FCC SAR TEST REPORT

Report No.: STS2008302H01

Issued for

DMAI (Guangzhou) Co., Ltd.

16/F, No.37, Jinlong Road, Nansha District, Guangzhou City, China.

Product Name:	AILA Sit & Play™
Brand Name:	Animal Island Learning Adventure™
Model Name:	X4C-US20
Series Model:	X4C-US21, X4C-US22
FCC ID:	2AU9S-X4C-US20
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
Max. Report SAR (1g):	Body: 0.655 W/kg

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Test Report Certification

Applicant's name ..... :	DMAI (Guangzhou) Co., Ltd.
Address ..... :	16/F, No.37, Jinlong Road, Nansha District, Guangzhou City, China.
Manufacture's Name ..... :	DMAI (Guangzhou) Co., Ltd.
Address ..... :	16/F, No.37, Jinlong Road, Nansha District, Guangzhou City, China.

Product description

Product name ..... :	AILA Sit & Play™
Brand name ..... :	Animal Island Learning Adventure™
Model name ..... :	X4C-US20
Series Model..... :	X4C-US21, X4C-US22
Standards..... :	ANSI/IEEE Std. C95.1-1992 FCC 47 CFR Part 2 (2.1093) IEEE 1528: 2013

The device was tested by Shenzhen STS Test Services Co., Ltd. in accordance with the measurement methods and procedures specified in KDB 865664 The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test..... :	
Date (s) of performance of tests..... :	31 Aug. 2020~03 Sept. 2020
Date of Issue..... :	07 Sept. 2020
Test Result..... :	**Pass**

Testing Engineer **:** Aaron Bu

(Aaron Bu)

Technical Manager **:** Sean She

(Sean She)

Authorized Signatory **:** Vita

(Vita Li)

Table of Contents

Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	07 Sept. 2020	STS2008302H01	ALL	Initial Issue
Note: **Format version** of the report -V01				

1. General Information

Environmental evaluation measurements of specific absorption rate (SAR) distributions in emulated human head and body tissues exposed to radio frequency (RF) radiation from wireless portable devices for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC).

1.1 EUT Description

Product Name	AILA Sit & Play™
Brand Name	Animal Island Learning Adventure™
Model Name	X4C-US20
Series Model	X4C-US21, X4C-US22
Model Difference	Only different in model name.
Battery	Rated Voltage: 3.6V Charge Limit: 4.2V Capacity: 6000mAh
Device Category	Portable
Product stage	Production unit
RF Exposure Environment	General Population / Uncontrolled
IMEI	N/A
Hardware Version	X4C-RK3288-D3(216)-V0.1
Software Version	Rk3288-userdebug 8.1.0 oc 205802 test-keys
Frequency Range	2.4GHz WLAN IEEE 802.11b/g/n(20MHz): 2412MHz to 2462 MHz 2.4GHz WLAN IEEE 802.11n(HT40): 2422MHz to 2452 MHz 5GHz WLAN IEEE 802.11a/n(HT20): 5.180 – 5.240GHz 5GHz WLAN IEEE 802.11n/ac(HT40): 5.190 – 5.230GHz 5GHz WLAN IEEE 802.11ac(HT80): 5.210GHz 5GHz WLAN IEEE 802.11a/n(HT20): 5.260 – 5.320GHz 5GHz WLAN IEEE 802.11n/ac(HT40): 5.270 – 5.310GHz 5GHz WLAN IEEE 802.11ac(HT80): 5.290GHz 5GHz WLAN IEEE 802.11a/n/ac(HT20): 5.745GHz - 5.825GHz 5GHz WLAN IEEE 802.11n/ac(HT40): 5.755GHz - 5.795GHz 5GHz WLAN IEEE 802.11ac(HT80): 5.755GHz Bluetooth: 2402~ 2480MHz

Max. Reported SAR(1g): (Limit:1.6W/kg)

Band	ANT	Mode	Top of display (W/kg)
DTS	2.4G WLAN ANTA	802.11b	0.366
DTS	2.4G WLAN ANTA	802.11g	0.524
DTS	2.4G WLAN ANTA+B	802.11n20	0.394
NII	5.2G WLAN ANTA	802.11a20	0.390
NII	5.2G WLAN ANTA+B	802.11n20	0.655
NII	5.3G WLAN ANTA	802.11a20	0.351
NII	5.3G WLAN ANTA+B	802.11n20	0.472
NII	5.8G WLAN ANTA	802.11a20	0.433
NII	5.8G WLAN ANTA+B	802.11n20	0.516
DTS	BLE		0.073

