SAR Test Report

Report No.: AGC08217200301FH01

APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	BOHA!™ tablet
BRAND NAME	:	BOHA!™
MODEL NAME	:	10 inch Tablet PC, BOHA!™ tablet
APPLICANT	:	TransAct Technologies Inc
DATE OF ISSUE	:	Jul 17,2020
STANDARD(S)	:	IEEE Std. 1528:2013 FCC 47 CFR Part 2§2.1093:2013 IEEE C95.1TM:2005 IEC 62209-1: 2016
REPORT VERSION	:	V1.0

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

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul 17,2020	Valid	Initial Release

Test Report

Applicant Name	TransAct Technologies Inc
Applicant Address	2319 Whitney Avenue, Suite 3B Hamden, CT 06518, USA
Manufacturer Name	ERHINO TECHNOLOGY LTD.
Manufacturer Address	2602A, Block A, World Trade Plaza, Fuhong Road, Futian Dist., Shenzhen, Guangdong, China
Factory Name	TransAct Technologies Inc
Factory Address	One Hamden Center, 2319 Whitney Avenue, Suite 3B Hamden, CT 06518, USA
Product Designation	BOHA!™ tablet
Brand Name	BOHA!™
Model Name	10 inch Tablet PC, BOHA!™ tablet
Different Description	All the same except model name. The test model is 10 inch Tablet PC.
EUT Voltage	DC3.8V by battery
Applicable Standard	IEEE Std. 1528:2013 FCC 47 CFR Part 2§2.1093:2013 IEEE C95.1TM:2005 IEC 62209-1: 2016
Test Date	Mar. 17,2020 to May 20,2020
Report Template	AGCRT-US-4G/SAR (2018-01-01)

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

Prepared By — Jack Gui (Project Engineer) — May 20,2020

Reviewed By — Angela Li (Reviewer) — Jul 17,2020

Approved By — Forrest Lei (Authorized Officer) — Jul 17,2020

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1. SUMMARY OF MAXIMUM SAR VALUE

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

Frequency Band	Highest Reported 1g-SAR(W/Kg)		SAR Test Limit (W/Kg)
	Body-worn(1RB)	Body-worn(50%RB)	
GSM 850	0.652	--	1.6
PCS 1900	1.196	--	
UMTS Band II	0.534	--	
UMTS Band V	0.725	--	
LTE Band 2	0.773	0.723	
LTE Band 4	0.703	0.564	
LTE Band 12	0.662	0.739	
LTE Band 17	0.653	0.616	
WIFI 2.4G	0.296	--	
5.2 GHz WIFI	0.685	--	
5.8 GHz WIFI	0.755	--	
Simultaneous Reported SAR	1.558		
SAR Test Result	PASS		

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

- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 648474 D04 Handset SAR v01r03
- KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r04
- KDB 941225 D01 3G SAR Procedures v03r01
- KDB 941225 D06 Hotspot Mode v02r01
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02
- KDB 941225 D05 SAR for LTE Devices v02r05
- KDB 616217 D04 SAR for laptop and tablets v01r02

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	BOHA!™ tablet
Test Model	10 inch Tablet PC
Hardware Version	P231_E221_V1.0
Software Version	9.0
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GPRS& EGPRS	
Support Band	☒GSM 850 ☒PCS 1900 ☒GSM 900 ☒DCS 1800
GPRS & EGPRS Type	Class B
GPRS & EGPRS Class	Class 12(1Tx+4Rx, 2Tx+3Rx, 3Tx+2Rx, 4Tx+1Rx)
TX Frequency Range	GSM 850 : 824-849MHz; PCS 1900: 1850-1910MHz;
RX Frequency Range	GSM 850 : 869~894MHz; PCS 1900: 1930~1990MHz
Release Version	R99
Type of modulation	GMSK for GSM/GPRS; GMSK & 8-PSK for EGPRS
Antenna Gain	GSM850: 1.1dBi; PCS1900: 1.2dBi
Max. Average Power	GSM850: 31.76dBm; PCS1900: 29.66dBm
WCDMA	
Support Band	☒UMTS FDD Band II ☒UMTS FDD Band V ☐UMTS FDD Band IV ☒UMTS FDD Band I ☐UMTS FDD Band III ☒UMTS FDD Band VIII
HS Type	HSPA(HSUPA/HSDPA)
TX Frequency Range	FDD Band II: 1850-1910MHz; FDD Band V: 824-849MHz
RX Frequency Range	FDD Band II: 1930-1990MHz; FDD Band V: 869-894MHz
Release Version	Rel-6
Type of modulation	HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK
Antenna Gain	Band II: 1.1dBii; Band V: 1.2dBi
Max. Average Power	Band II: 22.35dBm; Band V: 22.43dBm

EUT Description(Continue)

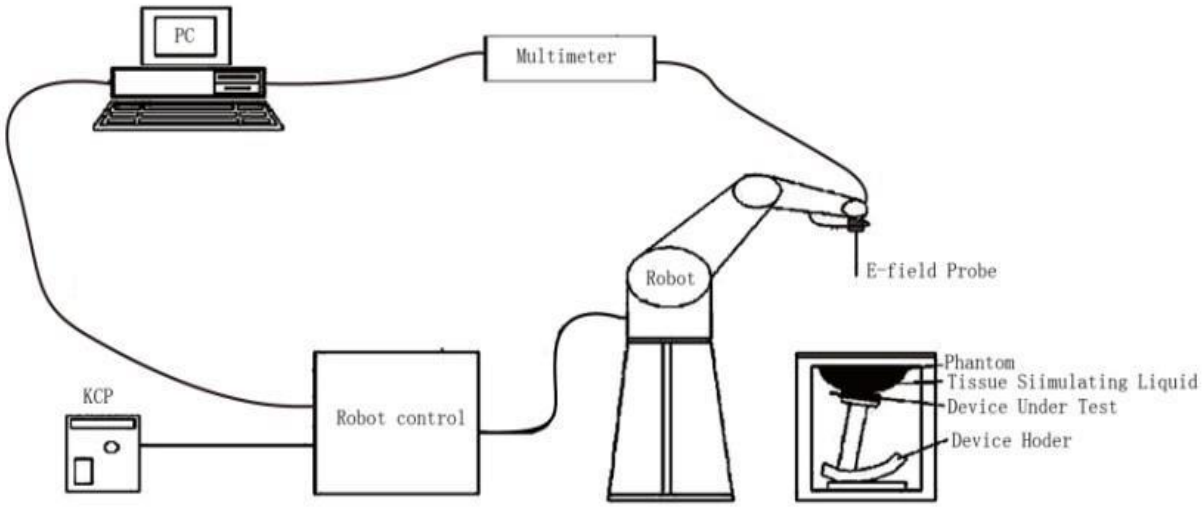
LTE	
Support Band	☒FDD Band 2 ☒FDD Band 4 ☐FDD Band 5 ☐FDD Band 7 ☒FDD Band 12 ☒FDD Band 17 ☐FDD Band 25 ☐FDD Band 26 ☐TDD Band 41 (U.S. Bands) ☐FDD Band 1 ☐FDD Band 3 ☐FDD Band 7 ☐FDD Band 8 ☐FDD Band 20 ☐TDD Band 28 ☐TDD Band 38 ☐FDD Band 40 ☐FDD Band 42 ☐FDD Band 43 (Non-U.S. Bands)
TX Frequency Range	Band 2:1850-1910MHz; Band 4:1710-1755MHz; Band 12:699-716MHz; Band 17: 704-716MHz;
RX Frequency Range	Band 2:1930-1990MHz; Band 4:2110-2155MHz; Band 12: 729-746 MHz; Band 17: 734-746 MHz;
Release Version	Rel-8
Type of modulation	QPSK, 16QAM
Antenna Gain	Band 2: 1.4dBi; Band 4: 1.4dBi; Band 12: 1.2dBi;Band 17: 1.4dBi;
Max. Average Power	Band 2: 23.77dBm; Band 4: 23.26dBm; Band 12: 23.31dBm; Band 17: 23.64dBm;
Bluetooth	
Bluetooth Version	☐V2.0 ☐V2.1 ☐V2.1+EDR ☐V3.0 ☐V3.0+HS ☐V4.0 ☒V4.1
Operation Frequency	2402~2480MHz
Type of modulation	☒GFSK ☒Π/4-DQPSK ☒8-DPSK
Peak Power	7.303dBm
Antenna Gain	1.4dBi
WIFI	
WIFI Specification	☐802.11a ☒802.11b ☒802.11g ☒802.11n(20) ☒802.11n(40)
Operation Frequency	2412~2462MHz
Avg. Burst Power	11b: 15.217dBm,11g:9.769dBm,11n(20):9.631dBm,11n(40):9.808dBm
Antenna Gain	1.4dBi
5GHz WIFI	
WIFI Specification	☒802.11a ☒802.11n20 ☐802.11ac20 ☒802.11n40 ☐802.11ac40 ☐802.11ac80
Operation Frequency	5.180GHz～5.825GHz
Type of modulation	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM,OFDM
EIRP	5.2G:802.11a:11.040 dBm; 802.11n(20): 10.659 dBm; 802.11n(40): 9.335 dBm; 5.8G:802.11a:17.014dBm; 802.11n(20): 16.462 dBm; 802.11n(40):16.582 dBm;
Antenna Gain	1.4dBi
Accessories	
Battery	Brand name: N/A Model No. : PL30100120-6500 Voltage and Capacitance: 3.8 V & 6500mAh
Earphone	Brand name: N/A Model No. : N/A

Note:1.CMU200 can measure the average power and Peak power at the same time
2.The sample used for testing is end product.
3. The test sample has no any deviation to the test method of standard mentioned in page 1.

Product	Type	
	☒ Production unit	☐ Identical Prototype

3. SAR MEASUREMENT SYSTEM

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



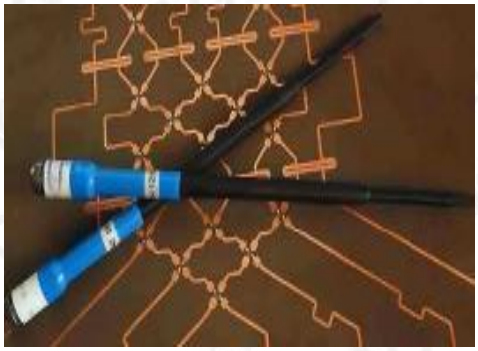
The COMOSAR system for performing compliance tests consists of the following items:

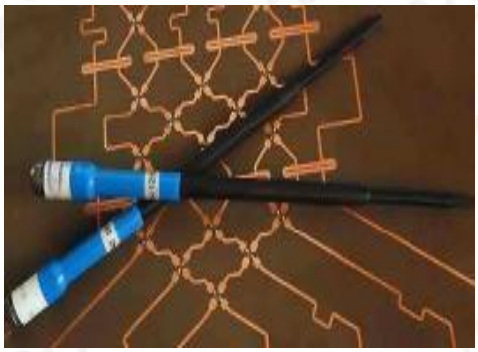
- The PC. It controls most of the bench devices and stores measurement data.A computer running WinXP and the Opensar software.
- The E-Field probe. The probe is a 3-axis system made of 3 distinct dipoles. Each dipole returns a voltage in function of the ambient electric field.
- The Keithley multimeter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

3.2. COMOSAR E-Field Probe

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

Isotropic E-Field Probe Specification

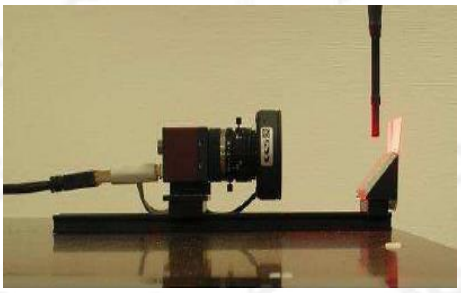
Model	SSE5	
Manufacture	MVG	
Identification No.	SN 22/16 EP315	
Frequency	0.7GHz-3GHz Linearity: ±0.06dB(0.7GHz-3GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity: ±0.06dB	
Dimensions	Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precisin of better 30%.	

Model	SSE2	
Manufacture	MVG	
Identification No.	SN 41/18 EPGO334	
Frequency	0.45GHz-6GHz Linearity: ±0.08dB(0.45GHz-6GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity: ±0.08dB	
Dimensions	Overall length:330mm Length of individual dipoles:2mm Maximum external diameter:8mm Probe Tip external diameter:2.5mm Distance between dipoles/ probe extremity:1mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precisin of better 30%.	

3.3. Robot

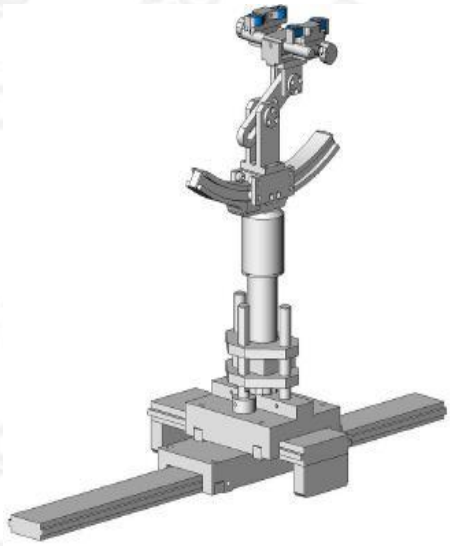
The COMOSAR system uses the KUKA robot from SATIMO SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used. The XL robot series have many features that are important for our application: □ High precision (repeatability 0.02 mm) □ High reliability (industrial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

3.4. Video Positioning System

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

3.5. Device Holder

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



3.6. SAM Twin Phantom

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

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

ELLI39 Phantom

The Flat phantom is a fiberglass shellphantom with 2mm+/- 0.2 mm shell thickness. It has only one measurement area for Flat phantom	

4. SAR MEASUREMENT PROCEDURE

4.1. Specific Absorption Rate (SAR)

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

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

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

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

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

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

Where

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

4.2. SAR Measurement Procedure

Step 1: Power Reference Measurement

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

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in SATIMO software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in db) is specified in the standards for compliance testing. For example, a 2db range is required in IEEE Standard 1528 and IEC62209 standards, whereby 3db is a requirement when compliance is assessed in accordance with the ARIB standard (Japan) If one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximum are detected, the number of Zoom Scan has to be increased accordingly.

