditions.

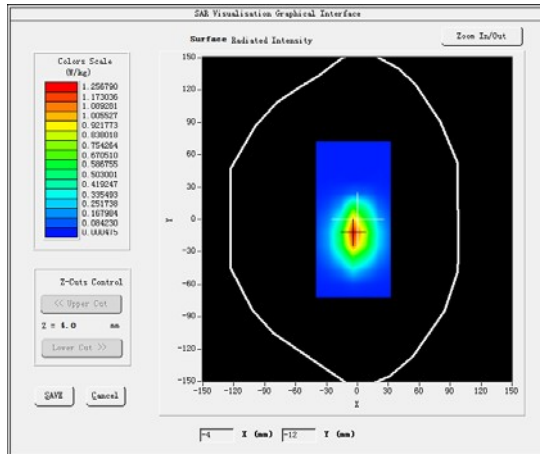
<u>Area Scan</u>	<u>dx=8mm dy=8mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

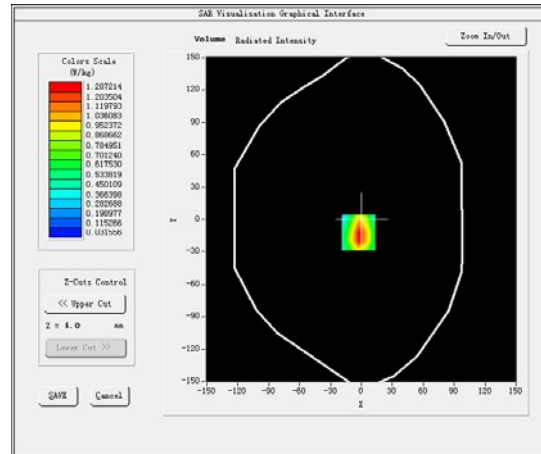
Middle Band SAR (Channel -1):

Frequency (MHz)	1800.000000
Relative permittivity (real part)	40.312505
Relative permittivity (imaginary part)	15.293284
Conductivity (S/m)	1.374256
Variation (%)	-0.410000

SURFACE SAR



VOLUME SAR

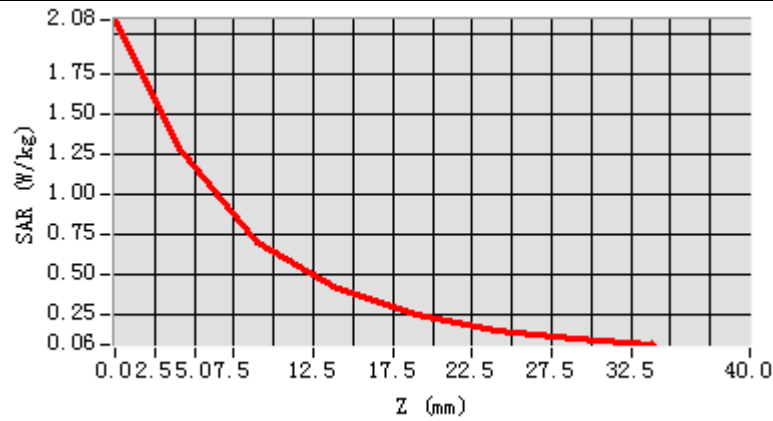


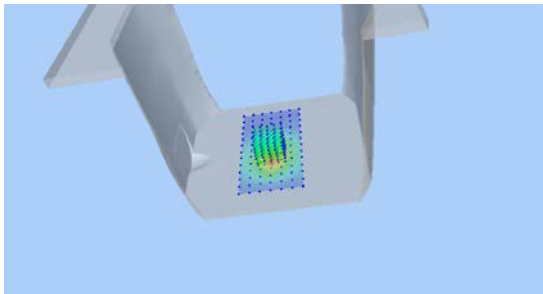
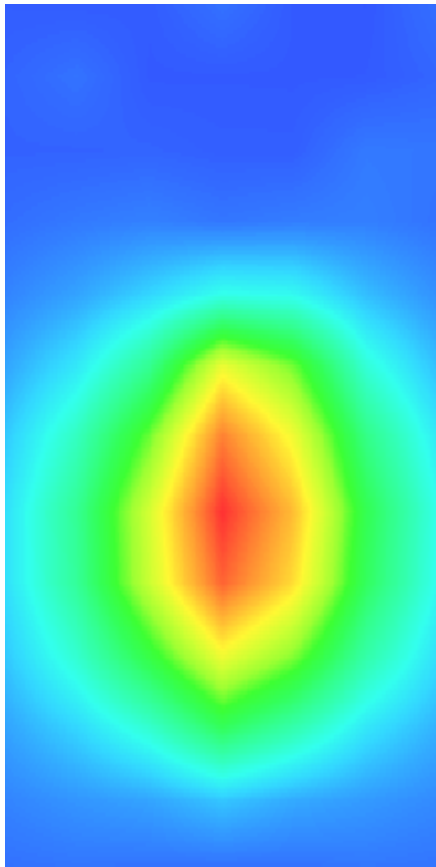
Maximum location: X=-0.00, Y=-0.00

SAR Peak: 7.72 W/kg

SAR 10g (W/Kg)	2.171888
SAR 1g (W/Kg)	4.156173

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	7.7941	4.9087	2.6873	1.5154	0.8724	0.5075	0.2958



3D screen shot	Hot spot position
	

MEASUREMENT 4

Type: Validation measurement (Complete)

Date of measurement: 21/03/2025

Measurement duration: 14 minutes 21 seconds

A. Experimental conditions.

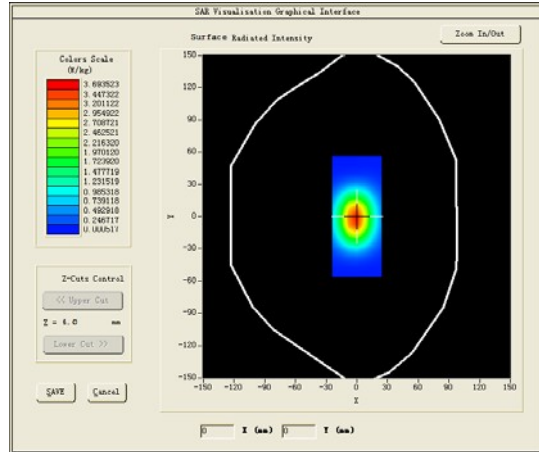
<u>Area Scan</u>	<u>dx=8mm dy=8mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

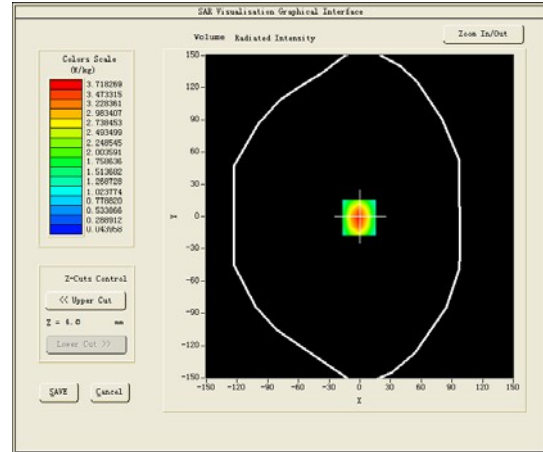
Middle Band SAR (Channel -1):

Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.842045
Relative permittivity (imaginary part)	14.936524
Conductivity (S/m)	1.432741
Variation (%)	-0.450000

SURFACE SAR



VOLUME SAR

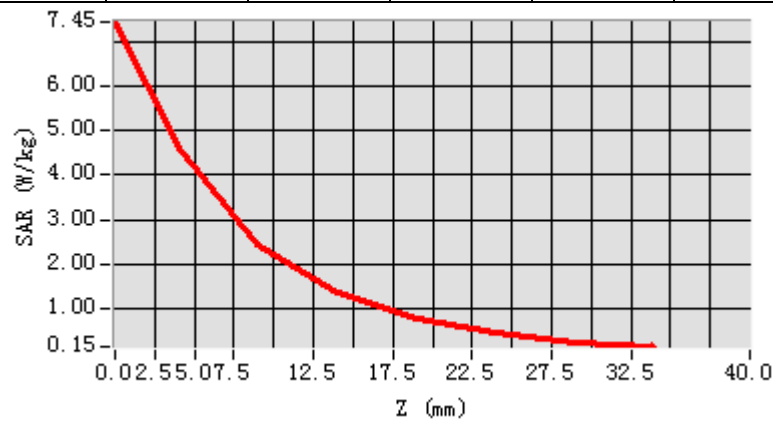


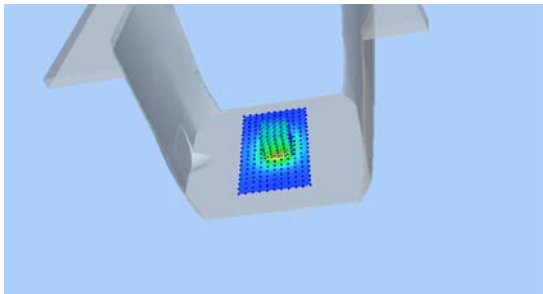
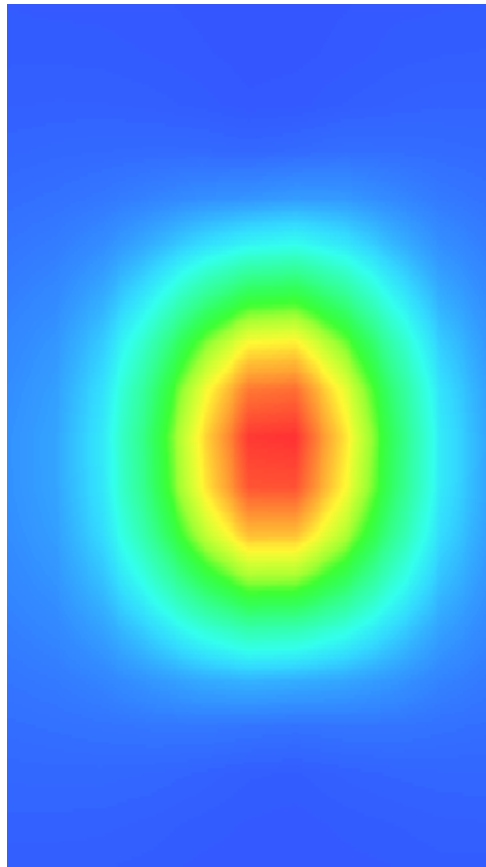
Maximum location: X=1.00, Y=-1.00