FCC Equipment Class	Part 15 Spread Spectrum Transmitter (DSS) Digital Transmission System (DTS) Unlicensed National Information Infrastructure TX (NII)
Operating Mode:	WLAN: 802.11 a/b/g/n(HT20) /n(HT40)/ac(VHT20) /ac(VHT40) /ac(VHT80) Bluetooth: 4.2+EDR (GFSK +π/4DQPSK+8DPSK) BLE:GFSK

Antenna Specification:	BT, WLAN: PIFA Antenna
Hotspot Mode	Not Support
DTM Mode	Not Support

Note:
1. Bluetooth, 5.2G WLAN, 5.3G WLAN and 5.8G WLAN Body SAR was estimated
2. The dual SIM card mobile has 2 SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active)
3. After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 card to perform all tests.
4. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power

1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (℃)	18-25
Humidity (%RH)	30-70

1.3 Test Factor

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FCC test Firm Registration No.: 625569

IC Registration No.: 12108A

A2LA Certificate No.: 4338.01

2.Test Standards and Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

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

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

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

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

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

Population/Uncontrolled Environments:

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

Occupational/Controlled Environments:

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

NOTE

GENERAL POPULATION/UNCONTROLLED EXPOSURE

PARTIAL BODY LIMIT

1.6 W/kg

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.
The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

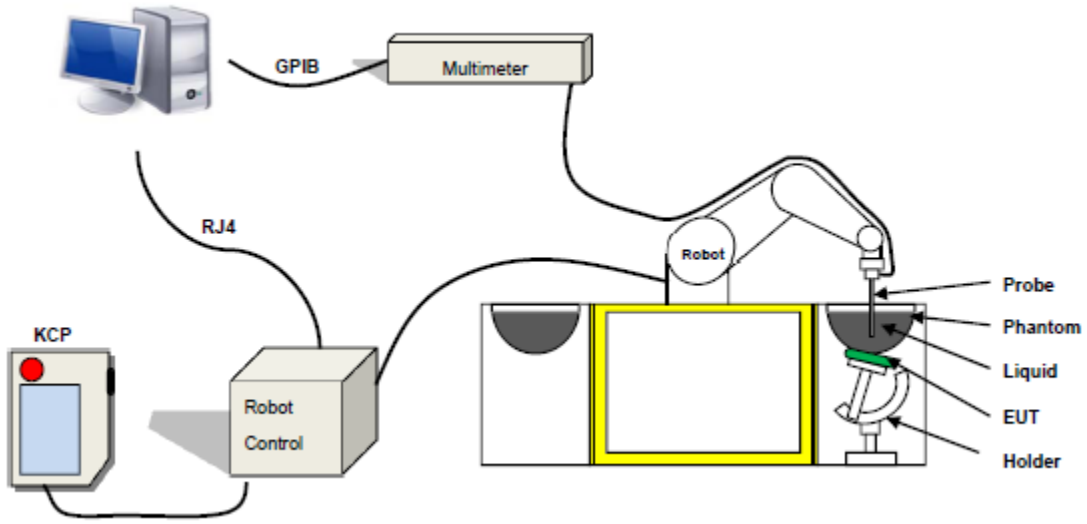
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue,
ρ is the mass density of the tissue and E is the RMS electrical field strength.

3.2 SAR System

MVG SAR System Diagram:



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

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

The following figure shows the system.

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

3.2.1 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 41/18 EPG0334 with following specifications is used

- Probe Length: 330 mm
- Length of Individual Dipoles: 2 mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter: 2.5 mm
- Distance between dipole/probe extremity: 1 mm
- Dynamic range: 0.01-100 W/kg
- Probe linearity: 3%
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 450 MHz to 6 GHz for head & body simulating liquid.
- Angle between probe axis (evaluation axis) and surface normal line: less than 30°

Figure 1-MVG COMOSAR Dosimetric E field Dipole

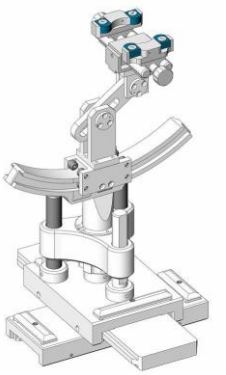
3.2.2 Phantom

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

SN 32/14 SAM115

SN 32/14 SAM116

3.2.3 Device Holder



The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.4. Tissue Simulating Liquids