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

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

Step 3: Zoom Scan

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

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

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

Step 4: Power Drift Measurement

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

4.3. RF Exposure Conditions

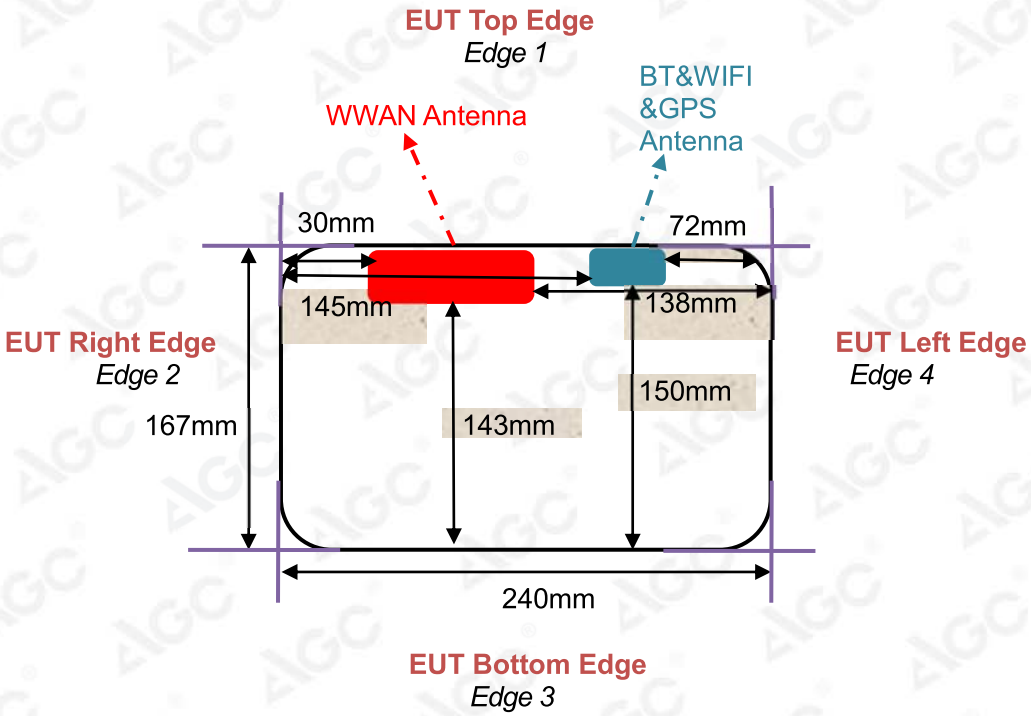
Test Configuration and setting:

The EUT is a model of GSM Portable Mobile Station (MS). It supports GPRS/EGPRS, WCDMA/HSPA, LTE, BT, WIFI, and support hot spot mode.

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

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

Antenna Location: (the back view)



SAR Test Exclusion Consideration for Adjacent Edges
Per KDB 447498 D01 cl. 4.3.1:
a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0
b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)•(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)•10]} mW, for > 1500 MHz and ≤ 6 GHz

For WWAN:
Edge 1 (Top)= 4mm
Edge 2 (Right)= 30mm
Edge 3 (Bottom)= 143mm
Edge 4 (Left)= 138mm

For WLAN:
Edge 1 (Top)= 2mm
Edge 2 (Right)= 145mm
Edge 3 (Bottom)= 150mm
Edge 4 (Left)= 72mm

PCS1900:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 108.54+ (143-50) x 10 mW
= 1038.54mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 108.54+ (138-50) x 10 mW
= 988.54mW.

Conclusion
Since the Maximum Tune-up Power [924.70mW(29.66dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

WCDMA1900:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 109.40+ (143-50) x 10 mW
= 1039.40mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 109.40+ (138-50) x 10 mW
= 989.40mW.

Conclusion
Since the Maximum Tune-up Power [171.79mW(22.35dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

WCDMA850:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+[(test separation distance - 50 mm) x(f(MHz)/150)] mW
= 165.00+ (143-50) x [826.4/150] mW
= 677.37mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+[(test separation distance - 50 mm) x(f(MHz)/150)] mW
= 165.00+ (138-50) x [826.4/150] mW
= 649.83mW..

Conclusion
Since the Maximum Tune-up Power [174.98mW(22.43dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

LTE Band 2:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 109.99+ (143-50) x 10 mW
= 1039.99mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 109.99+ (138-50) x 10 mW
= 989.99mW.

Conclusion
Since the Maximum Tune-up Power [274.79mW(24.39dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

LTE Band 4:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 114.37+ (143-50) x 10 mW
= 1044.37mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+(test separation distance - 50 mm) x 10 mW
= 114.37+ (138-50) x 10 mW
= 994.37mW.

Conclusion
Since the Maximum Tune-up Power [211.84mW(23.26dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

LTE Band 12:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+[(test separation distance - 50 mm) x(f(MHz)/150)] mW
= 177.89+ (143-50) x [711/150] mW
= 618.71mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+[(test separation distance - 50 mm) x(f(MHz)/150)] mW
= 177.89+ (138-50) x [711/150] mW
= 595.01mW..

Conclusion
Since the Maximum Tune-up Power [214.29mW(23.31dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

LTE Band 17:
Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step a)+[(test separation distance - 50 mm) x(f(MHz)/150)] mW
= 178.02+ (143-50) x [710/150] mW
= 618.22mW.

Edge 4(Left)
= (Power allowed at numeric threshold for 50 mm in step a)+[(test separation distance - 50 mm) x(f(MHz)/150)] mW
= 178.02+ (138-50) x [710/150] mW
= 594.55mW..

Conclusion
Since the Maximum Tune-up Power [231.21mW(23.64dBm)] is less than the SAR Exclusion Threshold for Bottom and left edges, SAR evaluation for these adjacent edges are not required.

2.4GHz WIFI
Edge 2(Right)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 96.58 + (145-50) x 10 mW
=1046.58mW.

Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 96.58 + (150-50) x 10 mW
=1096.58mW.

Edge 4(Left)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 96.58 + (72-50) x 10 mW
=316.58mW.

Conclusion
Since the Maximum Tune-up Power [33.24mW(15.217dBm)] is less than the SAR Exclusion Threshold for Right, Bottom and left edges, SAR evaluation for these adjacent edges are not required.

5.2GHz WIFI
Edge 2(Right)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 65.91 + (145-50) x 10 mW
=1015.91mW.

Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 65.91 + (150-50) x 10 mW
=1065.91mW.

Edge 4(Left)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 65.91 + (72-50) x 10 mW
=285.91mW.

Conclusion
Since the Maximum Tune-up Power [12.71mW(11.040dBm)] is less than the SAR Exclusion Threshold for Right, Bottom and left edges, SAR evaluation for these adjacent edges are not required.

5.8GHz WIFI
Edge 2(Right)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 62.58 + (145-50) x 10 mW
=1012.58mW.

Edge 3(Bottom)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 62.58 + (150-50) x 10 mW
=1062.58mW.

Edge 4(Left)
SAR test exclusion threshold
= (Power allowed at numeric threshold for 50 mm in step 1)+(test separation distance - 50 mm) x 10 mW
= 62.58 + (72-50) x 10 mW
=282.58mW.

Conclusion
Since the Maximum Tune-up Power [50.28mW(17.014dBm)] is less than the SAR Exclusion Threshold for Right, Bottom and left edges, SAR evaluation for these adjacent edges are not required.

5. TISSUE SIMULATING LIQUID

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

5.1. The composition of the tissue simulating liquid

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

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEC 62209-1 have been incorporated in the following table. The body tissue dielectric parameters recommended by the IEC 62209-2 have been incorporated in the following table.

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

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

5.3. Tissue Calibration Result

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

Tissue Stimulant Measurement for 750MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 41.9 (39.805-43.995)	δ[s/m] 0.89(0.8455-0.9345)		
Head	707.5	43.68	0.87	21.1	Mar. 20,2020
	710	43.10	0.89		
	750	42.62	0.91		

Tissue Stimulant Measurement for 835MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 41.5 (39.425-43.575)	δ[s/m] 0.90(0.855-0.945)		
Head	835	41.60	0.88	20.7	Mar. 22,2020
	836.6	40.23	0.89		

Tissue Stimulant Measurement for 1750MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 40.1 (38.095-42.105)	δ[s/m]1.37(1.3015-1.439)		
Head	1732.5	39.98	1.33	20.9	Mar. 19,2020
	1750	39.62	1.35		

Tissue Stimulant Measurement for 1900MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr40.00(38.00-42.00)	δ[s/m]1.40(1.33-1.47)		
Head	1850.2	41.56	1.34	21.3	Mar. 24,2020
	1880	40.23	1.36		
	1900	39.62	1.37		
	1909.8	39.27	1.38		

Tissue Stimulant Measurement for 1900MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr40.00(38.00-42.00)	δ[s/m]1.40(1.33-1.47)		
Head	1880	40.13	1.35	20.6	Mar. 17,2020
	1900	39.51	1.36		

Tissue Stimulant Measurement for 2450MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr39.2(37.24-41.16)	δ[s/m]1.80(1.71-1.89)		
	2437	39.10	1.83	20.6	Mar. 31,2020
	2450	38.52	1.85		

Tissue Stimulant Measurement for 5200MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 36(34.2-37.8)	δ[s/m] 4.66(4.43-4.89)		
	5200	36.84	4.57	21.3	Apr. 18,2020

Tissue Stimulant Measurement for 5800MHz					
Head	Fr. (MHz)	Dielectric Parameters (±10%)		Tissue Temp [°C]	Test time
		εr 35.3(31.77-38.83)	δ[s/m] 5.27(4.743-5.797)		
	5785	35.62	5.16	20.7	May 20,2020
	5800	34.20	5.19		

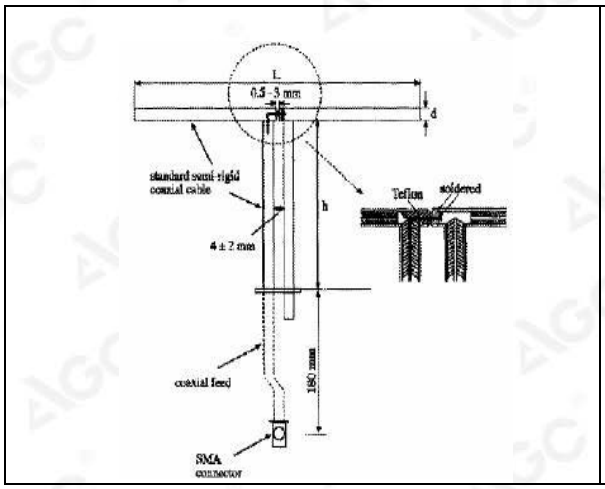
6. SAR SYSTEM CHECK PROCEDURE

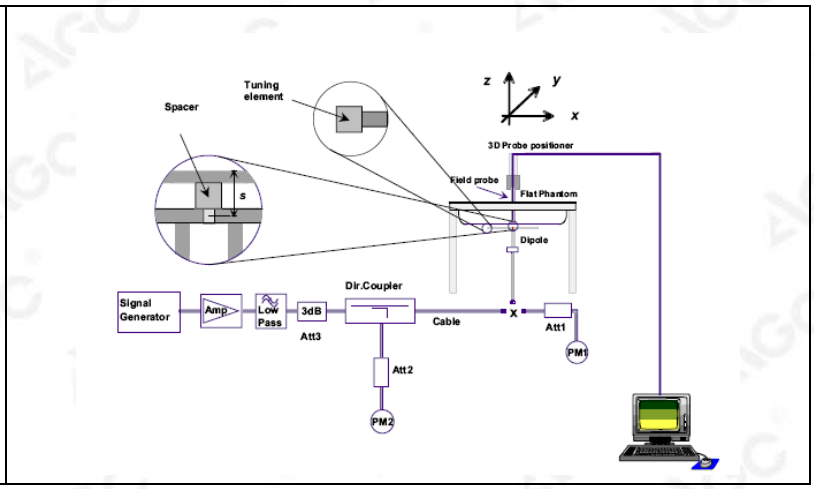
6.1. SAR System Check Procedures

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

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

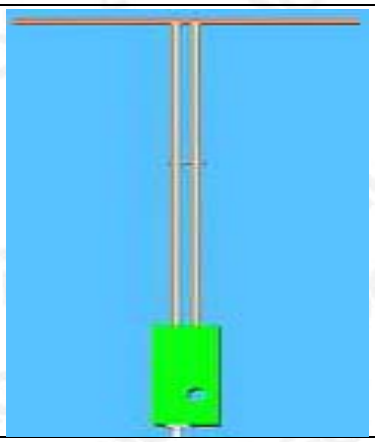
The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system check setup is shown as below.





6.2. SAR System Check

6.2.1. Dipoles

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

Frequency	L (mm)	h (mm)	d (mm)
750MHz	176	100	6.35
835MHz	161.0	89.8	3.6
1800MHz	71.6	41.7	3.6
1900MHz	68	39.5	3.6
2450MHz	51.5	30.4	3.6

Frequency	L (mm)	W (mm)	L_f (mm)	W_f (mm)
5000MHz	40.39	20.19	81.03	61.98

6.2.2. System Check Result

System Performance Check at 750MHz&835MHz &1800MHz &1900MHz &2450MHz&5000-6000MHz for Head								
Validation Kit: SN47/14 DIP 0G750-340& SN29/15 DIP 0G835-383& SN46/11 DIP 1G800-186& SN 46/11 DIP 1G900-187& SN46/11 DIP 2G450-189 &SN 15/15 WGA36								
Frequency [MHz]	Target Value(W/Kg)		Reference Result (± 10%)		Tested Value(W/Kg)		Tissue Temp. [℃]	Test time
	1g	10g	1g	10g	1g	10g		
750	8.31	5.45	7.479-9.141	4.905-5.995	9.01	5.74	21.1	Mar. 20,2020
835	9.85	6.27	8.865-10.835	5.643-6.897	9.92	5.69	20.7	Mar. 22,2020
1800	39.07	20.29	35.163-42.977	18.261-22.319	38.18	19.92	20.9	Mar. 19,2020
1900	40.25	20.50	36.225-44.275	18.45-22.55	42.62	21.18	21.3	Mar. 24,2020
1900	40.25	20.50	36.225-44.275	18.45-22.55	42.65	21.74	20.6	Mar. 17,2020
2450	53.97	24.01	48.573-59.367	21.609-26.411	55.23	22.02	20.6	Mar. 31,2020
5200	161.18	55.04	145.062-177.298	49.536-60.544	154.38	51.92	21.3	Apr. 18,2020
5800	181.69	60.11	163.521-199.859	54.099-66.121	169.40	55.62	20.7	May 20,2020

Note:
(1) We use a CW signal of 18dBm(750MHz-2450MHz)&15dBm(5000-6000MHz) for system check, and then all SAR value are normalized to 1W forward power. The result must be within ±10% of target value.