SAR Peak: 7.40 W/kg

SAR 10g (W/Kg)	2.093533
SAR 1g (W/Kg)	3.932904

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.7034	3.7183	2.1347	1.2560	0.7338	0.4260	0.2429



3D screen shot	Hot spot position
	

MEASUREMENT 5

Type: Validation measurement (Complete)

Date of measurement: 24/03/2025

Measurement duration: 13 minutes 46 seconds

A. Experimental conditions.

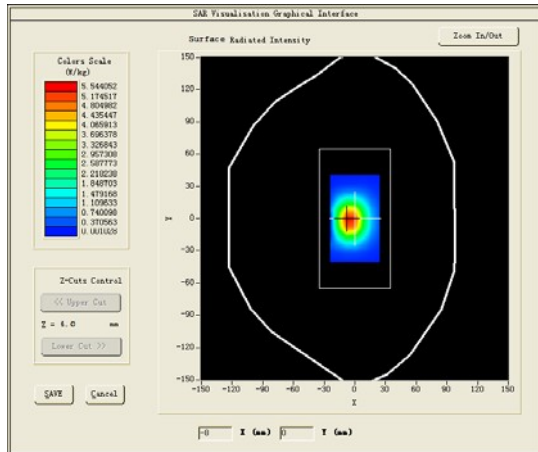
<u>Area Scan</u>	<u>dx=8mm dy=8mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2450</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

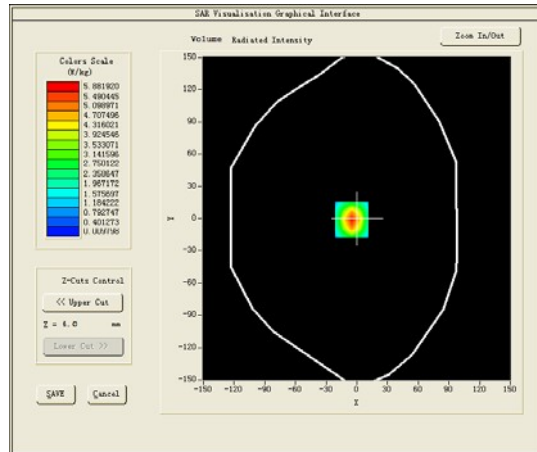
Middle Band SAR (Channel -1):

Frequency (MHz)	2450.000000
Relative permittivity (real part)	40.269142
Relative permittivity (imaginary part)	14.039240
Conductivity (S/m)	1.82349
Variation (%)	0.390000

SURFACE SAR



VOLUME SAR

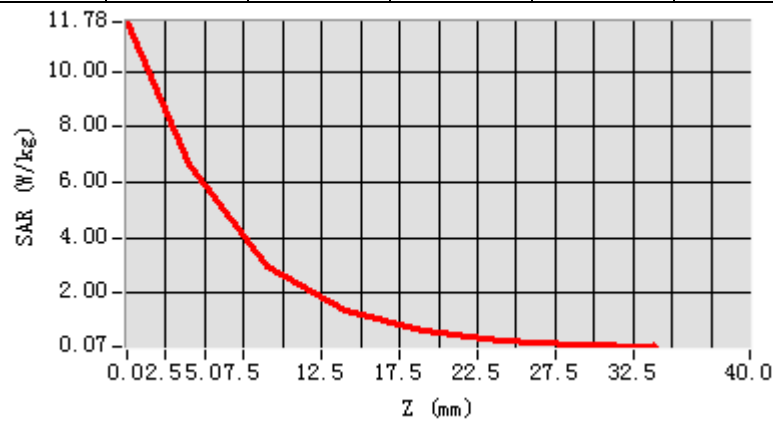


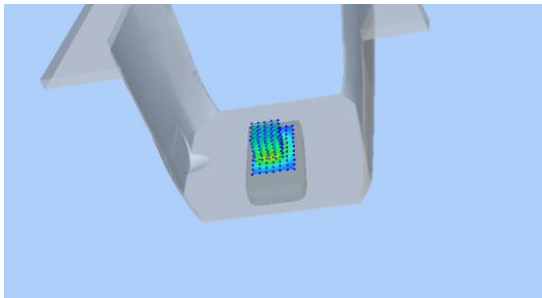
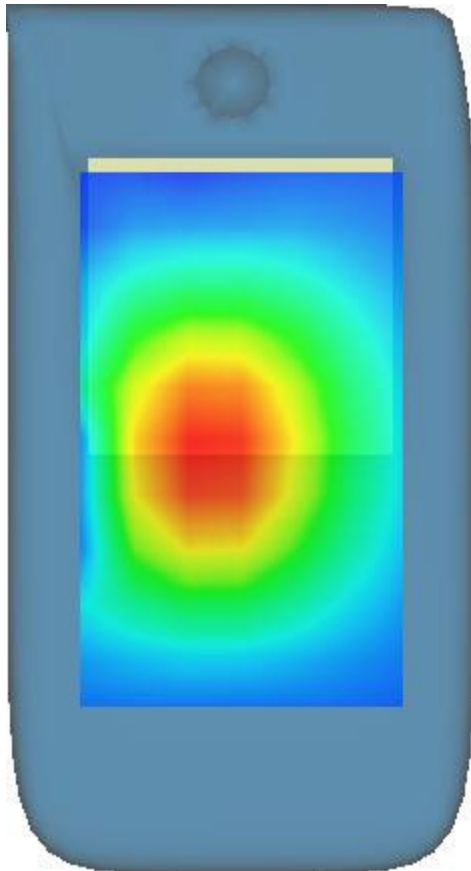
Maximum location: X=5.00, Y=-1.00

SAR Peak: 10.96 W/kg

SAR 10g (W/Kg)	2.343453
SAR 1g (W/Kg)	5.433343

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	10.2188	5.8819	2.7478	1.3151	0.6266	0.2969	0.1341



3D screen shot	Hot spot position
	

MEASUREMENT 6

Type: Validation measurement (Complete)

Date of measurement: 28/03/2025

Measurement duration: 27 minutes 33 seconds

A. Experimental conditions.

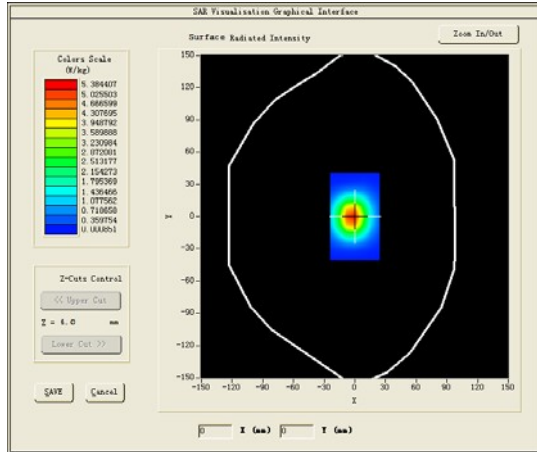
<u>Area Scan</u>	<u>dx=8mm dy=8mm</u>
<u>ZoomScan</u>	<u>8x8x7,dx=4mm dy=4mm</u> <u>dz=2mm,Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2600</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Duty cycle:1.00)</u>

B. SAR Measurement Results

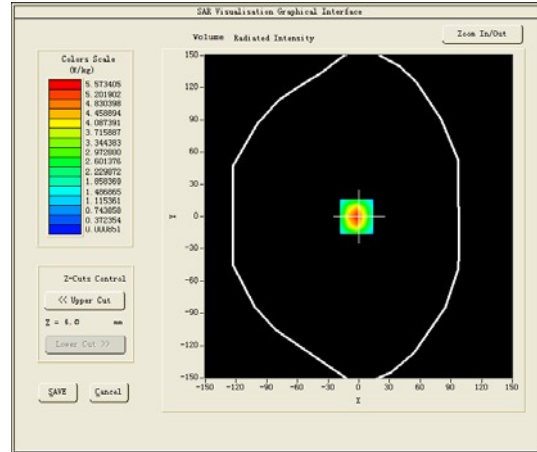
Middle Band SAR (Channel -1):

Frequency (MHz)	2600.000000
Relative permittivity (real part)	39.871280
Relative permittivity (imaginary part)	18.742216
Conductivity (S/m)	1.943201
Variation (%)	0.250000