7. EUT TEST POSITION

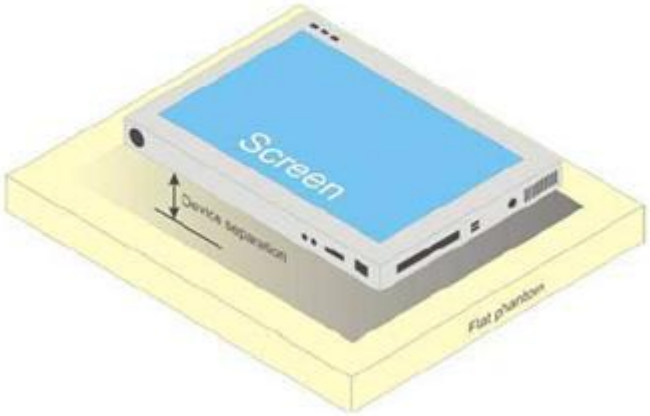
This EUT was tested in **Body back, Body front and 4 edges.**

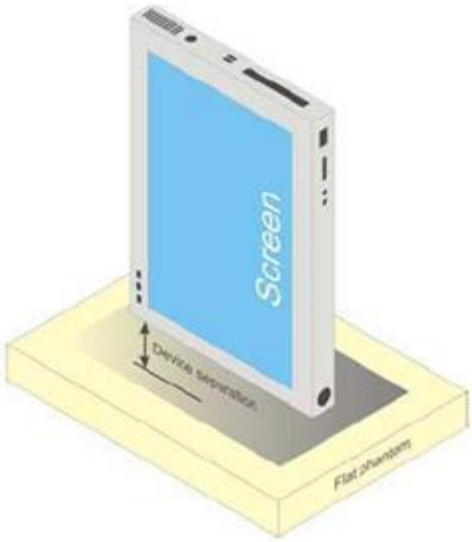
7.1. Body Worn Position

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

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

(3) To adjust the distance between the EUT surface and the flat phantom to **0mm.**





8. SAR EXPOSURE LIMITS

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

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

9. TEST FACILITY

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

10. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Current calibration date	Next calibration date
SAR Probe	MVG	SN 22/16 EP315	Jun. 04,2019	Jun. 03,2020
SAR Probe	MVG	SN 41/18 EPGO334	Jun. 04,2019	Jun. 03,2020
Phantom	SATIMO	SN_4511_SAM90	Validated. No cal required.	Validated. No cal required.
Phantom	SATIMO	SN_2316_ELLI39	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	-	Validated. No cal required.	Validated. No cal required.
Comm Tester	Agilent-8960	GB46310822	Oct. 08,2019	Oct. 07,2020
Comm Tester	R&S- CMW500	S/N120909	Jul. 02,2019	Jul. 01,2020
Multimeter	Keithley 2000	4114939	Sep. 09,2019	Sep. 08,2020
Dipole	SATIMO SID750	SN47/14 DIP 0G750-340	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID835	SN29/15 DIP 0G835-383	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID1800	SN46/11 DIP 1G800-186	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID1900	SN 46/11 DIP 1G900-187	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID2450	SN46/11 DIP 2G450-189	Apr. 26,2019	Apr. 25,2022
Wave guide	SWG5500	SN 15/15 WGA 36	Apr. 26,2019	Apr. 25,2022
Signal Generator	Agilent-E4438C	US41461365	Oct. 08,2019	Oct. 07,2020
Vector Analyzer	Agilent / E4440A	US41421290	Sep. 09,2019	Sep. 08,2020
Network Analyzer	Rhode & Schwarz ZVL6	SN101443	Oct. 08,2019	Oct. 07,2020
Attenuator	Warison /WATT-6SR1211	S/N:WRJ34AYM2F1	June 11,2019	June 10, 2020
Attenuator	Mini-circuits / VAT-10+	31405	June 11,2019	June 10, 2020
Amplifier	AS0104-55_55	1004793	June 12,2019	June 11,2020
Directional Couple	Werlatone/ C5571-10	SN99463	June 12,2019	June 11,2020
Directional Couple	Werlatone/ C6026-10	SN99482	June 12,2019	June 11,2020
Power Sensor	NRP-Z21	1137.6000.02	Sep. 09,2019	Sep. 08,2020
Power Sensor	NRP-Z23	US38261498	Feb. 18,2020	Feb. 17,2021
Power Viewer	R&S	V2.3.1.0	N/A	N/A

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

11. MEASUREMENT UNCERTAINTY

Measurement uncertainty for Dipole averaged over 1 gram / 10 gram									
a	b	c	d	e f(d,k)	f	g	h c×f/e	i c×g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (±%)	10g Ui (±%)	vi
Measurement System									
Probe calibration	E.2.1	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	0.57	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.23	0.23	∞
Hemispherical Isotropy	E.2.2	0.915	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.37	0.37	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	0.675	R	$\sqrt{3}$	1	1	0.39	0.39	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related									
Test sample positioning	E.4.2	2.6	N	1	1	1	2.6	2.6	∞
Device holder uncertainty	E.4.1	3	N	1	1	1	3	3	∞
Output power variation—SAR drift measurement	E.2.9	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	E.6.5	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				9.787	9.587	
Expanded Uncertainty (95% Confidence interval)			K=2				19.573	19.175	

System Validation uncertainty for Dipole averaged over 1 gram / 10 gram.									
a	b	c	d	e f(d,k)	f	g	h c×f/e	i c×g/e	k
Uncertainty Component	Sec.	Tol (±%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (±%)	10g Ui (±%)	vi
Measurement System									
Probe calibration	E.2.1	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	0.57	R	$\sqrt{3}$	1	1	0.33	0.33	∞
Hemispherical Isotropy	E.2.2	0.915	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	0.675	R	$\sqrt{3}$	1	1	0.39	0.39	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
System check source (dipole)									
Deviation of experimental dipole from numerical dipole	E.6.4	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	8,6.6.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4.0	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5.0	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				9.735	9.534	
Expanded Uncertainty (95% Confidence interval)			K=2				19.470	19.069	

System check uncertainty for Dipole averaged over 1 gram / 10 gram.									
a	b	c	d	e f(d,k)	f	g	h c×f/e	i c×g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration drift	E.2.1.3	0.5	N	1	1	1	0.50	0.50	∞
Axial Isotropy	E.2.2	0.57	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Hemispherical Isotropy	E.2.2	0.915	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Linearity	E.2.4	0.675	R	$\sqrt{3}$	0	0	0.00	0.00	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	0	0	0.00	0.00	∞
Response Time	E.2.7	0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	0	0	0.00	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	2	N	1	1	1	2	2	∞
Input power and SAR drift measurement	8,6.6.4	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				5.564	5.205	
Expanded Uncertainty (95% Confidence interval)			K=2				11.128	10.410	

SATIMO Uncertainty- SN 41/18 EPGO334 Measurement uncertainty for DUT averaged over 1 gram / 10 gram.									
a	b	c	d	e f(d,k)	f	g	h c×f/e	i c×g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (±%)	10g Ui (±%)	vi
Measurement System									
Probe calibration	E.2.1	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	0.685	R	$\sqrt{3}$	√0.5	√0.5	0.28	0.28	∞
Hemispherical Isotropy	E.2.2	1.14	R	$\sqrt{3}$	√0.5	√0.5	0.47	0.47	∞
Boundary effect	E.2.3	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	0.935	R	$\sqrt{3}$	1	1	0.54	0.54	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related									
Test sample positioning	E.4.2	2.6	N	1	1	1	2.6	2.6	∞
Device holder uncertainty	E.4.1	3	N	1	1	1	3	3	∞
Output power variation—SAR drift measurement	E.2.9	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	E.6.5	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				9.796	9.597	
Expanded Uncertainty (95% Confidence interval)			K=2				19.593	19.194	

SATIMO Uncertainty- SN 41/18 EPGO334 System Validation uncertainty for DUT averaged over 1 gram / 10 gram.									
a	b	c	d	e f(d,k)	f	g	h c×f/e	i c×g/e	k
Uncertainty Component	Sec.	Tol (±%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (±%)	10g Ui (±%)	vi
Measurement System									
Probe calibration	E.2.1	5.831	N	1	1	1	5.831	5.831	∞
Axial Isotropy	E.2.2	0.685	R	$\sqrt{3}$	1	1	0.395	0.395	∞
Hemispherical Isotropy	E.2.2	1.14	R	$\sqrt{3}$	0	0	0.000	0.000	∞
Boundary effect	E.2.3	1	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	E.2.4	0.935	R	$\sqrt{3}$	1	1	0.540	0.540	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
System check source (dipole)									
Deviation of experimental dipole from numerical dipole	E.6.4	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	8,6.6.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4.0	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5.0	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				9.724	9.524	
Expanded Uncertainty (95% Confidence interval)			K=2				19.449	19.048	

SATIMO Uncertainty- SN 41/18 EPGO334 System Check uncertainty for DUT averaged over 1 gram / 10 gram.									
a	b	c	d	e f(d,k)	f	g	h c×f/e	i c×g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration drift	E.2.1.3	5	N	1	1	1	5	5	∞
Axial Isotropy	E.2.2	0.685	R	$\sqrt{3}$	0	0	0	0	∞
Hemispherical Isotropy	E.2.2	1.14	R	$\sqrt{3}$	0	0	0	0	∞
Boundary effect	E.2.3	1	R	$\sqrt{3}$	0	0	0	0	∞
Linearity	E.2.4	0.935	R	$\sqrt{3}$	0	0	0	0	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	0	0	0.00	0.00	∞
Response Time	E.2.7	0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	0	0	0.00	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	2	N	1	1	1	2	2	∞
Input power and SAR drift measurement	8,6.6.4	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				7.462	7.199	
Expanded Uncertainty (95% Confidence interval)			K=2				14.925	14.398	

12. CONDUCTED POWER MEASUREMENT

GSM BAND

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GPRS 850 （1 Slot）	824.2	31.61	-9	22.61
	836.6	**31.76**	-9	22.76
	848.8	31.47	-9	22.47
GPRS 850 （2 Slot）	824.2	29.86	-6	23.86
	836.6	30.29	-6	24.29
	848.8	29.82	-6	23.82
GPRS 850 （3 Slot）	824.2	28.96	-4.26	24.70
	836.6	29.11	-4.26	24.85
	848.8	29.37	-4.26	**25.11**
GPRS 850 （4 Slot）	824.2	27.23	-3	24.23
	836.6	26.97	-3	23.97
	848.8	27.30	-3	24.30
EGPRS 850 （1 Slot）	824.2	23.61	-9	14.61
	836.6	24.01	-9	15.01
	848.8	24.26	-9	15.26
EGPRS 850 （2 Slot）	824.2	22.23	-6	16.23
	836.6	21.38	-6	15.38
	848.8	21.08	-6	15.08
EGPRS 850 （3 Slot）	824.2	19.65	-4.26	15.39
	836.6	19.27	-4.26	15.01
	848.8	20.02	-4.26	15.76
EGPRS 850 （4 Slot）	824.2	18.32	-3	15.32
	836.6	17.81	-3	14.81
	848.8	17.54	-3	14.54

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <2>				
GPRS 850 （1 Slot）	824.2	31.58	-9	22.58
	836.6	31.72	-9	22.72
	848.8	31.43	-9	22.43
GPRS 850 （2 Slot）	824.2	29.81	-6	23.81
	836.6	30.25	-6	24.25
	848.8	29.77	-6	23.77
GPRS 850 （3 Slot）	824.2	28.92	-4.26	24.66
	836.6	29.08	-4.26	24.82
	848.8	29.31	-4.26	25.05
GPRS 850 （4 Slot）	824.2	27.20	-3	24.20
	836.6	26.93	-3	23.93
	848.8	27.26	-3	24.26

GSM BAND CONTINUE

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GPRS1900 （1 Slot）	1850.2	29.65	-9	20.65
	1880	29.39	-9	20.39
	1909.8	**29.66**	-9	20.66
GPRS1900 （2 Slot）	1850.2	27.35	-6	21.35
	1880	27.57	-6	21.57
	1909.8	27.45	-6	21.45
GPRS1900 （3 Slot）	1850.2	26.30	-4.26	22.04
	1880	26.83	-4.26	22.57
	1909.8	26.53	-4.26	22.27
GPRS1900 （4 Slot）	1850.2	25.74	-3	**22.74**
	1880	25.44	-3	22.44
	1909.8	25.60	-3	22.60
EGPRS1900 （1 Slot）	1850.2	24.05	-9	15.05
	1880	24.09	-9	15.09
	1909.8	24.02	-9	15.02
EGPRS1900 （2 Slot）	1850.2	22.47	-6	16.47
	1880	22.34	-6	16.34
	1909.8	22.49	-6	16.49
EGPRS1900 （3 Slot）	1850.2	21.20	-4.26	16.94
	1880	21.25	-4.26	16.99
	1909.8	21.13	-4.26	16.87
EGPRS1900 （4 Slot）	1850.2	19.90	-3	16.90
	1880	19.68	-3	16.68
	1909.8	20.24	-3	17.24

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <2>				
GPRS1900 （1 Slot）	1850.2	29.60	-9	20.60
	1880	29.35	-9	20.35
	1909.8	29.62	-9	20.62
GPRS1900 （2 Slot）	1850.2	27.31	-6	21.31
	1880	27.53	-6	21.53
	1909.8	27.40	-6	21.40
GPRS1900 （3 Slot）	1850.2	26.25	-4.26	21.99
	1880	26.79	-4.26	22.53
	1909.8	26.51	-4.26	22.25
GPRS1900 （4 Slot）	1850.2	25.72	-3	22.72
	1880	25.40	-3	22.40
	1909.8	25.53	-3	22.53

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

UMTS BAND
HSDPA Setup Configuration:

·The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.

·The RF path losses were compensated into the measurements.

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

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

(2) Set RMC 12.2Kbps+HSDPA mode.

(3) Set Cell Power=-86dBm

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

(5) Select HSDPA Uplink Parameters

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

(7) Set Ack - Nack Repetition Factor to 3

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

(9) Set CQI Repetition Factor to 2

(10) Power Ctrl Mode=All Up bits

·The transmitted maximum output power was recorded.

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

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

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

HSUPA Setup Configuration:

·The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.

·The RF path losses were compensated into the measurements.

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

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

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

(3) Set Cell Power = -86 dBm

(4) Set Channel Type = 12.2k + HSPA

(5) Set UE Target Power

(6) Power Ctrl Mode= Alternating bits

(7) Set and observe the E-TFCI

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

·The transmitted maximum output power was recorded.