SURFACE SAR



VOLUME SAR

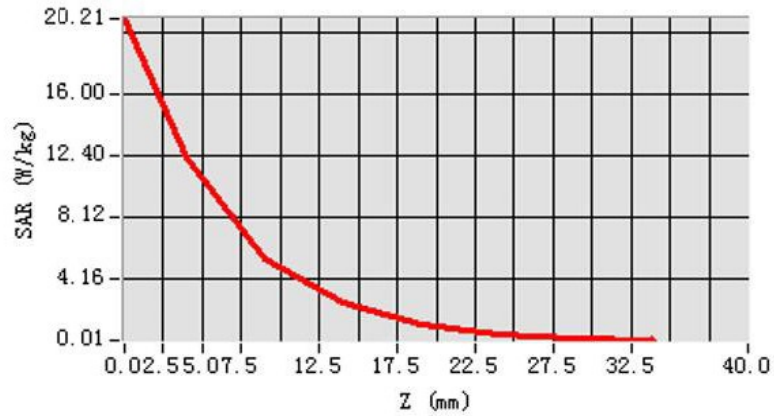


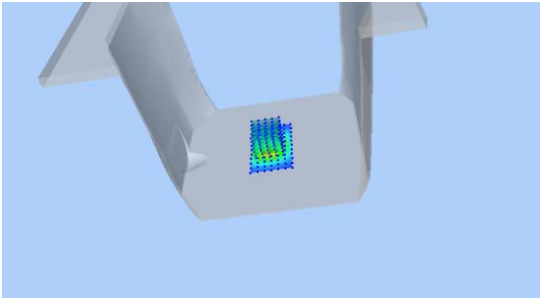
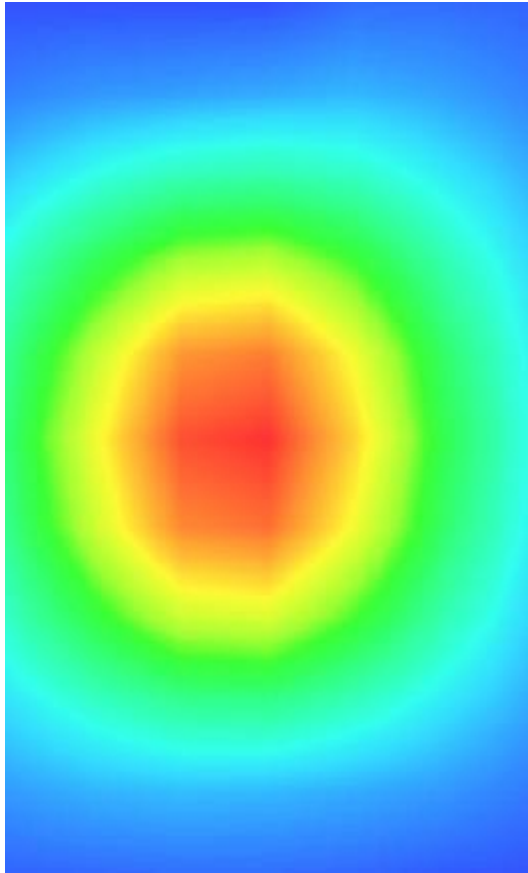
Maximum location: X=-2.00, Y=0.00

SAR Peak: 9.73 W/kg

SAR 10g (W/Kg)	2.342963
SAR 1g (W/Kg)	5.318259

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	9.8044	5.5734	2.5229	1.1430	0.4950	0.1964	0.0689



3D screen shot	Hot spot position
	

	Annex B: Measurement Results
	Tested Model : DWR-932W
	Report Number: WSCT-ANAB-R&E250400022A-SAR

MEASUREMENT 1

Front-side-middle

Type: Phone measurement (Complete)

Date of measurement: 21/03/2025

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

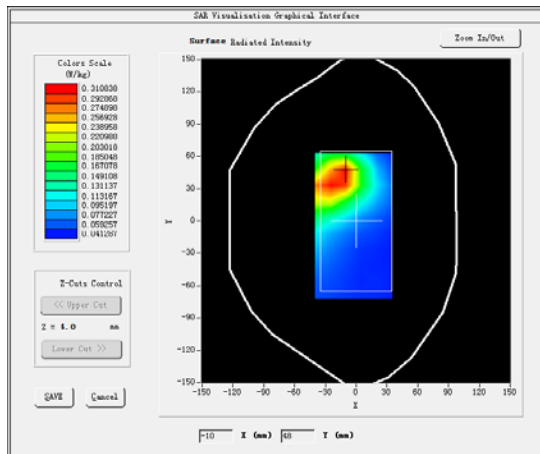
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8, dx=5mm dy=5mm</u> <u>dz=4mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band2_UMTS</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

B. SAR Measurement Results

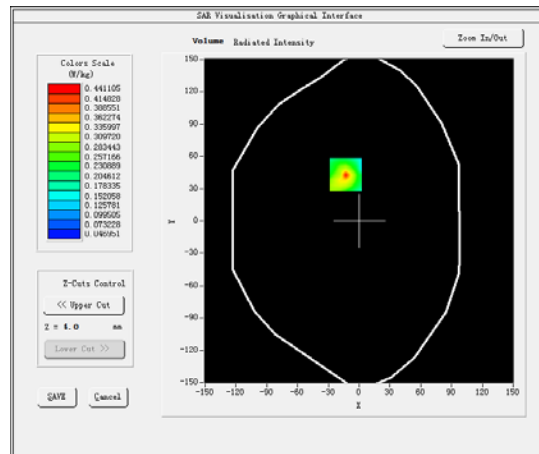
Middle Band SAR (Channel 9538):

Frequency (MHz)	1907.600000
Relative permittivity (real part)	38.842045
Relative permittivity (imaginary part)	14.936524
Conductivity (S/m)	1.432741
Variation (%)	-0.970000

SURFACE SAR



VOLUME SAR

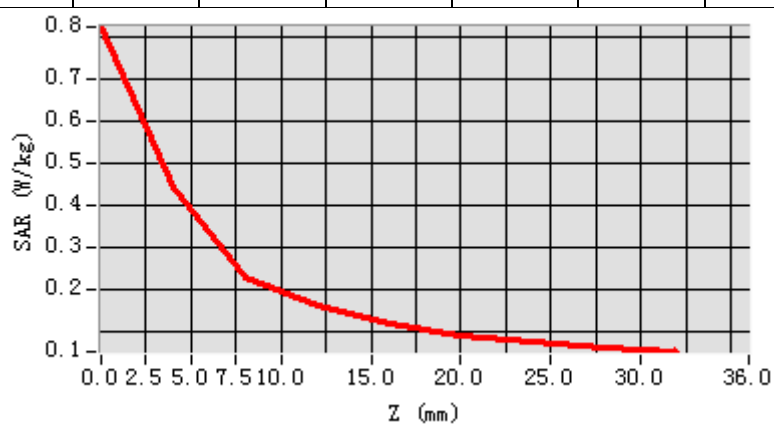


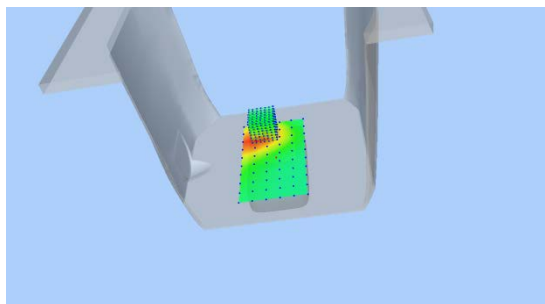
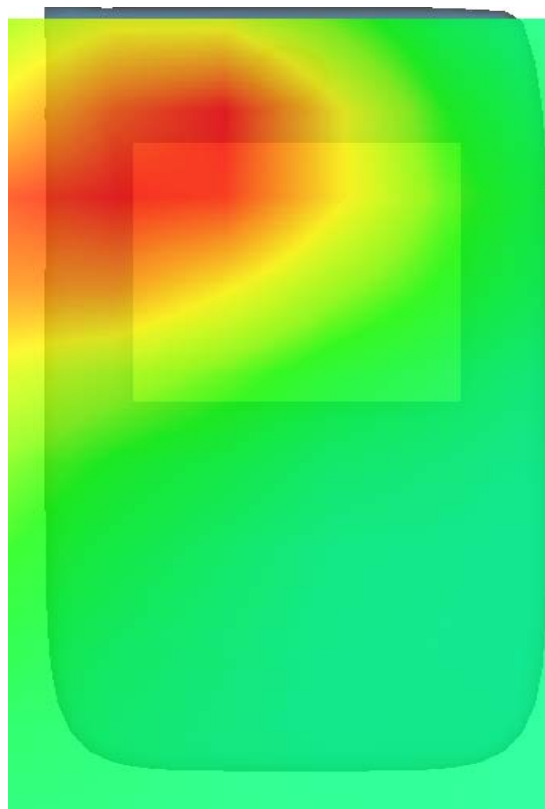
Maximum location: X=-13.00, Y=43.00

SAR Peak: 0.80 W/kg

SAR 10g (W/Kg)	0.274153
SAR 1g (W/Kg)	0.564120

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.8231	0.4411	0.2286	0.1636	0.1172	0.0914	0.0758	0.0603



3D screen shot	Hot spot position
	

MEASUREMENT 2

Front-side-middle

Type: Phone measurement (Complete)

Date of measurement: 19/03/2025

Measurement duration: 13 minutes 16 seconds

A. Experimental conditions.

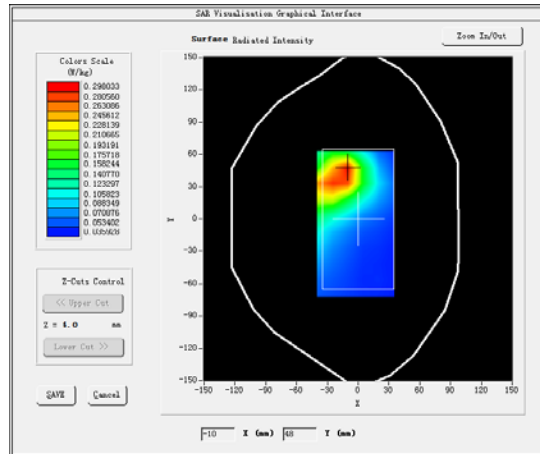
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8, dx=5mm dy=5mm</u> <u>dz=4mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band4_UMTS</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

B. SAR Measurement Results

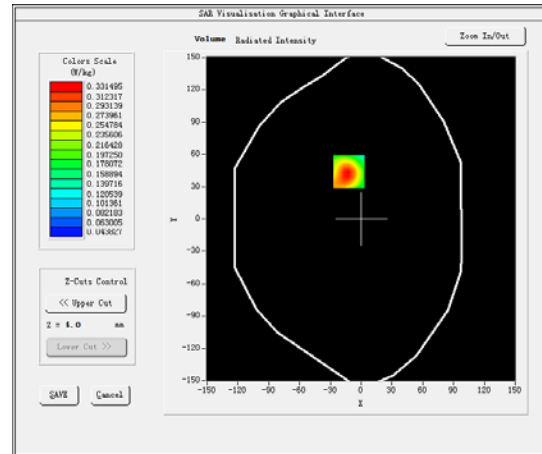
Middle Band SAR (Channel 1712.4):