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

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

Note 1: For sub-test 1 to 4, ΔACK, ΔNACK and ΔCQI = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, ΔACK, ΔNACK and ΔCQI = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for βc/βd =12/15, hs/ c=24/15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the c/ d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to c = 10/15 and d = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: βed cannot be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

UMTS BAND II

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 1900 RMC	1852.4	22.30
	1880	21.98
	1907.6	22.21
WCDMA 1900 AMR	1852.4	22.28
	1880	22.04
	1907.6	21.67
HSDPA Subtest 1	1852.4	20.99
	1880	21.10
	1907.6	20.90
HSDPA Subtest 2	1852.4	20.35
	1880	19.92
	1907.6	20.50
HSDPA Subtest 3	1852.4	19.89
	1880	19.79
	1907.6	19.97
HSDPA Subtest 4	1852.4	20.07
	1880	20.31
	1907.6	20.64
HSUPA Subtest 1	1852.4	20.76
	1880	20.17
	1907.6	20.37
HSUPA Subtest 2	1852.4	21.37
	1880	21.83
	1907.6	21.38
HSUPA Subtest 3	1852.4	21.07
	1880	21.01
	1907.6	21.31
HSUPA Subtest 4	1852.4	21.38
	1880	**22.35**
	1907.6	22.10
HSUPA Subtest 5	1852.4	21.06
	1880	21.87
	1907.6	21.73

UMTS BAND V

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 850 RMC	826.4	**22.43**
	836.6	21.82
	846.6	21.96
WCDMA 850 AMR	826.4	22.14
	836.6	22.06
	846.6	21.94
HSDPA Subtest 1	826.4	21.08
	836.6	20.86
	846.6	20.99
HSDPA Subtest 2	826.4	20.27
	836.6	20.08
	846.6	20.72
HSDPA Subtest 3	826.4	19.84
	836.6	19.92
	846.6	20.17
HSDPA Subtest 4	826.4	20.01
	836.6	20.60
	846.6	20.64
HSUPA Subtest 1	826.4	20.52
	836.6	20.24
	846.6	20.34
HSUPA Subtest 2	826.4	21.52
	836.6	21.82
	846.6	21.28
HSUPA Subtest 3	826.4	21.14
	836.6	21.10
	846.6	20.98
HSUPA Subtest 4	826.4	21.22
	836.6	22.33
	846.6	22.29
HSUPA Subtest 5	826.4	21.10
	836.6	21.50
	846.6	21.71

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

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

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

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

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

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

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

LTE Band

Conducted Power of LTE Band 2(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					18607	18900	19193
1.4MHz	QPSK	1	0	0	23.68	23.60	23.30
			2	0	23.57	23.72	23.43
			5	0	23.62	23.53	23.29
		3	0	0	23.56	23.61	23.34
			1	0	23.72	23.59	23.33
			3	0	23.59	23.66	23.32
		6	0	1	23.29	22.63	22.45
	16QAM	1	0	1	22.99	22.39	22.13
			2	1	23.14	22.58	22.29
			5	1	23.02	22.43	22.11
		3	0	1	23.03	22.52	22.16
			1	1	23.03	22.48	22.19
			3	1	23.02	22.52	22.16
		6	0	2	22.20	21.46	21.35
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					18615	18900	19185
3MHz	QPSK	1	0	0	23.69	23.52	22.58
			8	0	23.41	23.52	23.32
			14	0	23.65	23.52	23.33
		8	0	1	23.20	22.63	22.43
			4	1	23.25	22.63	22.43
			7	1	23.24	22.63	22.40
		15	0	1	23.20	22.58	22.35
	16QAM	1	0	1	22.94	22.29	22.31
			8	1	22.92	22.28	22.28
			14	1	22.91	22.30	22.29
		8	0	2	22.16	21.61	21.39
			4	2	22.16	21.59	21.37
			7	2	22.17	21.58	21.35
		15	0	2	22.09	21.46	21.33

Conducted Power of LTE Band 2(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 18625	Channel 18900	Channel 19175
5MHz	QPSK	1	0	0	23.64	23.50	23.25
			12	0	23.59	23.66	23.44
			24	0	23.69	23.41	23.31
		12	0	1	23.14	22.63	22.34
			6	1	23.14	22.59	22.34
			13	1	23.25	22.58	22.28
		25	0	1	23.22	22.57	22.34
	16QAM	1	0	1	23.06	22.44	22.20
			12	1	23.19	22.56	22.38
			24	1	23.04	22.33	22.17
		12	0	2	22.21	21.64	21.32
			6	2	22.19	21.63	21.29
			13	2	22.32	21.55	21.26
		25	0	2	22.16	21.59	21.31
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 18650	Channel 18900	Channel 19150
10MHz	QPSK	1	0	0	23.62	23.57	23.22
			24	0	23.71	23.63	23.41
			49	0	23.75	23.42	23.32
		25	0	1	23.16	22.77	22.38
			12	1	23.17	22.76	22.40
			25	1	23.31	22.58	22.39
		50	0	1	23.22	22.66	22.37
	16QAM	1	0	1	22.95	22.34	22.22
			24	1	23.07	22.41	22.41
			49	1	22.82	22.21	22.25
		25	0	2	22.14	21.80	21.35
			12	2	22.13	21.78	21.34
			25	2	22.28	21.58	21.33
		50	0	2	22.22	21.62	21.34

Conducted Power of LTE Band 2(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					18675	18900	19125
15MHz	QPSK	1	0	0	23.62	23.58	23.15
			38	0	23.68	23.57	23.30
			74	0	23.74	23.26	23.26
		38	0	1	23.18	22.36	22.15
			18	1	23.14	22.32	22.28
			37	1	22.85	22.07	22.24
		75	0	1	23.26	22.76	22.43
	16QAM	1	0	1	23.16	22.40	22.14
			38	1	23.15	22.34	22.28
			74	1	22.85	22.06	22.22
		38	0	2	23.17	22.41	22.12
			18	2	23.14	22.35	22.27
			37	2	22.85	22.08	22.21
		75	0	2	22.19	21.69	21.27
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					18700	18900	19100
20MHz	QPSK	1	0	0	22.99	23.64	23.35
			49	0	23.72	**23.77**	23.49
			99	0	23.66	23.36	23.37
		50	0	1	23.07	22.90	22.34
			25	1	23.10	22.87	22.33
			50	1	22.95	22.52	22.37
		100	0	1	23.04	22.65	22.38
	16QAM	1	0	1	23.07	22.73	22.26
			49	1	23.08	22.80	22.36
			99	1	22.50	22.44	22.29
		50	0	2	22.04	21.88	21.33
			25	2	22.07	21.88	21.31
			50	2	21.96	21.50	21.37
		100	0	2	22.02	21.68	21.32

Conducted Power of LTE Band 4(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					19957	20175	20393
1.4MHz	QPSK	1	0	0	23.11	22.86	22.79
			2	0	23.24	22.96	23.04
			5	0	23.09	22.84	22.78
		3	0	0	23.19	22.97	22.81
			1	0	23.19	22.95	22.82
			3	0	23.24	22.88	22.84
		6	0	1	22.23	21.93	21.79
	16QAM	1	0	1	21.77	21.69	21.47
			2	1	21.90	21.89	21.62
			5	1	21.85	21.74	21.46
		3	0	1	22.01	21.79	21.63
			1	1	21.97	21.75	21.63
			3	1	22.00	21.81	21.63
		6	0	2	21.14	20.88	20.59
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					19965	20175	20385
3MHz	QPSK	1	0	0	23.21	22.88	22.83
			8	0	23.19	22.87	22.85
			14	0	23.22	22.86	22.82
		8	0	1	22.21	21.90	21.82
			4	1	22.18	21.91	21.80
			7	1	22.19	21.91	21.78
		15	0	1	22.18	21.91	21.75
	16QAM	1	0	1	21.94	21.84	21.58
			8	1	21.92	21.86	21.53
			14	1	21.89	21.83	21.46
		8	0	2	21.12	20.90	20.74
			4	2	21.09	20.91	20.72
			7	2	21.11	20.88	20.71
		15	0	2	21.06	20.95	20.62

Conducted Power of LTE Band 4(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 19975	Channel 20175	Channel 20375
5MHz	QPSK	1	0	0	23.04	22.86	22.74
			12	0	23.19	23.00	22.83
			24	0	23.08	22.86	22.69
		12	0	1	22.10	21.84	21.78
			6	1	22.13	21.86	21.78
			13	1	22.17	21.87	21.71
		25	0	1	22.18	21.94	21.76
	16QAM	1	0	1	22.05	21.78	21.74
			12	1	22.22	21.90	21.82
			24	1	22.11	21.84	21.63
		12	0	2	21.14	20.87	20.84
			6	2	21.17	20.85	20.85
			13	2	21.21	20.92	20.78
		25	0	2	21.15	20.93	20.74
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 20000	Channel 20175	Channel 20350
10MHz	QPSK	1	0	0	23.07	22.80	22.96
			24	0	**23.26**	22.95	23.04
			49	0	23.05	22.91	22.78
		25	0	1	22.23	21.92	21.96
			12	1	22.25	21.92	21.93
			25	1	22.24	21.97	21.78
		50	0	1	22.26	21.92	21.90
	16QAM	1	0	1	22.02	21.83	21.70
			24	1	22.31	22.01	21.68
			49	1	22.07	21.91	21.50
		25	0	2	21.16	20.88	20.97
			12	2	21.18	20.88	20.96
			25	2	21.22	20.95	20.79
		50	0	2	21.23	20.96	20.89

Conducted Power of LTE Band 4(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 20025	Channel 20175	Channel 20325
15MHz	QPSK	1	0	0	23.02	22.75	22.85
			38	0	23.09	22.84	22.81
			74	0	22.90	22.91	22.57
		38	0	1	22.16	21.83	21.92
			18	1	22.24	21.87	21.82
			37	1	22.05	21.83	21.65
		75	0	1	22.35	22.04	21.97
	16QAM	1	0	1	22.14	21.83	21.92
			38	1	22.21	21.82	21.81
			74	1	22.02	21.82	21.60
		38	0	2	22.12	21.85	21.93
			18	2	22.21	21.85	21.86
			37	2	22.02	21.83	21.63
		75	0	2	21.25	20.96	20.89
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel 20050	Channel 20175	Channel 20300
20MHz	QPSK	1	0	0	23.06	22.84	22.88
			49	0	23.21	22.98	23.05
			99	0	22.90	22.91	22.65
		50	0	1	22.13	21.87	21.92
			25	1	22.15	21.90	21.92
			50	1	22.08	21.95	21.73
		100	0	1	22.11	21.90	21.80
	16QAM	1	0	1	22.09	21.75	21.94
			49	1	22.31	21.89	22.08
			99	1	22.01	21.75	21.62
		50	0	2	21.12	20.89	20.96
			25	2	21.17	20.91	20.94
			50	2	21.07	20.95	20.72
		100	0	2	21.09	20.89	20.80

Conducted Power of LTE Band 12(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23017	23095	23173
1.4MHz	QPSK	1	0	0	23.07	23.08	23.14
			2	0	23.21	23.21	**23.31**
			5	0	23.03	23.07	23.16
		3	0	0	23.09	23.09	23.18
			1	0	23.12	23.10	23.17
			3	0	23.10	23.13	23.17
		6	0	1	22.18	22.10	22.27
	16QAM	1	0	1	21.87	21.84	21.91
			2	1	22.05	21.99	22.14
			5	1	21.81	21.80	21.96
		3	0	1	21.91	21.90	21.96
			1	1	21.89	21.91	21.96
			3	1	21.85	21.90	21.95
		6	0	2	21.11	20.92	21.17
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23025	23095	23165
3MHz	QPSK	1	0	0	23.14	23.07	23.03
			8	0	23.15	23.07	23.08
			14	0	23.13	23.06	23.12
		8	0	1	22.06	22.05	22.10
			4	1	22.05	22.07	22.10
			7	1	22.06	22.08	22.11
		15	0	1	22.04	22.02	22.02
	16QAM	1	0	1	21.93	21.74	21.99
			8	1	21.83	21.79	22.01
			14	1	21.84	21.80	22.04
		8	0	2	21.04	21.05	21.09
			4	2	21.02	21.07	21.07
			7	2	21.06	21.04	21.08
		15	0	2	20.97	20.97	21.03

Conducted Power of LTE Band 12(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23035	23095	23155
5MHz	QPSK	1	0	0	23.00	23.01	23.00
			12	0	23.09	23.15	23.15
			24	0	22.97	23.01	23.07
		12	0	1	21.91	22.04	21.97
			6	1	21.93	22.03	21.99
			13	1	21.98	22.04	21.95
		25	0	1	21.95	22.04	21.96
	16QAM	1	0	1	21.97	21.85	21.87
			12	1	22.08	21.97	21.99
			24	1	21.98	21.85	21.95
		12	0	2	20.97	21.03	20.93
			6	2	20.96	21.04	20.93
			13	2	21.06	21.08	20.92
		25	0	2	20.96	21.11	20.97
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23060	23095	23130
10MHz	QPSK	1	0	0	23.05	23.10	23.03
			24	0	23.17	23.17	23.15
			49	0	23.01	23.12	23.10
		25	0	1	22.02	22.12	21.97
			12	1	22.01	22.14	21.99
			25	1	22.05	22.16	22.00
		50	0	1	22.04	22.11	21.96
	16QAM	1	0	1	21.99	21.80	21.76
			24	1	22.11	21.97	21.77
			49	1	21.97	21.79	21.81
		25	0	2	20.98	21.12	20.97
			12	2	20.97	21.14	20.99
			25	2	21.03	21.20	21.05
		50	0	2	20.98	21.14	20.98

Conducted Power of LTE Band 17(dBm)							
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23755	23790	23825
5MHz	QPSK	1	0	0	23.32	23.48	23.56
			12	0	23.41	23.63	23.61
			24	0	23.38	**23.64**	22.92
		12	0	1	22.39	22.42	22.56
			6	1	22.37	22.44	22.55
			13	1	22.42	22.60	22.36
		25	0	1	22.43	22.56	22.44
	16QAM	1	0	1	22.17	22.35	22.53
			13	1	22.38	22.47	22.52
			24	1	22.28	22.48	22.41
		12	0	2	21.36	21.37	21.51
			6	2	21.36	21.38	21.53
			13	2	21.41	21.56	21.39
		25	0	2	21.37	21.50	21.33
Bandwidth	Modulation	RB size	RB offset	Target MPR	Channel	Channel	Channel
					23780	23790	23800
10MHz	QPSK	1	0	0	23.30	23.31	23.25
			24	0	23.16	23.38	23.51
			49	0	23.54	23.35	22.76
		25	0	1	22.46	22.50	22.48
			12	1	22.47	22.51	22.45
			25	1	22.65	22.58	22.50
		50	0	1	22.54	22.51	22.48
	16QAM	1	0	1	22.33	22.18	22.19
			24	1	22.53	22.41	22.51
			49	1	22.47	22.27	22.27
		25	0	2	21.40	21.44	21.44
			12	2	21.38	21.41	21.44
			25	2	21.57	21.55	21.45
		50	0	2	21.47	21.47	21.42

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

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

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

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

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

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

WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Avg. Burst Power(dBm)
802.11b	1	01	2412	**15.217**
		06	2437	15.181
		11	2462	15.033
802.11g	6	01	2412	8.136
		06	2437	9.769
		11	2462	9.450
802.11n(20)	6.5	01	2412	8.151
		06	2437	8.125
		11	2462	9.631
802.11n(40)	13.5	03	2422	9.455
		06	2437	9.808
		09	2452	9.747

Bluetooth_V4.1(BR/EDR)