Frequency (MHz)	1712.400000
Relative permittivity (real part)	40.312505
Relative permittivity (imaginary part)	15.293284
Conductivity (S/m)	1.374256
Variation (%)	-0.460000

SURFACE SAR



VOLUME SAR

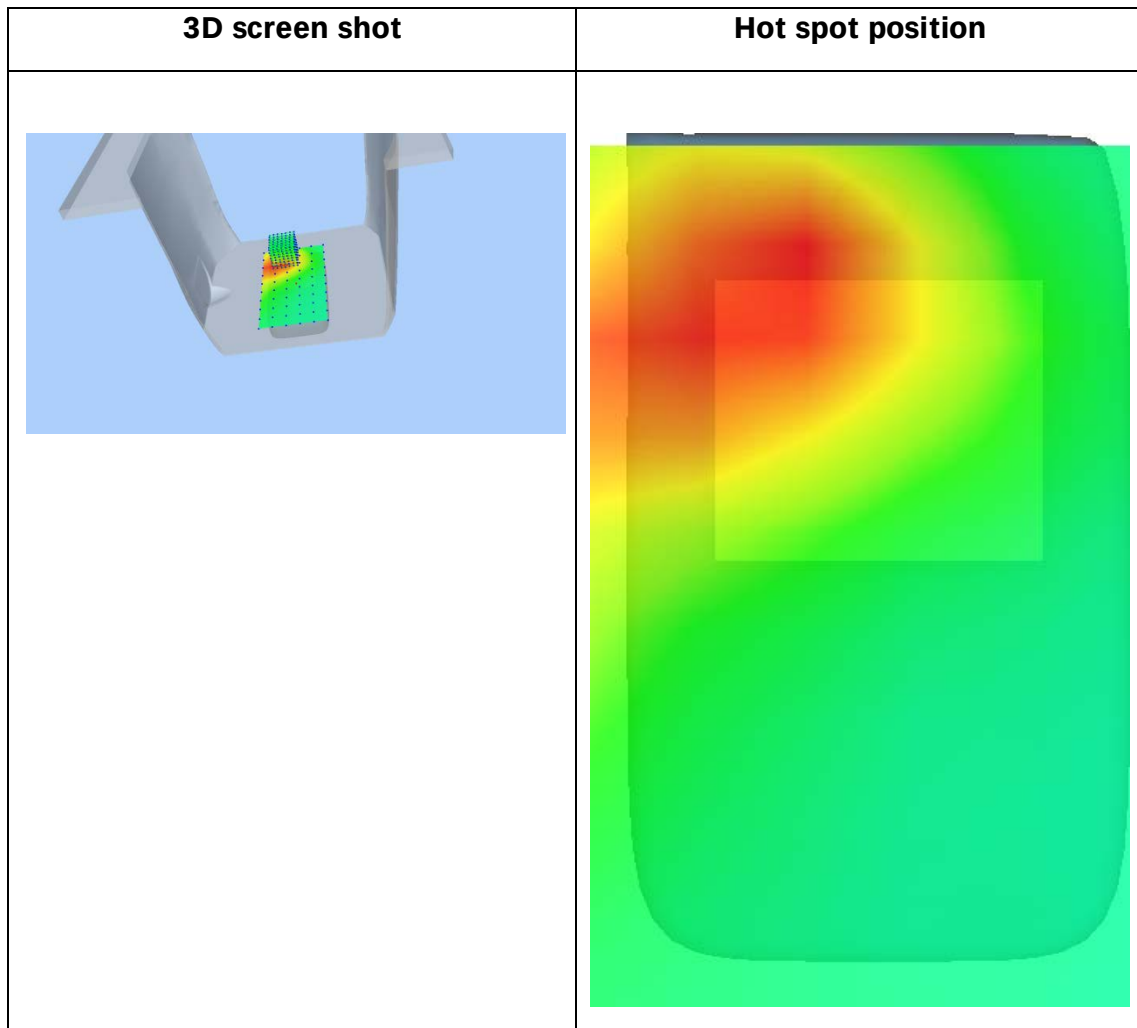
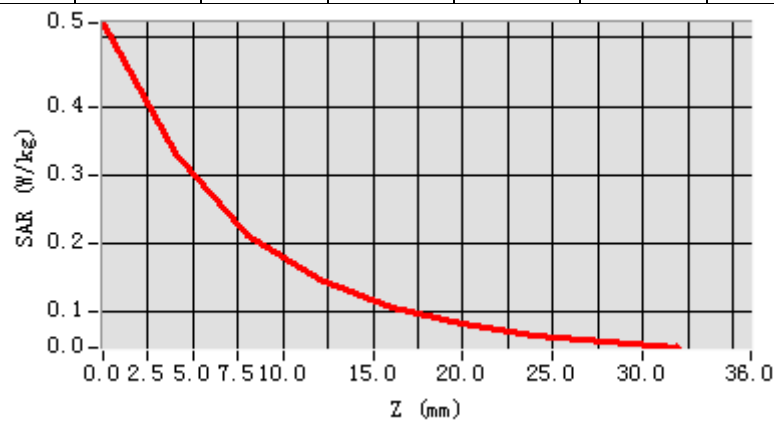


Maximum location: X=-12.00, Y=44.00

SAR Peak: 0.52 W/kg

SAR 10g (W/Kg)	0.381755
SAR 1g (W/Kg)	0.783956

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.52 16	0.331 5	0.212 7	0.149 1	0.108 2	0.084 7	0.065 6	0.056 2



MEASUREMENT 3

Front-side-20M-1RB#99-middle

Type: Phone measurement (Complete)

Date of measurement: 21/03/2025

Measurement duration: 14 minutes 32 seconds

A. Experimental conditions.

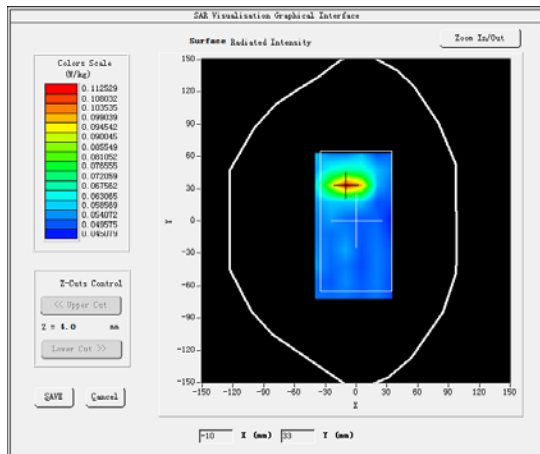
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8,dx=5mm dy=5mm</u> <u>dz=4mm,Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE Band 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

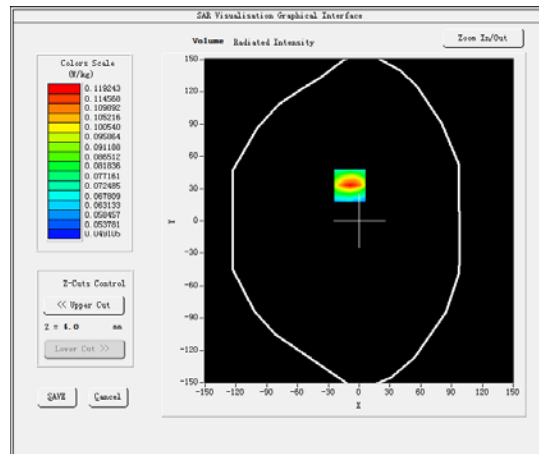
Middle Band SAR (Channel 18700):

Frequency (MHz)	1860.000000
Relative permittivity (real part)	38.842045
Relative permittivity (imaginary part)	14.936524
Conductivity (S/m)	1.432741
Variation (%)	-0.700000

SURFACE SAR



VOLUME SAR

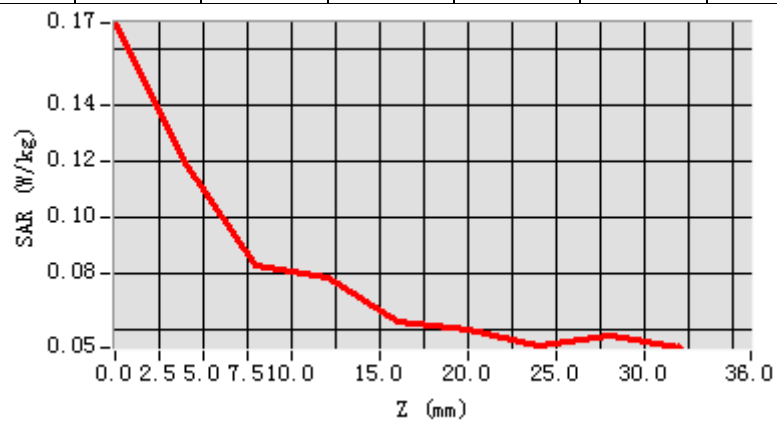


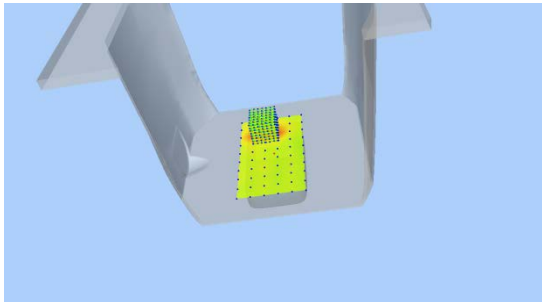
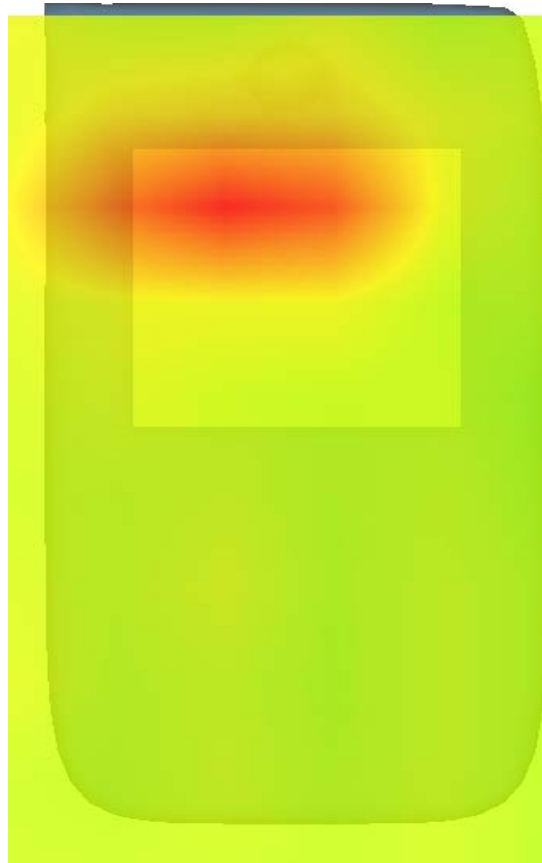
Maximum location: X=-9.00, Y=33.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.230745
SAR 1g (W/Kg)	0.466857

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.1693	0.1192	0.0832	0.0784	0.0628	0.0599	0.0540	0.0580



3D screen shot	Hot spot position
	

MEASUREMENT 4

Phantom -side-middle

Type: Phone measurement (Complete)

Date of measurement: 24/03/2025

Measurement duration: 18 minutes 39 seconds

A. Experimental conditions.

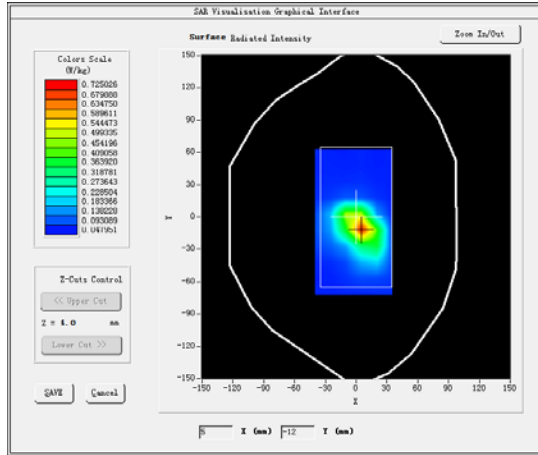
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8,dx=5mm dy=5mm</u> <u>dz=4mm,Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11b ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.b (Crest factor: 1.0)</u>

B. SAR Measurement Results

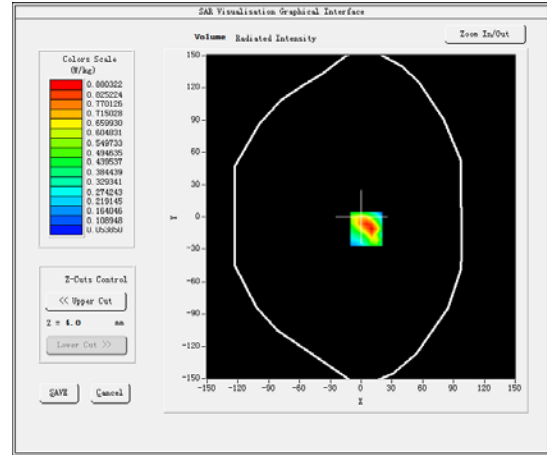
Middle Band SAR (Channel 6):

Frequency (MHz)	2437.000000
Relative permittivity (real part)	40.269142
Relative permittivity (imaginary part)	14.039240
Conductivity (S/m)	1.82349
Variation (%)	-0.660000

SURFACE SAR



VOLUME SAR

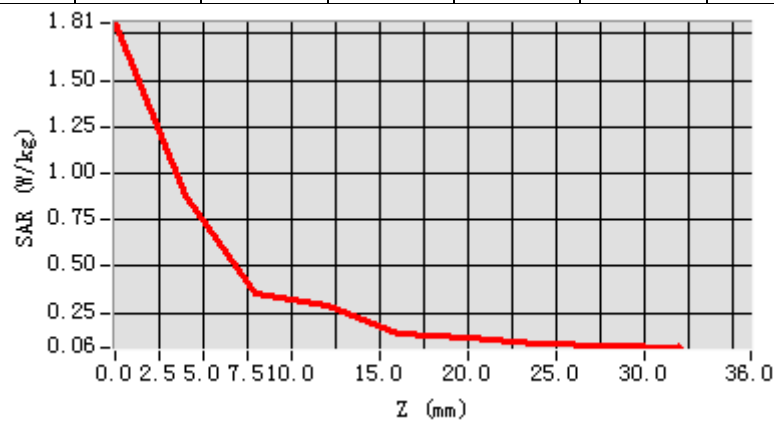


Maximum location: X=5.00, Y=-11.00

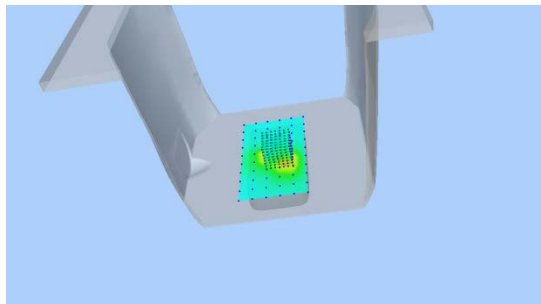
SAR Peak: 1.55 W/kg

SAR 10g (W/Kg)	0.220147
SAR 1g (W/Kg)	0.408596

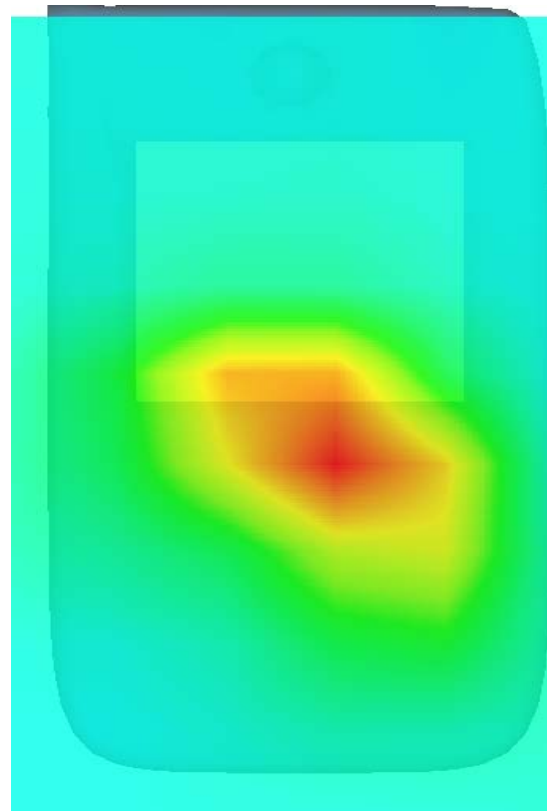
Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	1.8073	0.8803	0.3490	0.2884	0.1411	0.1201	0.0808	0.0742



3D screen shot



Hot spot position



MEASUREMENT 5

Front-side-20M-1RB#99-middle

Type: Phone measurement (Complete)

Date of measurement: 19/03/2025

Measurement duration: 18 minutes 47 seconds

A. Experimental conditions.

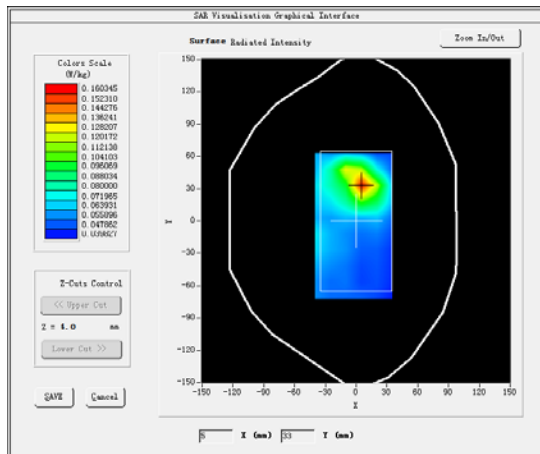
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8,dx=5mm dy=5mm</u> <u>dz=4mm,Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

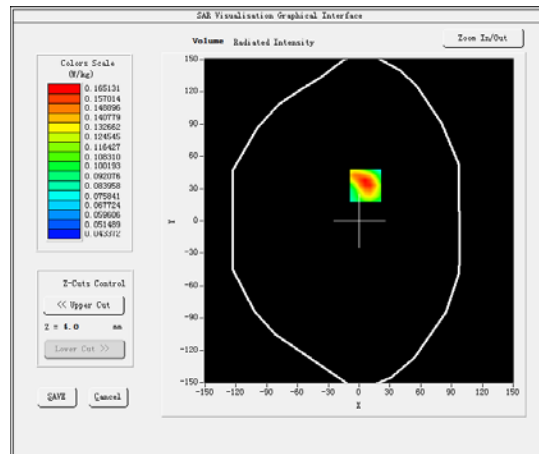
Middle Band SAR (Channel 20325:

Frequency (MHz)	1747.500000
Relative permittivity (real part)	<u>40.312505</u>
Relative permittivity (imaginary part)	<u>15.293284</u>
Conductivity (S/m)	<u>1.374256</u>
Variation (%)	0.200000