Modulation	Channel	Frequency(MHz)	Peak Power (dBm)
GFSK	0	2402	6.840
	39	2441	7.145
	78	2480	**7.303**
π /4-DQPSK	0	2402	6.083
	39	2441	6.328
	78	2480	6.350
8-DPSK	0	2402	6.207
	39	2441	6.494
	78	2480	6.557

Bluetooth_V4.1(BLE)

Modulation	Channel	Frequency(MHz)	Peak Power (dBm)
GFSK	0	2402	6.794
	19	2440	7.129
	39	2480	**7.275**

5G WIFI

Mode	channel	Frequency	Power(dBm)							
			Data Rate(bps)							
			6M	9M	12M	18M	24M	36M	48M	54M
802.11a	36	5180	**11.040**	10.923	10.791	10.687	10.556	10.465	10.386	10.292
	40	5200	10.484	10.366	10.237	10.125	9.998	9.906	9.823	9.731
	48	5240	10.647	10.525	10.393	10.286	10.155	10.066	9.983	9.892
	149	5745	**17.014**	16.862	16.794	16.703	16.554	16.464	16.345	16.252
	157	5785	16.159	16.026	15.898	15.836	15.725	15.636	15.466	15.429
	165	5825	16.548	16.446	16.268	16.193	16.126	15.978	15.868	15.793
			MCS0	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
802.11n (20)	36	5180	9.040	8.921	8.792	8.686	8.553	8.461	8.385	8.293
	40	5200	10.659	10.536	10.405	10.297	10.169	10.076	9.993	9.908
	48	5240	8.837	8.715	8.587	8.476	8.349	8.258	8.178	8.086
	149	5745	16.126	16.027	15.845	15.775	15.705	15.555	15.445	15.375
	157	5785	16.462	16.345	16.191	16.126	16.021	15.933	15.831	15.696
	165	5825	16.246	16.12	16.013	15.881	15.836	15.692	15.573	15.527
			MCS0	**MCS0**	**MCS0**	**MCS0**	**MCS0**	**MCS0**	**MCS0**	**MCS0**
802.11n (40)	38	5190	9.335	9.212	9.085	8.972	8.843	8.756	8.675	8.581
	46	5230	9.004	8.885	8.753	8.642	8.511	8.424	8.346	8.256
	151	5755	16.582	16.486	16.366	16.212	16.126	16.062	15.902	15.843
	159	5795	16.347	16.187	16.105	16.017	15.879	15.757	15.693	15.587

13. TEST RESULTS

13.1. SAR Test Results Summary

13.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to IEEE 1528-2013, Body-worn and 4 Edges SAR was performed with the device 0mm from the phantom.

13.1.2. Operation Mode

1. Per KDB 447498 D01 v06 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
2. Per KDB 865664 D01 v01r04,for each frequency band, if the measured SAR is ≥0.8W/Kg, testing for repeated SAR measurement is required , that the highest measured SAR is only to be tested. When the SAR results are near the limit, the following procedures are required for each device to verify these types of SAR measurement related variation concerns by repeating the highest measured SAR configuration in each frequency band.
   (1) When the original highest measured SAR is ≥0.8W/Kg, repeat that measurement once.
   (2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is >1.20 or when the original or repeated measurement is ≥1.45 W/Kg.
   (3) Perform a third repeated measurement only if the original, first and second repeated measurement is ≥1.5 W/Kg and ratio of largest to smallest SAR for the original, first and second measurement is ≥ 1.20.
3. Per KDB 648474 D04 v01r03,when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤1.2W/Kg, SAR testing with a headset connected is not required.
4. Per KDB 248227 D01v02r02,for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤1.2W/kg.
5. Per KDB 941225 D06 V02r01, When the same wireless mode transmission configurations for voice and data are required for SAR measurements, the more conservative configuration with a smaller separation distance should be tested for the overlapping SAR configurations.
6. Maximum Scaling SAR in order to calculate the Maximum SAR values to test under the standard Peak Power, Calculation method is as follows:
   Maximum Scaling SAR =tested SAR (Max.) ×[maximum turn-up power (mw)/ maximum measurement output power(mw)]
7. Proximity sensor, just for avoiding the wrong operation in the phone screen when call, and has no influence on output power or SAR result
8. Per KDB 616217 D04 v01r02, The procedures are applicable only when the overall diagonal dimension of the keyboard and/or display section of a laptop or tablet is > 20 cm.1 The RF exposure test requirements for transmitters and antennas operating in standalone and simultaneous transmission configurations are applied in conjunction with the test reduction and exclusion provisions in KDB Publication 447498 D01.
9. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1RB allocation using the RB offset and required test channel combination with highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
10. Per KDB 941125 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.

11. Per KDB 941125 D05v02r03. For QPSK with 100% RB allocation. SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1RB allocation and the highest reported SAR is >1.45 W/Kg, the remaining required test channels must also be tested.
12. Per KDB 941125 D05v02r03. 16QAM output power for each RB allocation configuration is not 1/2 dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤1.45W/Kg, Per KDB 941225 D05v02r02, 16QAM SAR testing is not required.
13. Per KDB 941125 D05v02r03. Smaller bandwidth output power for each RB allocation configuration is >not 1/2 dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤1.45W/Kg. Per KDB 941125 D05v02r03, smaller bandwidth SAR testing is not required.

13.1.3. Test Result

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 45.3					
Product: BOHA!™ tablet									
Test Mode: GSM850 with GMSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
SIM 1 Card									
Body back	GPRS-3 slot	190	836.6	-0.21	**0.610**	29.40	29.11	**0.652**	1.6
Body front	GPRS-3 slot	190	836.6	0.05	0.539	29.40	29.11	0.576	1.6
Edge 1 (Top)	GPRS-3 slot	190	836.6	-0.23	0.411	29.40	29.11	0.439	1.6
Edge 2(Right)	GPRS-3 slot	190	836.6	-0.14	0.183	29.40	29.11	0.196	1.6
Edge 3(Bottom)	GPRS-3 slot	190	836.6	0.05	0.022	29.40	29.11	0.024	1.6
Edge 4(Left)	GPRS-3 slot	190	836.6	-0.27	0.169	29.40	29.11	0.181	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 52.7					
Product: BOHA!™ tablet									
Test Mode: PCS1900 with GMSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
SIM 1 Card									
Body back	GPRS-4 slot	512	1850.2	-0.22	**1.180**	25.80	25.74	**1.196**	1.6
Body back	GPRS-4 slot	661	1880	-0.18	1.004	25.80	25.44	1.091	1.6
Body back	GPRS-4 slot	810	1909.8	-0.53	1.091	25.80	25.60	1.142	1.6
Body front	GPRS-4 slot	661	1880.0	0.26	0.739	25.80	25.44	0.803	1.6
Edge 1 (Top)	GPRS-4 slot	661	1880.0	-0.24	0.311	25.80	25.44	0.338	1.6
Edge 2(Right)	GPRS-4 slot	661	1880.0	0.13	0.132	25.80	25.44	0.143	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 52.7					
Product: BOHA!™ tablet									
Test Mode: WCDMA Band II with QPSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
Body back	RMC 12.2kbps	9400	1880	-0.26	0.395	22.40	21.98	0.435	1.6
Body front	RMC 12.2kbps	9400	1880	0.23	**0.485**	22.40	21.98	**0.534**	1.6
Edge 1 (Top)	RMC 12.2kbps	9400	1880	-0.24	0.288	22.40	21.98	0.317	1.6
Edge 2(Right)	RMC 12.2kbps	9400	1880	-0.17	0.134	22.40	21.98	0.148	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 45.3					
Product: BOHA!™ tablet									
Test Mode: WCDMA Band V with QPSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
Body back	RMC 12.2kbps	4183	836.6	-0.28	0.094	22.50	21.82	0.110	1.6
Body front	RMC 12.2kbps	4183	836.6	0.53	**0.620**	22.50	21.82	**0.725**	1.6
Edge 1 (Top)	RMC 12.2kbps	4183	836.6	-0.16	0.492	22.50	21.82	0.575	1.6
Edge 2(Right)	RMC 12.2kbps	4183	836.6	0.27	0.025	22.50	21.82	0.029	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT												
Depth of Liquid (cm):>15					Relative Humidity (%): 56.2							
Product: BOHA!™ tablet												
Test Mode: LTE Band 2												
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocation	UL RB START								
20	QPSK	Body back	1	0	18900	1880	-0.23	0.529	23.80	23.64	0.549	1.6
		Body front	1	0	18900	1880	-0.62	**0.745**	23.80	23.64	**0.773**	1.6
		Edge 1 (Top)	1	0	18900	1880	0.43	0.441	23.80	23.64	0.458	1.6
		Edge 2(Right)	1	0	18900	1880	0.52	0.158	23.80	23.64	0.164	1.6
		Body back	50%	0	18900	1880	-0.27	0.488	23.80	22.90	0.600	1.6
		Body front	50%	0	18900	1880	-0.65	**0.588**	23.80	22.90	**0.723**	1.6
		Edge 1 (Top)	50%	0	18900	1880	0.47	0.411	23.80	22.90	0.506	1.6
		Edge 2(Right)	50%	0	18900	1880	0.59	0.062	23.80	22.90	0.076	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT												
Depth of Liquid (cm):>15					Relative Humidity (%): 59.5							
Product: BOHA!™ tablet												
Test Mode: LTE Band 4												
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tuneup Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocation	UL RB START								
20	QPSK	Body back	1	0	20175	1732.5	-0.18	0.461	23.30	22.84	0.513	1.6
		Body front	1	0	20175	1732.5	0.42	**0.632**	23.30	22.84	**0.703**	1.6
		Edge 1 (Top)	1	0	20175	1732.5	-0.36	0.487	23.30	22.84	0.541	1.6
		Edge 2(Right)	1	0	20175	1732.5	0.05	0.122	23.30	22.84	0.136	1.6
		Body back	50%	0	20175	1732.5	-0.22	0.362	23.30	21.87	0.503	1.6
		Body front	50%	0	20175	1732.5	0.36	**0.406**	23.30	21.87	**0.564**	1.6
		Edge 1 (Top)	50%	0	20175	1732.5	-0.32	0.270	23.30	21.87	0.375	1.6
		Edge 2(Right)	50%	0	20175	1732.5	-0.02	0.086	23.30	21.87	0.120	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT												
Depth of Liquid (cm):>15					Relative Humidity (%): 49.2							
Product: BOHA!™ tablet												
Test Mode: LTE Band 12												
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tuneup Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocation	UL RB START								
10	QPSK	Body back	1	0	23095	707.5	-0.16	0.442	23.40	23.10	0.474	1.6
		Body front	1	0	23095	707.5	-0.35	0.557	23.40	23.10	0.597	1.6
		Edge 1 (Top)	1	0	23095	707.5	-0.24	**0.618**	23.40	23.10	**0.662**	1.6
		Edge 2(Right)	1	0	23095	707.5	0.10	0.013	23.40	23.10	0.014	1.6
		Body back	50%	0	23095	707.5	-0.11	0.397	23.40	22.11	0.534	1.6
		Body front	50%	0	23095	707.5	-0.32	0.441	23.40	22.11	0.594	1.6
		Edge 1 (Top)	50%	0	23095	707.5	-0.20	**0.549**	23.40	22.11	**0.739**	1.6
		Edge 2(Right)	50%	0	23095	707.5	0.09	0.014	23.40	22.11	0.019	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT												
Depth of Liquid (cm):>15					Relative Humidity (%): 49.2							
Product: BOHA!™ tablet												
Test Mode: LTE Band 17												
BM MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tuneup Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocation	UL RB START								
10	QPSK	Body back	1	0	23790	710	-0.31	0.412	23.70	23.31	0.451	1.6
		Body front	1	0	23790	710	-0.28	**0.597**	23.70	23.31	**0.653**	1.6
		Edge 1 (Top)	1	0	23790	710	0.19	0.108	23.70	23.31	0.118	1.6
		Edge 2(Right)	1	0	23790	710	-0.35	0.015	23.70	23.31	0.016	1.6
		Body back	50%	0	23790	710	-0.28	0.335	23.70	22.51	0.441	1.6
		Body front	50%	0	23790	710	-0.05	**0.468**	23.70	22.51	**0.616**	1.6
		Edge 1 (Top)	50%	0	23790	710	0.16	0.102	23.70	22.51	0.134	1.6
		Edge 2(Right)	50%	0	23790	710	-0.30	0.016	23.70	22.51	0.021	1.6

Note:
·When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
·The test separation for body back, body front and 4 Edges is 0mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15			Relative Humidity (%): 47.6						
Product: BOHA!™ tablet									
Test Mode:802.11b									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
Body back	DTS	6	2437	0.11	0.237	15.30	15.181	0.244	1.6
Body front	DTS	6	2437	-0.06	**0.288**	15.30	15.181	**0.296**	1.6
Edge 1 (Top)	DTS	6	2437	0.20	0.183	15.30	15.181	0.188	1.6

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

SAR MEASUREMENT								
Depth of Liquid (cm):>15			Relative Humidity (%): 52.8					
Product: BOHA!™ tablet								
Test Mode: 5.2GHz 802.11a20								
Position	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
Body Back	40	5200	-0.28	0.240	11.10	10.484	0.277	1.6
Body Front	40	5200	0.51	**0.594**	11.10	10.484	**0.685**	1.6
Edge 1 (Top)	40	5200	-0.37	0.051	11.10	10.484	0.059	1.6

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

SAR MEASUREMENT								
Depth of Liquid (cm):>15			Relative Humidity (%): 51.8					
Product: BOHA!™ tablet								
Test Mode: 5.8GHz 802.11a20								
Position	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit (W/kg)**
Body Back	157	5785	-0.36	0.257	17.10	16.159	0.319	1.6
Body Front	157	5785	0.22	**0.608**	17.10	16.159	**0.755**	1.6
Edge 1 (Top)	157	5785	-0.13	0.046	17.10	16.159	0.057	1.6

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

Repeated SAR										
Product: BOHA!™ tablet										
Test Mode: PCS1900 with GMSK modulation										
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**Once SAR (1g) (W/kg)**	**Power Drift (<±5%)**	**Twice SAR (1g) (W/kg)**	**Power Drift (<±5%)**	**Third SAR (1g) (W/kg)**	**Limit W/kg**
Body back	GPRS-4 slot	512	1850.2	0.02	1.177	--	--	--	--	1.6

Simultaneous Multi-band Transmission Evaluation:

Application Simultaneous Transmission information:

NO	Simultaneous state	Portable Handset		
		Head	Body-worn	Hotspot
1	GSM (Data) + WLAN 2.4GHz&5.2GHz&5.8GHz (data)	-	Yes	Yes
2	GSM (Data) + Bluetooth(data)	-	Yes	Yes
3	WCDMA+ WLAN 2.4GHz&5.2GHz&5.8GHz (data)	-	Yes	Yes
4	WCDMA+ Bluetooth(data)	-	Yes	Yes
5	LTE + WLAN 2.4GHz&5.2GHz&5.8GHz (data)	-	Yes	Yes
6	LTE + Bluetooth(data)	--	Yes	Yes