SURFACE SAR



VOLUME SAR

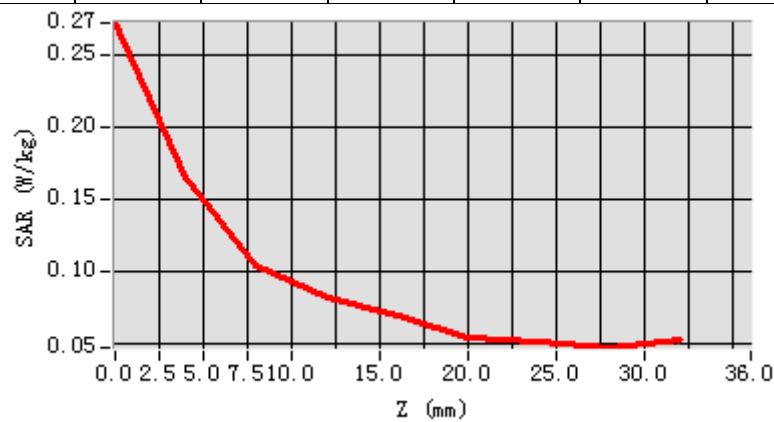


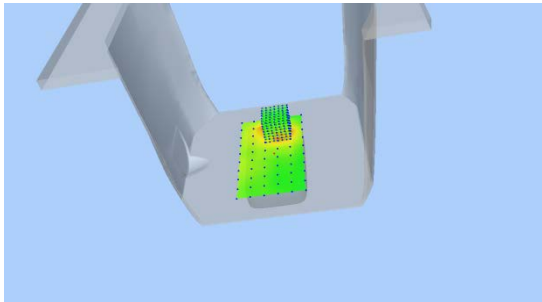
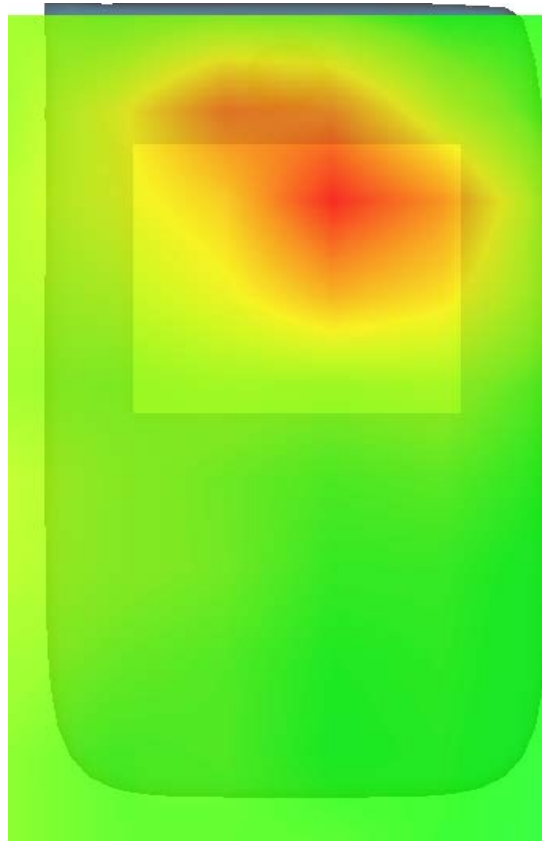
Maximum location: X=6.00, Y=33.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.385421
SAR 1g (W/Kg)	0.782598

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.27 27	0.165 1	0.104 8	0.081 7	0.070 4	0.054 0	0.052 4	0.047 7



3D screen shot	Hot spot position
	

MEASUREMENT 6

Rear-side-10M-1RB#49-middle

Type: Phone measurement (Complete)

Date of measurement: 17/03/2025

Measurement duration: 18 minutes 36 seconds

A. Experimental conditions.

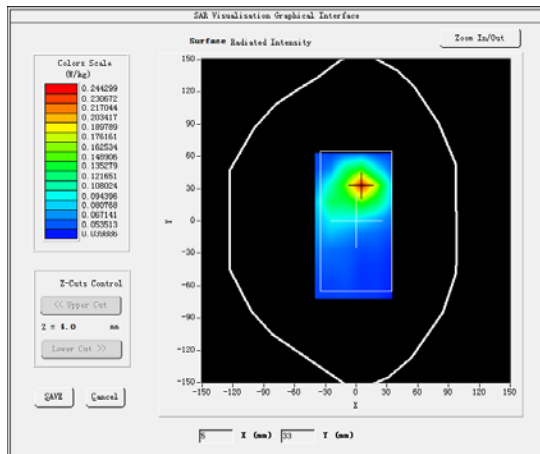
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8, dx=5mm dy=5mm</u> <u>dz=4mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

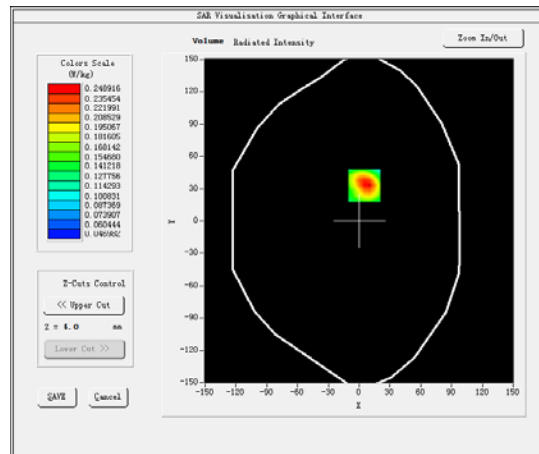
Middle Band SAR (Channel 20450:

Frequency (MHz)	829.000000
Relative permittivity (real part)	40.534712
Relative permittivity (imaginary part)	21.274156
Conductivity (S/m)	0.926581
Variation (%)	1.110000

SURFACE SAR



VOLUME SAR

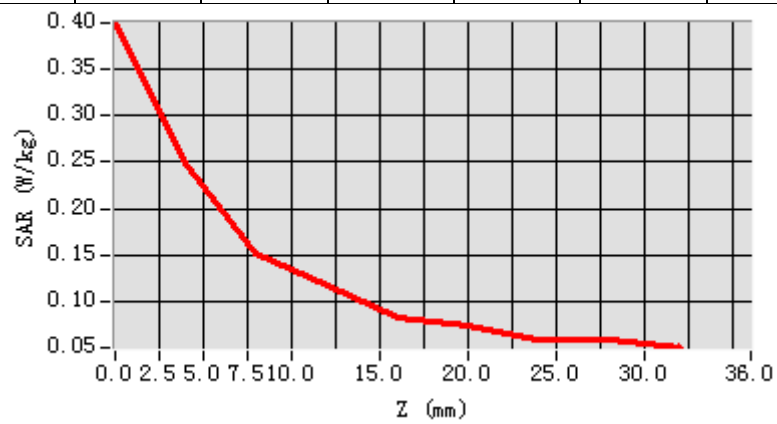


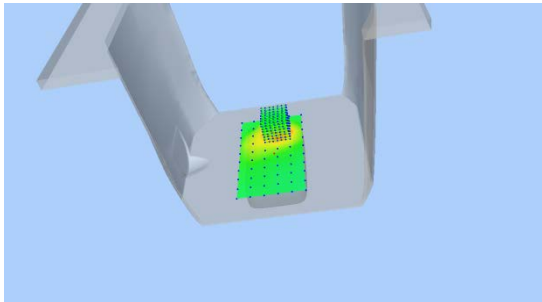
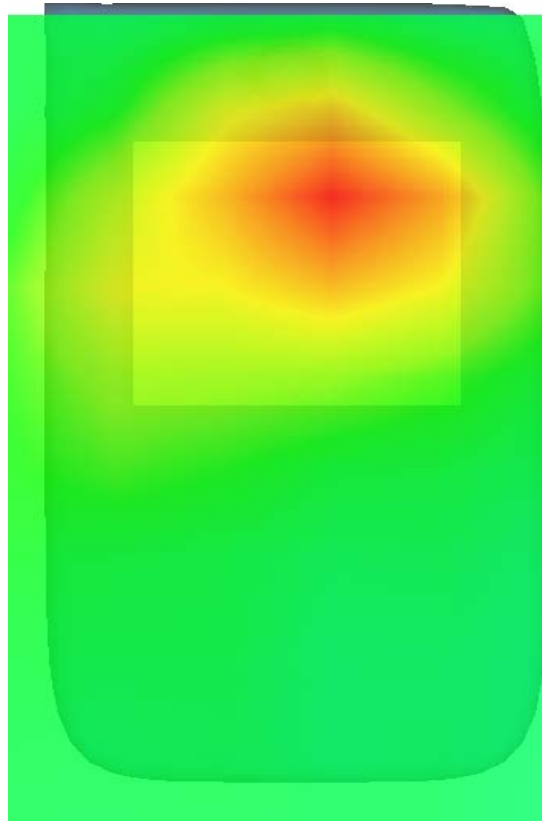
Maximum location: X=5.00, Y=33.00

SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.266854
SAR 1g (W/Kg)	0.428759

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.40 05	0.248 9	0.152 2	0.117 7	0.081 0	0.073 3	0.059 0	0.057 5



3D screen shot	Hot spot position
	

MEASUREMENT 7

Front-side-20M-1RB#99-middle

Type: Phone measurement (Complete)

Date of measurement: 28/03/2025

Measurement duration: 18 minutes 18 seconds

A. Experimental conditions.

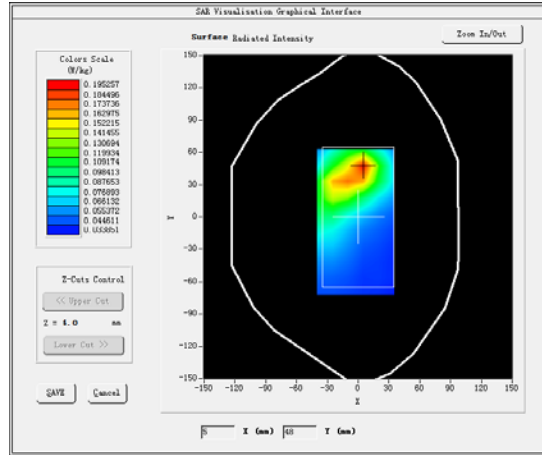
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8, dx=5mm dy=5mm</u> <u>dz=4mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 7</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

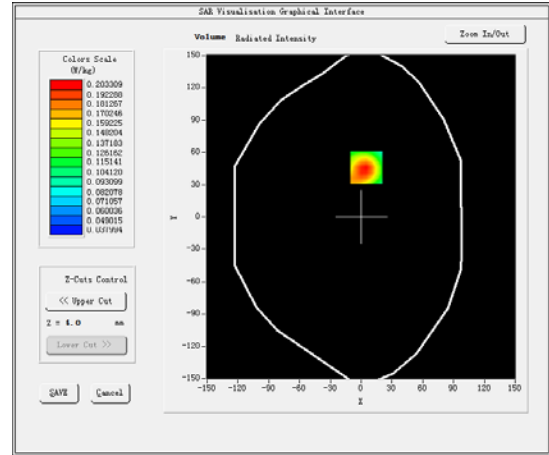
Middle Band SAR (Channel 21100):

Frequency (MHz)	2535.00000
Relative permittivity (real part)	39.871280
Relative permittivity (imaginary part)	18.742216
Conductivity (S/m)	1.943201
Variation (%)	-1.900000

SURFACE SAR



VOLUME SAR

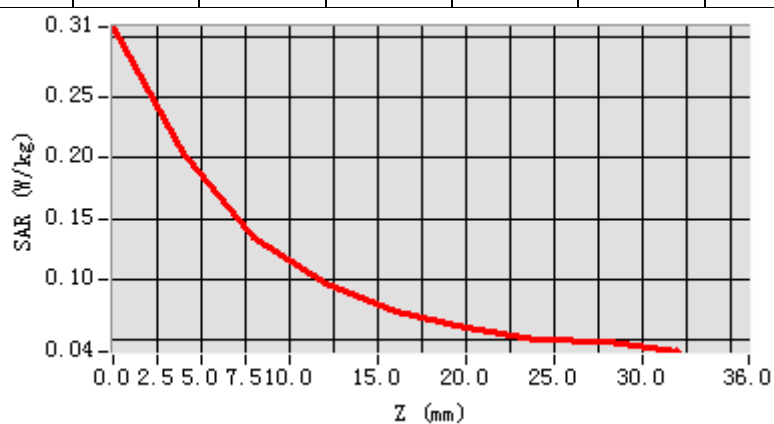


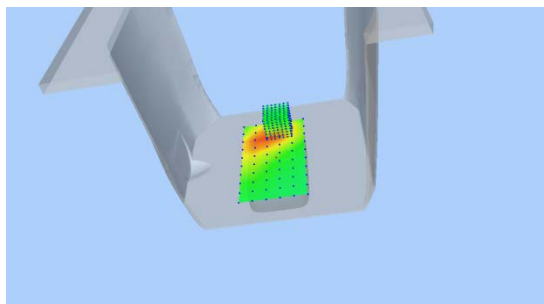
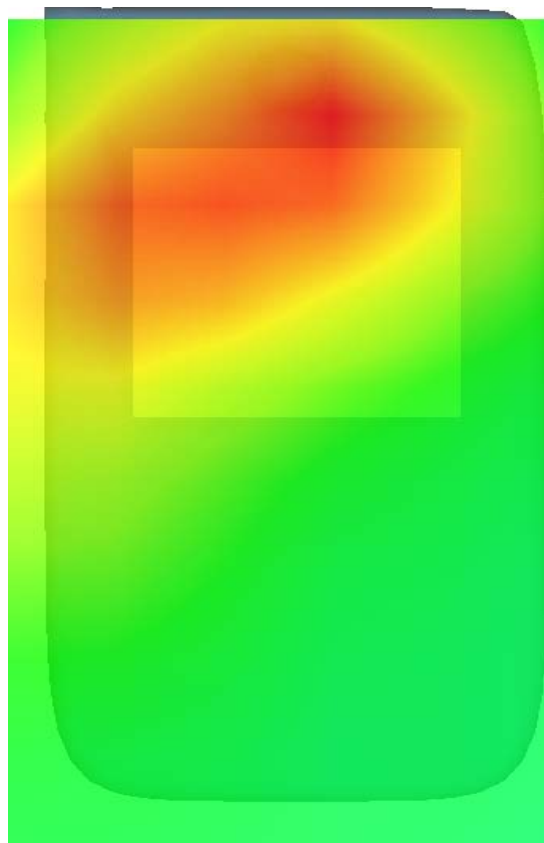
Maximum location: X=5.00, Y=46.00

SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.322145
SAR 1g (W/Kg)	0.770452

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.3081	0.2033	0.1337	0.0964	0.0729	0.0596	0.0502	0.0488



3D screen shot	Hot spot position
	

MEASUREMENT 8

Rear-side-20M-1RB#49-middle

Type: Phone measurement (Complete)

Date of measurement: 17/03/2025

Measurement duration: 16 minutes 2 seconds

A. Experimental conditions.

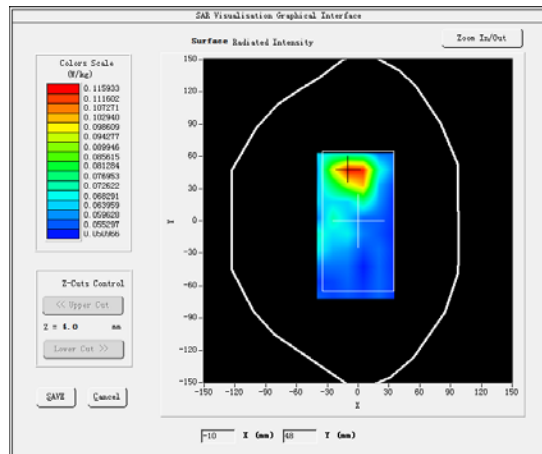
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8, dx=5mm dy=5mm</u> <u>dz=4mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

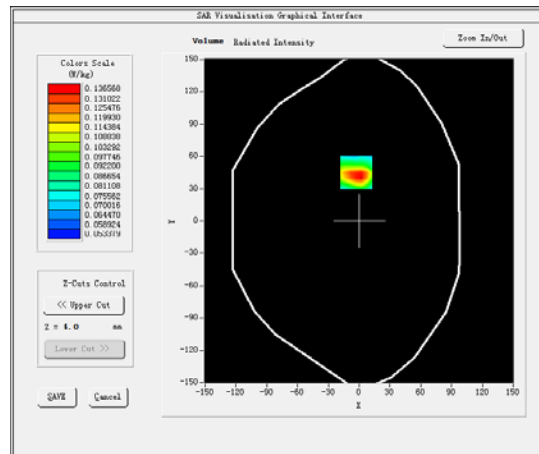
Middle Band SAR (Channel 23095):

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.350601
Relative permittivity (imaginary part)	21.254601
Conductivity (S/m)	0.885608
Variation (%)	-4.390000

SURFACE SAR



VOLUME SAR

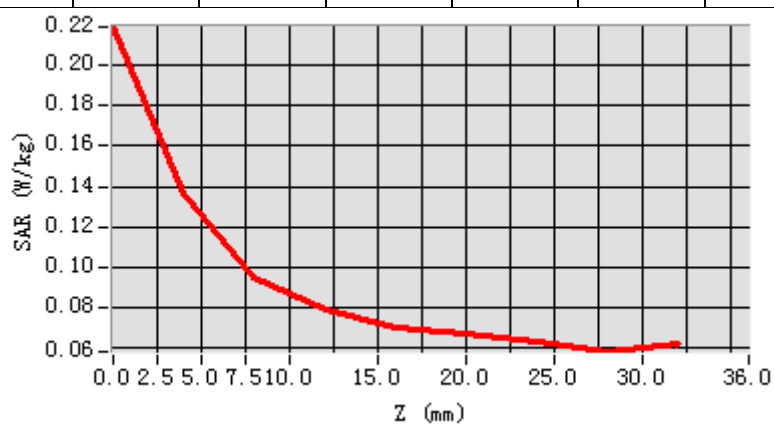


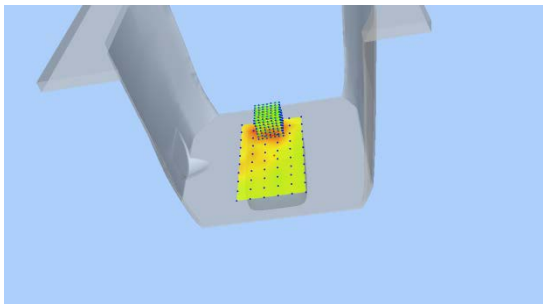
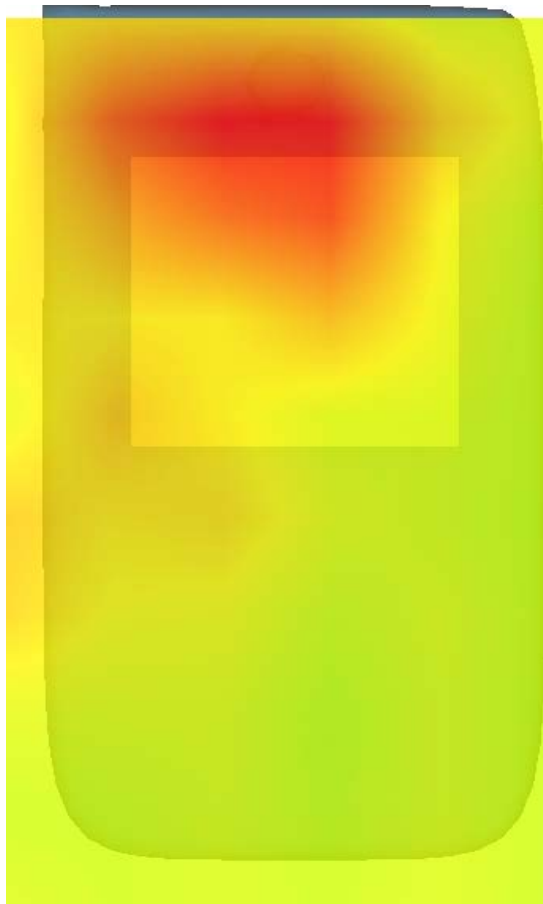
Maximum location: X=-3.00, Y=45.00

SAR Peak: 0.20 W/kg

SAR 10g (W/Kg)	0.204789
SAR 1g (W/Kg)	0.311572

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.2189	0.1366	0.0948	0.0788	0.0701	0.0669	0.0632	0.0582