NOTE:

1. WIFI and BT share the same antenna, and cannot transmit simultaneously.
2. Simultaneous with every transmitter must be the same test position.
3. KDB 447498 D01, BT SAR is excluded as below table.
4. KDB 447498 D01, for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user; which is 0mm for head SAR and 0mm for body-worn SAR.
5. According to KDB 447498 D01 4.3.1, Standalone SAR test exclusion is as follow:
   For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
   [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR[30], where
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation[31]
   - The result is rounded to one decimal place for comparison
   - The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

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

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

Estimated SAR		Max Power including Tune-up Tolerance		Separation Distance (mm)	Estimated SAR (W/kg)
		dBm	mW		
BT	Body	8	6.310	0	0.261

Sum of the SAR for GSM 850 &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		GSM 850	2.4G WI-Fi DTS Band	Bluetooth		
Body-worn (Data)	Rear	0.652		0.261	0.913	No
		0.652	0.244		0.896	No
	Front	0.576		0.261	0.837	No
		0.576	0.296		0.872	No
Body-worn (Hotspot)	Edge 1	0.439	0.188		0.627	No
	Edge 2	0.196	--		0.196	No
	Edge 1	0.439		0.261	0.700	No
	Edge 2	0.196		0.261	0.457	No

Note:

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

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

Sum of the SAR for PCS 1900 &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		PCS 1900	2.4G WI-Fi DTS Band	Bluetooth		
Body-worn (Data)	Rear	1.196		0.261	1.457	No
		1.196	0.244		1.440	No
	Front	0.803		0.261	1.064	No
		0.803	0.296		1.099	No
Body-worn (Hotspot)	Edge 1	0.338	0.188		0.526	No
	Edge 2	0.143	--		0.143	No
	Edge 1	0.338		0.261	0.599	No
	Edge 2	0.143		0.261	0.404	No

Note:

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

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

Sum of the SAR for WCDMA Band II &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band II	2.4G Wi-Fi DTS Band	Bluetooth		
Body-worn	Rear	0.435	0.244		0.679	No
	Front	0.534	0.296		0.830	No
	Edge 1	0.317	0.188		0.505	No
	Edge 2	0.148	--		0.148	No
	Rear	0.435		0.261	0.696	No
	Front	0.534		0.261	0.795	No
	Edge 1	0.317		0.261	0.578	No
	Edge 2	0.148		0.261	0.409	No

Note:

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

Sum of the SAR for WCDMA Band V &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band V	2.4G Wi-Fi DTS Band	Bluetooth		
Body-worn	Rear	0.110	0.244		0.354	No
	Front	0.725	0.296		1.021	No
	Edge 1	0.575	0.188		0.763	No
	Edge 2	0.029	--		0.029	No
	Rear	0.110		0.261	0.371	No
	Front	0.725		0.261	0.986	No
	Edge 1	0.575		0.261	0.836	No
	Edge 2	0.029		0.261	0.290	No

Note:

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

Sum of the SAR for LTE Band 2 &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 2	2.4G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.549	0.244		0.793	No
	Front	0.773	0.296		1.069	No
	Edge 1	0.458	0.188		0.646	No
	Edge 2	0.164	--		0.164	No
	Rear	0.549		0.261	0.810	No
	Front	0.773		0.261	1.034	No
	Edge 1	0.458		0.261	0.719	No
	Edge 2	0.164		0.261	0.425	No
Body-worn(50%RB)	Rear	0.600	0.244		0.844	No
	Front	0.723	0.296		1.019	No
	Edge 1	0.506	0.188		0.694	No
	Edge 2	0.076	--		0.076	No
	Rear	0.600		0.261	0.861	No
	Front	0.723		0.261	0.984	No
	Edge 1	0.506		0.261	0.767	No
	Edge 2	0.076		0.261	0.337	No

Note:

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

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

Sum of the SAR for LTE Band 4 &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 4	2.4G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.513	0.244		0.757	No
	Front	0.703	0.296		0.999	No
	Edge 1	0.541	0.188		0.729	No
	Edge 2	0.136	--		0.136	No
	Rear	0.513		0.261	0.774	No
	Front	0.703		0.261	0.964	No
	Edge 1	0.541		0.261	0.802	No
	Edge 2	0.136		0.261	0.397	No
Body-worn(50%RB)	Rear	0.503	0.244		0.747	No
	Front	0.564	0.296		0.860	No
	Edge 1	0.375	0.188		0.563	No
	Edge 2	0.120	*--		0.120	No
	Rear	0.503		0.261	0.764	No
	Front	0.564		0.261	0.825	No
	Edge 1	0.375		0.261	0.636	No
	Edge 2	0.120		0.261	0.381	No

Note:

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

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

Sum of the SAR for LTE Band 12 &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 12	2.4G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.474	0.244		0.718	No
	Front	0.597	0.296		0.893	No
	Edge 1	0.662	0.188		0.850	No
	Edge 2	0.014	--		0.014	No
	Rear	0.474		0.261	0.735	No
	Front	0.597		0.261	0.858	No
	Edge 1	0.662		0.261	0.923	No
	Edge 2	0.014		0.261	0.275	No
Body-worn(50%RB)	Rear	0.534	0.244		0.778	No
	Front	0.594	0.296		0.890	No
	Edge 1	0.739	0.188		0.927	No
	Edge 2	0.019	--		0.019	No
	Rear	0.534		0.261	0.795	No
	Front	0.594		0.261	0.855	No
	Edge 1	0.739		0.261	1.000	No
	Edge 2	0.019		0.261	0.280	No

Note:

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

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

Sum of the SAR for LTE Band 17 &2.4G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 17	2.4G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.451	0.244		0.695	No
	Front	0.653	0.296		0.949	No
	Edge 1	0.118	0.188		0.306	No
	Edge 2	0.016	--		0.016	No
	Rear	0.451		0.261	0.712	No
	Front	0.653		0.261	0.914	No
	Edge 1	0.118		0.261	0.379	No
	Edge 2	0.016		0.261	0.277	No
Body-worn(50%RB)	Rear	0.441	0.244		0.685	No
	Front	0.616	0.296		0.912	No
	Edge 1	0.134	0.188		0.322	No
	Edge 2	0.021	--		0.021	No
	Rear	0.441		0.261	0.702	No
	Front	0.616		0.261	0.877	No
	Edge 1	0.134		0.261	0.395	No
	Edge 2	0.021		0.261	0.282	No

Note:

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

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

Sum of the SAR for GSM 850 &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		GSM 850	5.2G WI-Fi DTS Band	Bluetooth		
Body-worn (Data)	Rear	0.652		0.261	0.913	No
		0.652	0.277		0.929	No
	Front	0.576		0.261	0.837	No
		0.576	0.685		1.261	No
Body-worn (Hotspot)	Edge 1	0.439	0.059		0.498	No
	Edge 2	0.196	--		0.196	No
	Edge 1	0.439		0.261	0.700	No
	Edge 2	0.196		0.261	0.457	No

Note:

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

SPLSR mean is "The SAR to Peak Location Separation Ratio "

Sum of the SAR for PCS 1900 &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		PCS 1900	5.2G WI-Fi DTS Band	Bluetooth		
Body-worn (Data)	Rear	1.196		0.261	1.457	No
		1.196	0.277		1.473	No
	Front	0.803		0.261	1.064	No
		0.803	0.685		**1.488**	No
Body-worn (Hotspot)	Edge 1	0.338	0.059		0.397	No
	Edge 2	0.143	--		0.143	No
	Edge 1	0.338		0.261	0.599	No
	Edge 2	0.143		0.261	0.404	No

Note:

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

SPLSR mean is "The SAR to Peak Location Separation Ratio "

Sum of the SAR for WCDMA Band II &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band II	5.2G Wi-Fi DTS Band	Bluetooth		
Body-worn	Rear	0.435	0.277		0.712	No
	Front	0.534	0.685		1.219	No
	Edge 1	0.317	0.059		0.376	No
	Edge 2	0.148	--		0.148	No
	Rear	0.435		0.261	0.696	No
	Front	0.534		0.261	0.795	No
	Edge 1	0.317		0.261	0.578	No
	Edge 2	0.148		0.261	0.409	No

Note:

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

Sum of the SAR for WCDMA Band V &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band V	5.2G Wi-Fi DTS Band	Bluetooth		
Body-worn	Rear	0.110	0.277		0.387	No
	Front	0.725	0.685		1.410	No
	Edge 1	0.575	0.059		0.634	No
	Edge 2	0.029	--		0.029	No
	Rear	0.110		0.261	0.371	No
	Front	0.725		0.261	0.986	No
	Edge 1	0.575		0.261	0.836	No
	Edge 2	0.029		0.261	0.290	No

Note:

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

Sum of the SAR for LTE Band 2 &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 2	5.2G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.549	0.277		0.826	No
	Front	0.773	0.685		1.458	No
	Edge 1	0.458	0.059		0.517	No
	Edge 2	0.164	--		0.164	No
	Rear	0.549		0.261	0.810	No
	Front	0.773		0.261	1.034	No
	Edge 1	0.458		0.261	0.719	No
	Edge 2	0.164		0.261	0.425	No
Body-worn(50%RB)	Rear	0.600	0.277		0.877	No
	Front	0.723	0.685		1.408	No
	Edge 1	0.506	0.059		0.565	No
	Edge 2	V	--		0.076	No
	Rear	0.600		0.261	0.861	No
	Front	0.723		0.261	0.984	No
	Edge 1	0.506		0.261	0.767	No
	Edge 2	0.076			0.076	No

Note:

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

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

Sum of the SAR for LTE Band 4 &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 4	5.2G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.513	0.277		0.790	No
	Front	0.703	0.685		1.388	No
	Edge 1	0.541	0.059		0.600	No
	Edge 2	0.136	--		0.136	No
	Rear	0.513		0.261	0.774	No
	Front	0.703		0.261	0.964	No
	Edge 1	0.541		0.261	0.802	No
	Edge 2	0.136		0.261	0.397	No
Body-worn(50%RB)	Rear	0.503	0.277		0.780	No
	Front	0.564	0.685		1.249	No
	Edge 1	0.375	0.059		0.434	No
	Edge 2	0.120	--		0.120	No
	Rear	0.503		0.261	0.764	No
	Front	0.564		0.261	0.825	No
	Edge 1	0.375		0.261	0.636	No
	Edge 2	0.120		0.261	0.381	No

Note:

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

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

Sum of the SAR for LTE Band 12 &5.2G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 12	5.2G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.474	0.277		0.751	No
	Front	0.597	0.685		1.282	No
	Edge 1	0.662	0.059		0.721	No
	Edge 2	0.014	--		0.014	No
	Rear	0.474		0.261	0.735	No
	Front	0.597		0.261	0.858	No
	Edge 1	0.662		0.261	0.923	No
	Edge 2	0.014		0.261	0.275	No
Body-worn(50%RB)	Rear	0.534	0.277		0.811	No
	Front	0.594	0.685		1.279	No
	Edge 1	0.739	0.059		0.798	No
	Edge 2	0.019	--		0.019	No
	Rear	0.534		0.261	0.795	No
	Front	0.594		0.261	0.855	No
	Edge 1	0.739		0.261	1.000	No
	Edge 2	0.019		0.261	0.280	No

Note:

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

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

Sum of the SAR for LTE Band 17 &5.2GWi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 17	5.2G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.451	0.277		0.728	No
	Front	0.653	0.685		1.338	No
	Edge 1	0.118	0.059		0.177	No
	Edge 2	0.016	--		0.016	No
	Rear	0.451		0.261	0.712	No
	Front	0.653		0.261	0.914	No
	Edge 1	0.118		0.261	0.379	No
	Edge 2	0.016		0.261	0.277	No
Body-worn(50%RB)	Rear	0.441	0.277		0.718	No
	Front	0.616	0.685		1.301	No
	Edge 1	0.134	0.059		0.193	No
	Edge 2	0.021	--		0.021	No
	Rear	0.441		0.261	0.702	No
	Front	0.616		0.261	0.877	No
	Edge 1	0.134		0.261	0.395	No
	Edge 2	0.021		0.261	0.282	No

Note:

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

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

Sum of the SAR for GSM 850 &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		GSM 850	5.8G WI-Fi DTS Band	Bluetooth		
Body-worn (Data)	Rear	0.652		0.261	0.913	No
		0.652	0.319		0.971	No
	Front	0.576		0.261	0.837	No
		0.576	0.755		1.331	No
Body-worn (Hotspot)	Edge 1	0.439	0.057		0.496	No
	Edge 2	0.196	--		0.196	No
	Edge 1	0.439		0.261	0.700	No
	Edge 2	0.196		0.261	0.457	No

Note:

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

SPLSR mean is "The SAR to Peak Location Separation Ratio "

Sum of the SAR for PCS 1900 &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		PCS 1900	5.8G WI-Fi DTS Band	Bluetooth		
Body-worn (Data)	Rear	1.196		0.261	1.457	No
		1.196	0.319		1.515	No
	Front	0.803		0.261	1.064	No
		0.803	0.755		**1.558**	No
Body-worn (Hotspot)	Edge 1	0.338	0.057		0.395	No
	Edge 2	0.143	--		0.143	No
	Edge 1	0.338		0.261	0.599	No
	Edge 2	0.143		0.261	0.404	No

Note:

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

SPLSR mean is "The SAR to Peak Location Separation Ratio "

Sum of the SAR for WCDMA Band II &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band II	5.8G Wi-Fi DTS Band	Bluetooth		
Body-worn	Rear	0.435	0.319		0.754	No
	Front	0.534	0.755		1.289	No
	Edge 1	0.317	0.057		0.374	No
	Edge 2	0.148	--		0.148	No
	Rear	0.435		0.261	0.696	No
	Front	0.534		0.261	0.795	No
	Edge 1	0.317		0.261	0.578	No
	Edge 2	0.148		0.261	0.409	No

Note:

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

Sum of the SAR for WCDMA Band V &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band V	5.8G Wi-Fi DTS Band	Bluetooth		
Body-worn	Rear	0.110	0.319		0.429	No
	Front	0.725	0.755		1.480	No
	Edge 1	0.575	0.057		0.632	No
	Edge 2	0.029	--		0.029	No
	Rear	0.110		0.261	0.371	No
	Front	0.725		0.261	0.986	No
	Edge 1	0.575		0.261	0.836	No
	Edge 2	0.029		0.261	0.290	No

Note:

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

Sum of the SAR for LTE Band 2 &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 2	5.8G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.549	0.319		0.868	No
	Front	0.773	0.755		1.528	No
	Edge 1	0.458	0.057		0.515	No
	Edge 2	0.164	--		0.164	No
	Rear	0.549		0.261	0.810	No
	Front	0.773		0.261	1.034	No
	Edge 1	0.458		0.261	0.719	No
	Edge 2	0.164		0.261	0.425	No
Body-worn(50%RB)	Rear	0.600	0.319		0.919	No
	Front	0.723	0.755		1.478	No
	Edge 1	0.506	0.057		0.563	No
	Edge 2	0.076	--		0.076	No
	Rear	0.600		0.261	0.861	No
	Front	0.723		0.261	0.984	No
	Edge 1	0.506		0.261	0.767	No
	Edge 2	0.076		0.261	0.337	No

Note:

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

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

Sum of the SAR for LTE Band 4 &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 4	5.8G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.513	0.319		0.832	No
	Front	0.703	0.755		1.458	No
	Edge 1	0.541	0.057		0.598	No
	Edge 2	0.136	--		0.136	No
	Rear	0.513		0.261	0.774	No
	Front	0.703		0.261	0.964	No
	Edge 1	0.541		0.261	0.802	No
	Edge 2	0.136		0.261	0.397	No
Body-worn(50%RB)	Rear	0.503	0.319		0.822	No
	Front	0.564	0.755		1.319	No
	Edge 1	0.375	0.057		0.432	No
	Edge 2	0.120	--		0.120	No
	Rear	0.503		0.261	0.764	No
	Front	0.564		0.261	0.825	No
	Edge 1	0.375		0.261	0.636	No
	Edge 2	0.120		0.261	0.381	No

Note:

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

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

Sum of the SAR for LTE Band 12 &5.8G Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 12	5.8G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.474	0.319		0.793	No
	Front	0.597	0.755		1.352	No
	Edge 1	0.662	0.057		0.719	No
	Edge 2	0.014	--		0.014	No
	Rear	0.474		0.261	0.735	No
	Front	0.597		0.261	0.858	No
	Edge 1	0.662		0.261	0.923	No
	Edge 2	0.014		0.261	0.275	No
Body-worn(50%RB)	Rear	0.534	0.319		0.853	No
	Front	0.594	0.755		1.349	No
	Edge 1	0.739	0.057		0.796	No
	Edge 2	0.019	--		0.019	No
	Rear	0.534		0.261	0.795	No
	Front	0.594		0.261	0.855	No
	Edge 1	0.739		0.261	1.000	No
	Edge 2	0.019		0.261	0.280	No

Note:

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

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

Sum of the SAR for LTE Band 17 &5.8GWi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		LTE Band 17	5.8G Wi-Fi DTS Band	Bluetooth		
Body-worn(1RB)	Rear	0.451	0.319		0.770	No
	Front	0.653	0.755		1.408	No
	Edge 1	0.118	0.057		0.175	No
	Edge 2	0.016	--		0.016	No
	Rear	0.451		0.261	0.712	No
	Front	0.653		0.261	0.914	No
	Edge 1	0.118		0.261	0.379	No
	Edge 2	0.016		0.261	0.277	No
Body-worn(50%RB)	Rear	0.441	0.319		0.760	No
	Front	0.616	0.755		1.371	No
	Edge 1	0.134	0.057		0.191	No
	Edge 2	0.021	--		0.021	No
	Rear	0.441		0.261	0.702	No
	Front	0.616		0.261	0.877	No
	Edge 1	0.134		0.261	0.395	No
	Edge 2	0.021		0.261	0.282	No

Note:

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

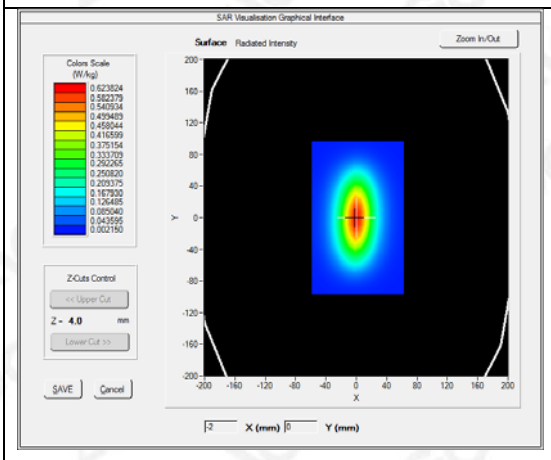
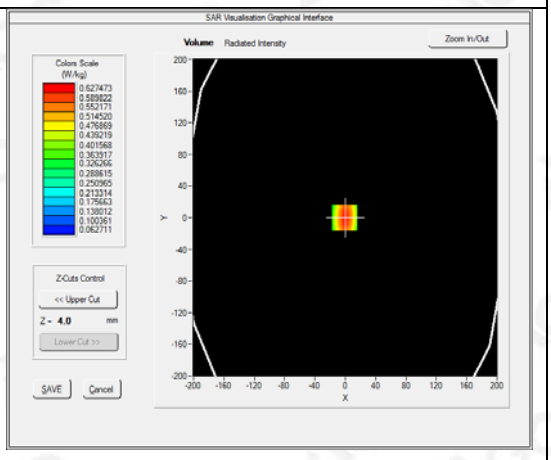
SPLSR mean is “The SAR to Peak Location Separation Ratio “

APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab **Date: Mar. 20,2020**
System Check Head 750 MHz
DUT: Dipole 750 MHz Type: SID 750
Communication System CW; Communication System Band: D750 (750.0 MHz); Duty Cycle: 1:1; Conv.F=4.97
Frequency: 750 MHz; Medium parameters used: f = 750 MHz; σ=0.91 mho/m; εr =42.62; ρ= 1000 kg/m ³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.4, Liquid temperature (℃): 21.1

SATIMO Configuration:
- Probe: SSE5; Calibrated: Jun. 04,2019; Serial No.: SN 22/16 EP315
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

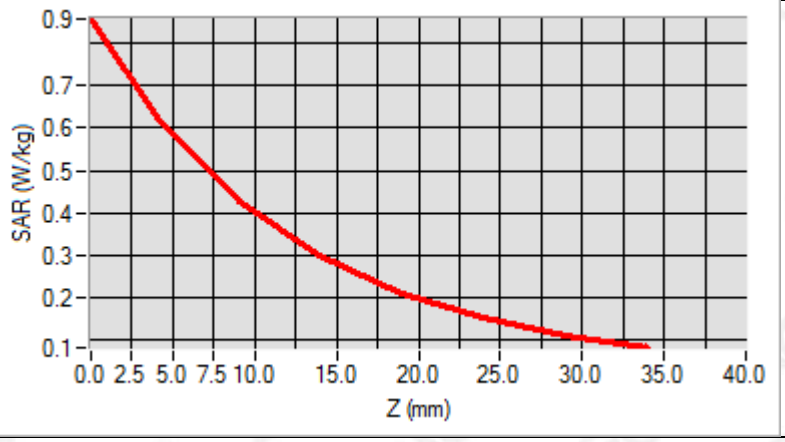
Configuration/System Check 750MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 750MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

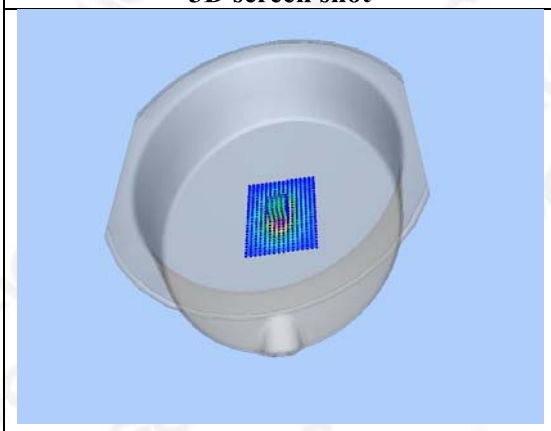
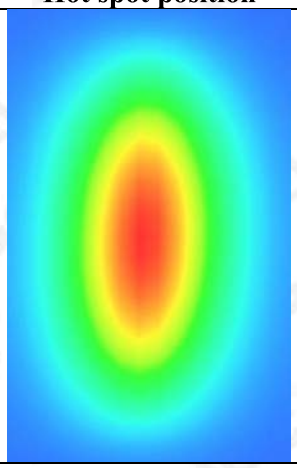
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=0.00
SAR Peak: 0.86 W/kg

SAR 10g (W/Kg)	0.362364
SAR 1g (W/Kg)	0.568345

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.8531	0.6275	0.4262	0.2947	0.2138	0.1548	0.1148

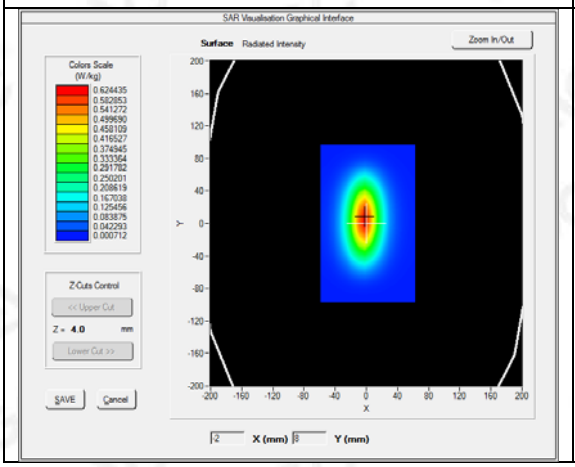
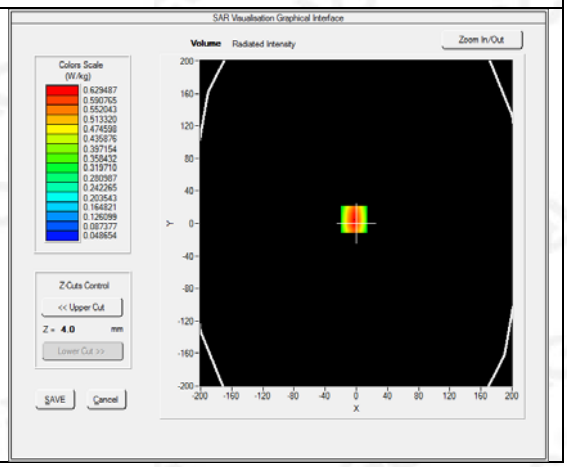


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar. 22,2020**
System Check Head 835 MHz
DUT: Dipole 835 MHz Type: SID 835
Communication System CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1; Conv.F=5.05
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =41.6; ρ= 1000 kg/m ³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.0, Liquid temperature (℃): 20.7

SATIMO Configuration:
- Probe: SSE5; Calibrated: Jun. 04,2019; Serial No.: SN 22/16 EP315
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

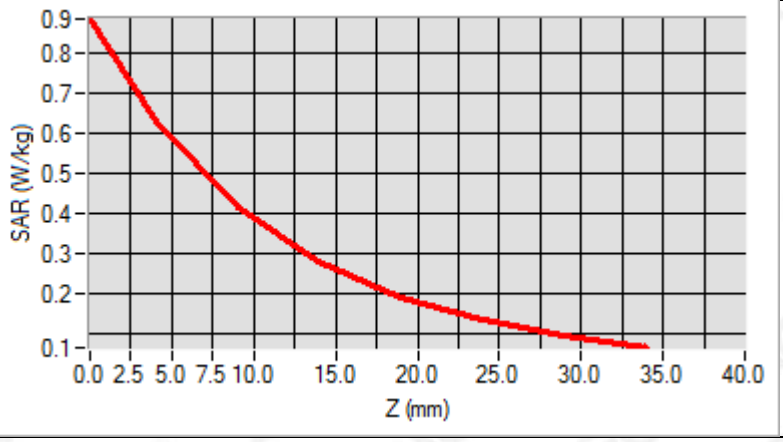
Configuration/System Check 835MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 835MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

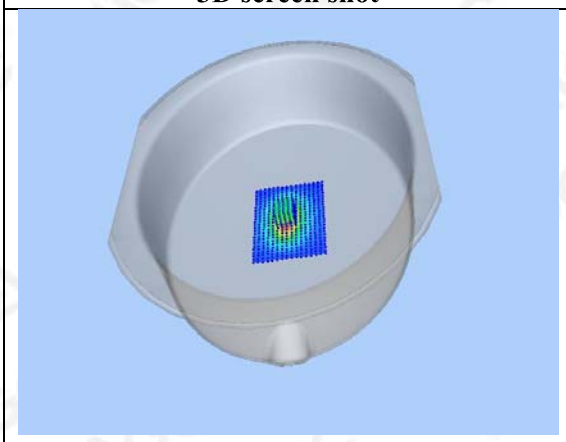
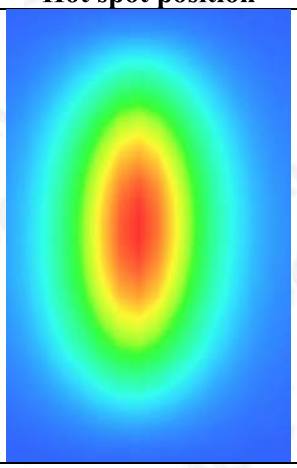
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-3.00, Y=5.00
SAR Peak: 0.88 W/kg

SAR 10g (W/Kg)	0.358734
SAR 1g (W/Kg)	0.625743

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.8858	0.6295	0.4136	0.2802	0.1931	0.1344	0.0938

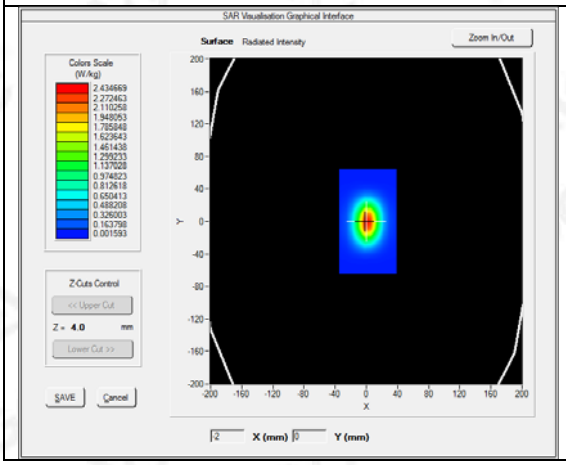
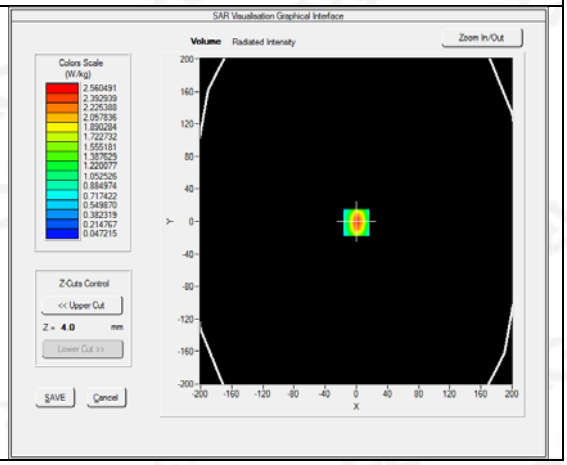


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar. 19,2020**
System Check Head 1750MHz
DUT: Dipole 1800 MHz; Type: SID 1800
Communication System: CW; Communication System Band: D1700 (1750.0 MHz); Duty Cycle:1:1; Conv.F=4.05
Frequency: 1750 MHz; Medium parameters used: f = 1800MHz; σ=1.35 mho/m; εr =39.62; ρ= 1000 kg/m ³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃): 21.2, Liquid temperature (℃): 20.9

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 04,2019; Serial No.: SN 22/16 EP315
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

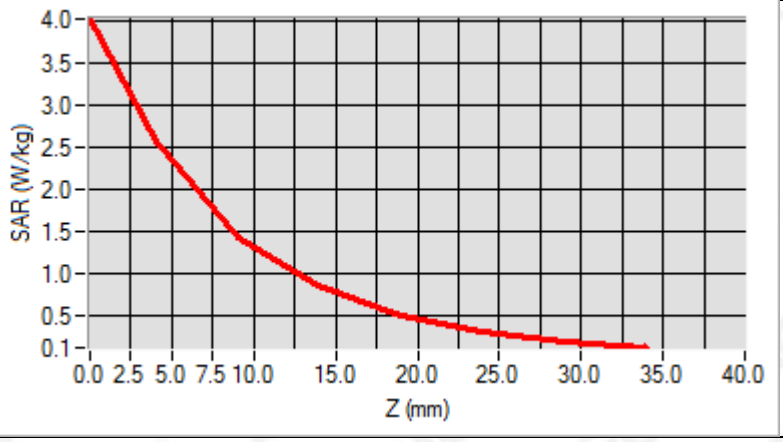
Configuration/System Check 1750MHz Head/Area Scan: Measurement grid: dx=8mm,dy=8mm
Configuration/System Check 1750MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

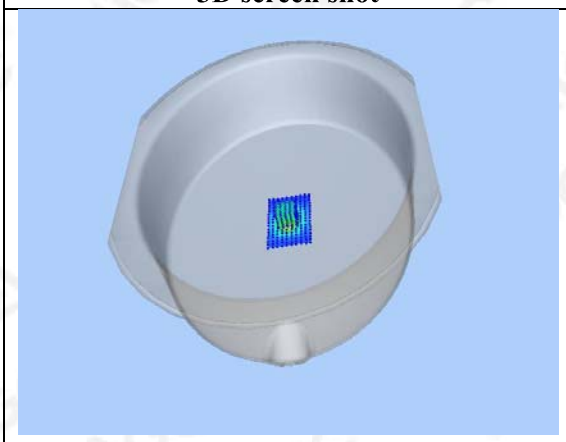
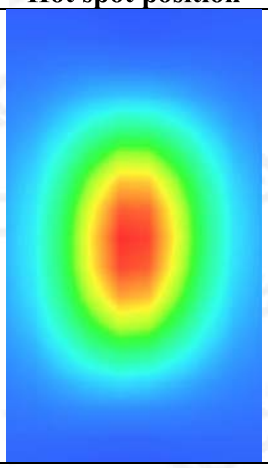
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-1.00
SAR Peak: 4.03 W/kg

SAR 10g (W/Kg)	1.257152
SAR 1g (W/Kg)	2.409247

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.0235	2.5671	1.4256	0.8343	0.4964	0.2902	0.1774

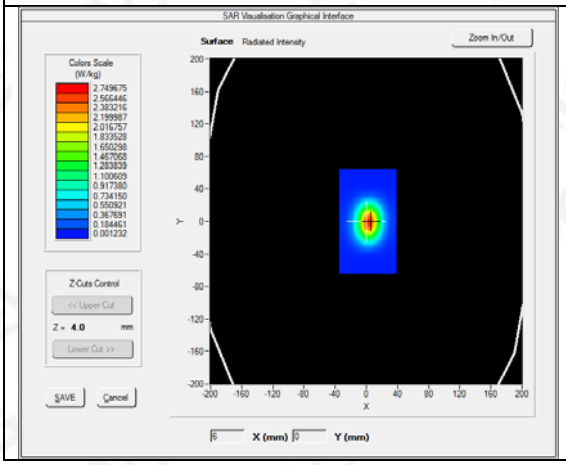
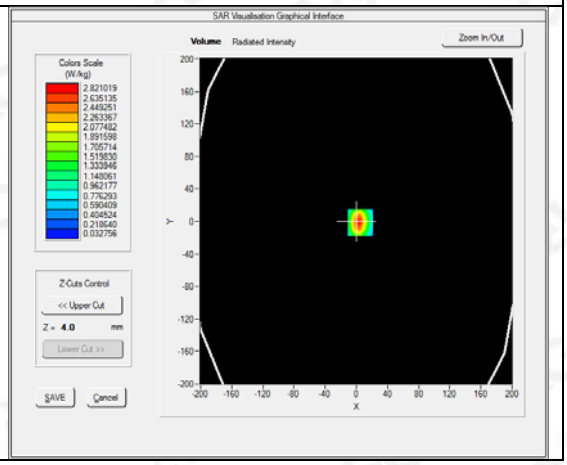


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar. 24,2020**
System Check Head 1900MHz
DUT: Dipole 1900 MHz; Type: SID 1900
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1; Conv.F=4.48
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.37 mho/m; εr =39.62; ρ= 1000 kg/m ³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 04,2019; Serial No.: SN 22/16 EP315
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

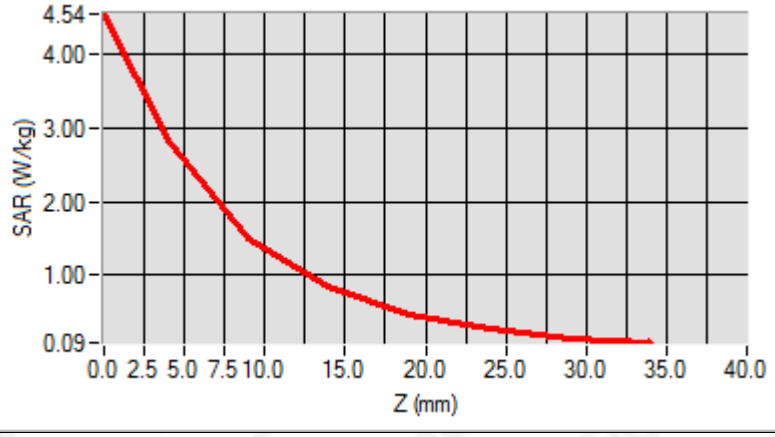
Configuration/System Check 1900MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 1900MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

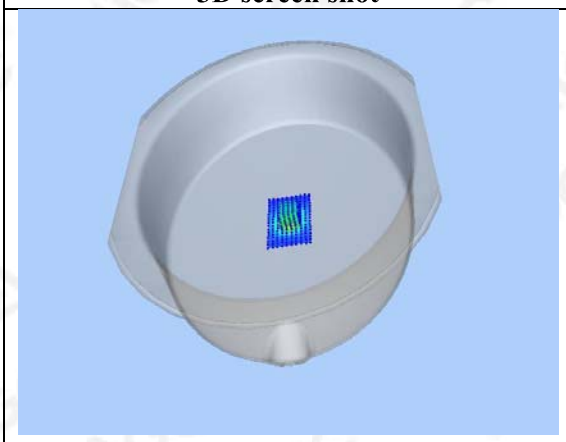
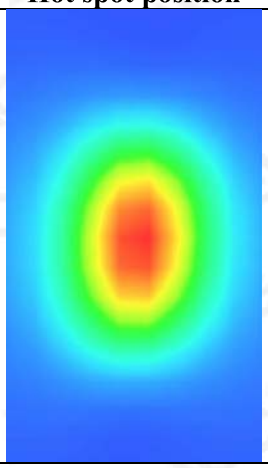
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-1.00
SAR Peak: 4.60 W/kg

SAR 10g (W/Kg)	1.336245
SAR 1g (W/Kg)	2.689424

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.5422	2.8210	1.5093	0.8464	0.4733	0.2690	0.1533

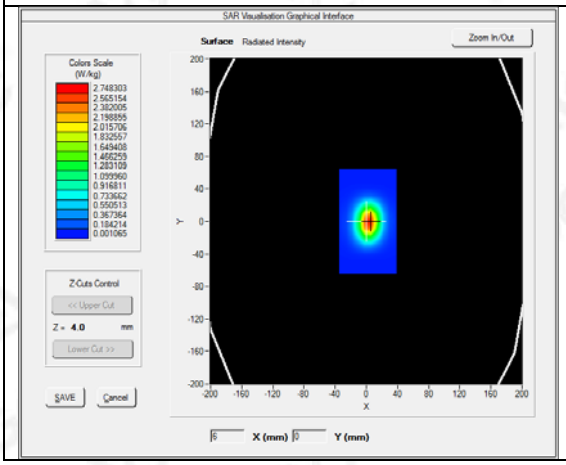
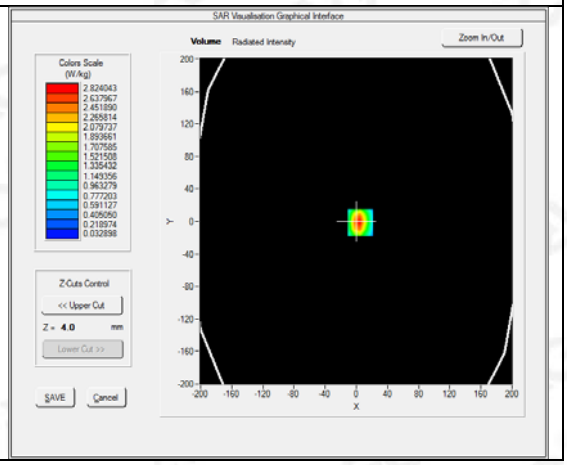


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar. 17,2020**
System Check Head 1900MHz
DUT: Dipole 1900 MHz; Type: SID 1900
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1; Conv.F=4.48
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.36 mho/m; εr =39.51; ρ= 1000 kg/m ³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 04,2019; Serial No.: SN 22/16 EP315
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

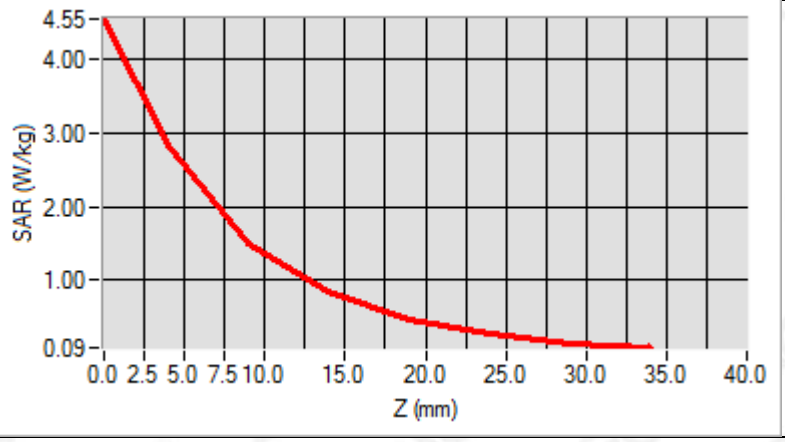
Configuration/System Check 1900MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 1900MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

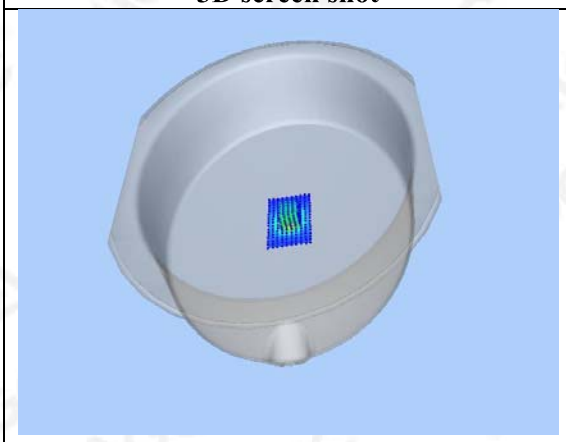
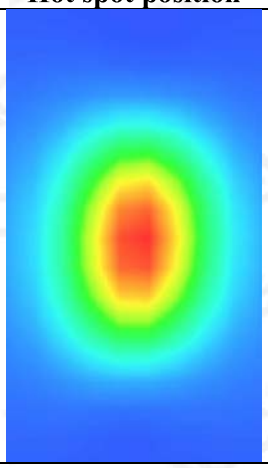
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-1.00
SAR Peak: 4.61 W/kg

SAR 10g (W/Kg)	1.371537
SAR 1g (W/Kg)	2.691028

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.5501	2.8238	1.5041	0.8474	0.4735	0.2625	0.1513

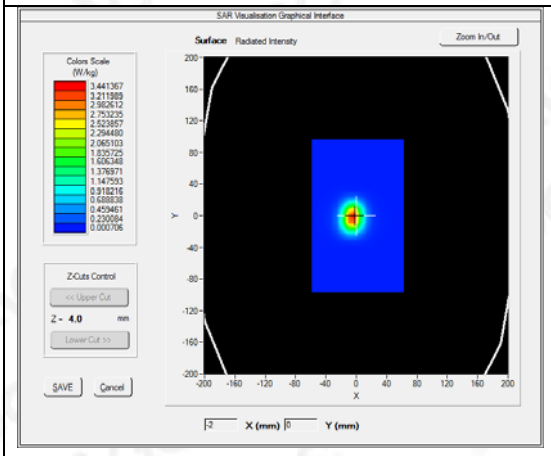
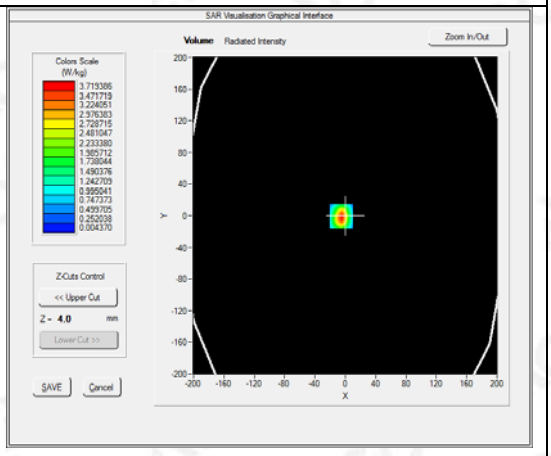


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar. 31,2020**
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450
Communication System CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.12
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ=1.85 mho/m; εr =38.52; ρ= 1000 kg/m ³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration
- Probe: SSE5; Calibrated: Jun. 04,2019; Serial No.: SN 22/16 EP315
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

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

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-5.00, Y=-1.00
SAR Peak: 7.59 W/kg

SAR 10g (W/Kg)	1.389345
SAR 1g (W/Kg)	3.484752