3D screen shot	Hot spot position
	

MEASUREMENT 9

Rear-side-20M-1RB#50-middle

Type: Phone measurement (Complete)

Date of measurement: 28/03/2025

Measurement duration: 14 minutes 26 seconds

A. Experimental conditions.

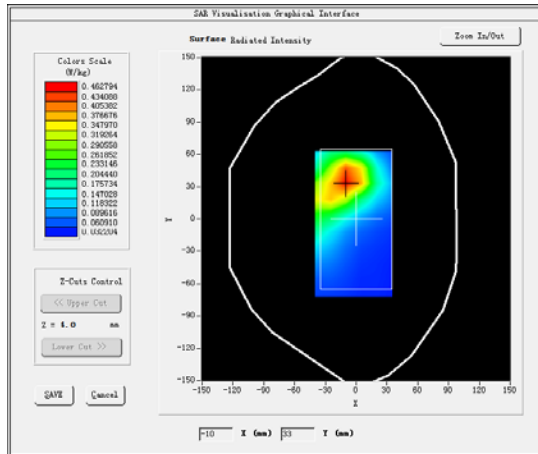
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8, dx=5mm dy=5mm</u> <u>dz=4mm, Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 41(5M)</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>Duty Cycle: 1.00 (Crest factor: 1.0)</u>

B. SAR Measurement Results

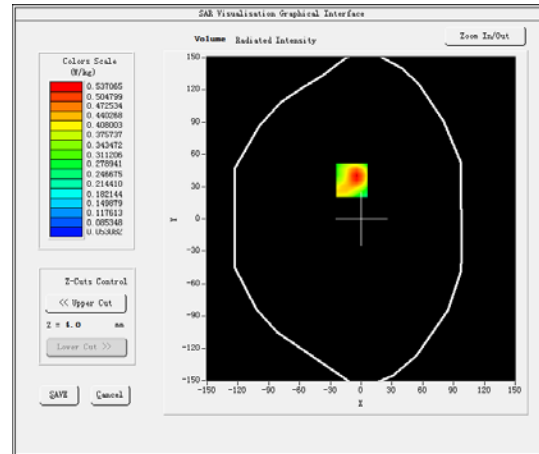
Middle Band SAR (Channel 40620):

Frequency (MHz)	2593.000000
Relative permittivity (real part)	39.871280
Relative permittivity (imaginary part)	18.742216
Conductivity (S/m)	1.943201
Variation (%)	1.030000

SURFACE SAR



VOLUME SAR

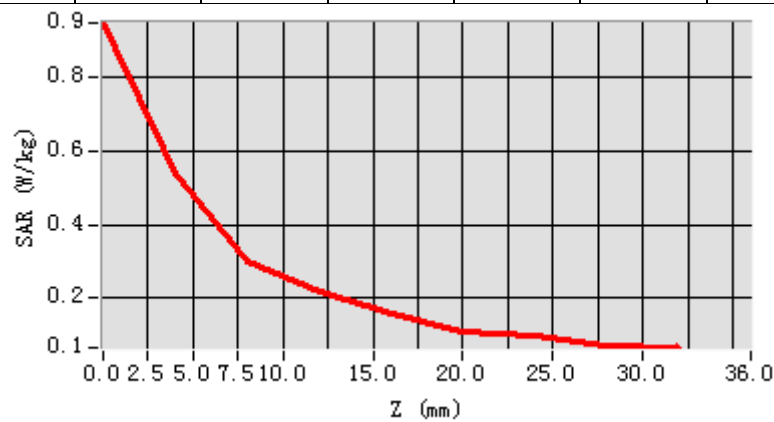


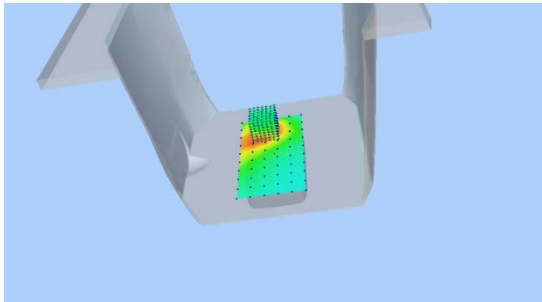
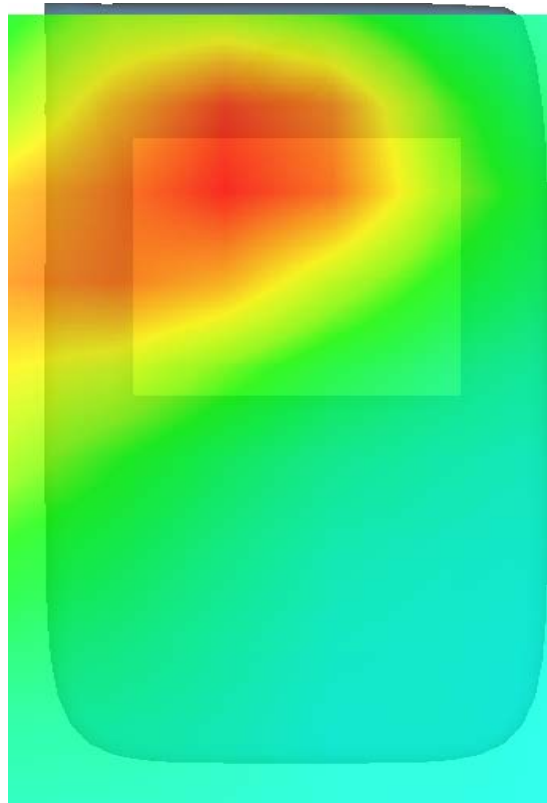
Maximum location: X=-9.00, Y=36.00

SAR Peak: 0.87 W/kg

SAR 10g (W/Kg)	0.145899
SAR 1g (W/Kg)	0.354875

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.94 71	0.537 1	0.299 1	0.216 3	0.157 3	0.111 5	0.095 9	0.073 1



3D screen shot	Hot spot position
	

MEASUREMENT 10

Rear-side-20M-1RB#50-middle

Type: Phone measurement (Complete)

Date of measurement: 28/03/2025

Measurement duration: 14 minutes 26 seconds

A. Experimental conditions.

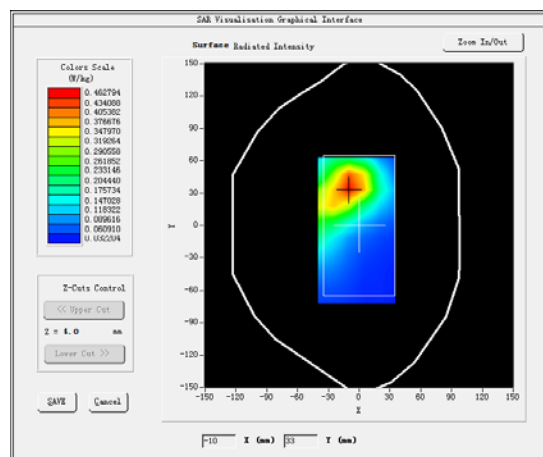
<u>Area Scan</u>	<u>dx=15mm dy=15mm</u>
<u>ZoomScan</u>	<u>7x7x8,dx=5mm dy=5mm</u> <u>dz=4mm,Complete</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 41(10M)</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>Duty Cycle: 1.00 (Crest factor: 1.0)</u>

B. SAR Measurement Results

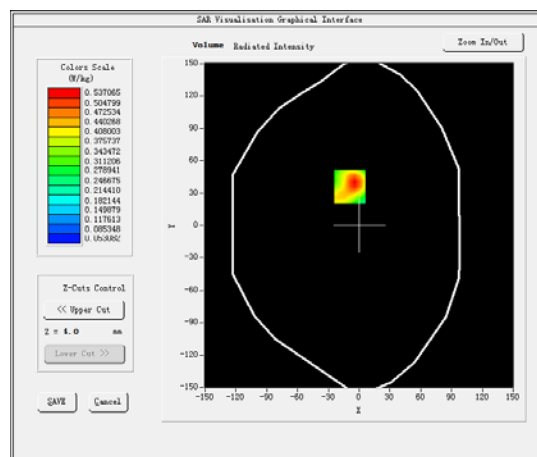
Middle Band SAR (Channel 40620):

Frequency (MHz)	2593.000000
Relative permittivity (real part)	39.871280
Relative permittivity (imaginary part)	18.742216
Conductivity (S/m)	1.943201
Variation (%)	-2.950000

SURFACE SAR



VOLUME SAR

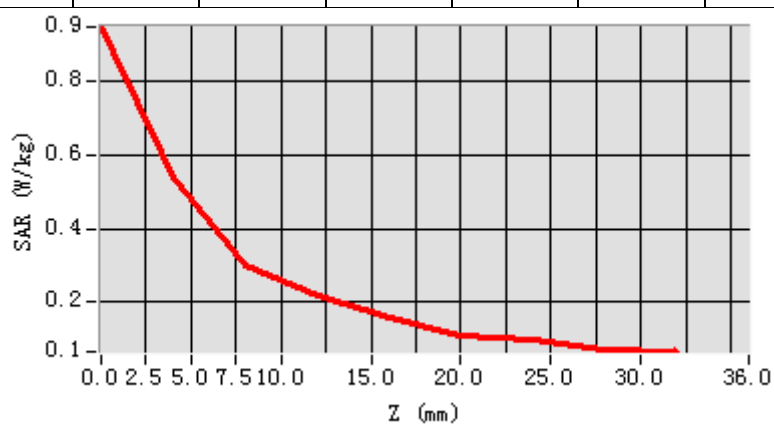


Maximum location: X=-9.00, Y=36.00

SAR Peak: 0.87 W/kg

SAR 10g (W/Kg)	0.152843
SAR 1g (W/Kg)	0.360857

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.94 71	0.537 1	0.299 1	0.216 3	0.157 3	0.111 5	0.095 9	0.073 1



3D screen shot	Hot spot position