4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

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

Head Tissue

Frequency (MHz)	cellulose	DGBE	HEC	NaCl	Preventol	Sugar	X100	Water	Conductivity	Permittivity
	%	%	%	%	%	%	%	%	σ	εr
750	0.2	/	/	1.4	0.2	57.0	/	41.1	0.89	41.9
835	0.2	/	/	1.4	0.2	57.9	/	40.3	0.90	41.5
900	0.2	/	/	1.4	0.2	57.9	/	40.3	0.97	41.5
1800	/	44.5	/	0.3	/	/	30.45	55.2	1.4	40.0
1900	/	44.5	/	0.3	/	/	30.45	55.2	1.4	40.0
2000	/	44.5	/	0.3	/	/	/	55.2	1.4	40.0
2450	/	44.9	/	0.1	/	/	/	55.0	1.80	39.2
2600	/	45.0	/	0.1	/	/	/	54.9	1.96	39.0

Body Tissue

Frequency (MHz)	cellulose	DGBE	HEC	NaCl	Preventol	Sugar	X100	Water	Conductivity	Permittivity
	%	%	%	%	%	%	%	%	σ	εr
750	0.2	/	/	0.9	0.1	47.2	/	51.7	0.96	55.5
835	0.2	/	/	0.9	0.1	48.2	/	50.8	0.97	55.2
900	0.2	/	/	0.9	0.1	48.2	/	50.8	1.05	55.0
1800	/	29.4	/	0.4	/	/	30.45	70.2	1.52	53.3
1900	/	29.4	/	0.4	/	/	30.45	70.2	1.52	53.3
2000	/	29.4	/	0.4	/	/	/	70.2	1.52	53.3
2450	/	31.3	/	0.1	/	/	/	68.6	1.95	52.7
2600	/	31.7	/	0.1	/	/	/	68.2	2.16	52.3

Tissue dielectric parameters for head and body phantoms				
Frequency	εr		σ S/m	
	Head	Body	Head	Body
300	45.3	58.2	0.87	0.92
450	43.5	56.7	0.87	0.94
900	41.5	55.0	0.97	1.05
1450	40.5	54.0	1.20	1.30
1800	40.0	53.3	1.40	1.52
2450	39.2	52.7	1.80	1.95
3000	38.5	52.0	2.40	2.73
5800	35.3	48.2	5.27	6.00

LIQUID MEASUREMENT RESULTS

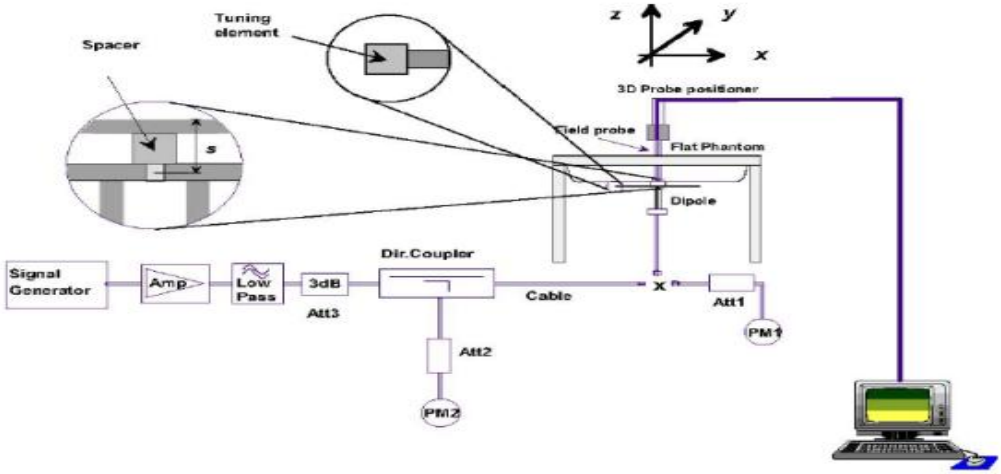
Date	Ambient condition		Body Simulating Liquid		Parameters	Target	Measured	Deviation [%]	Limited [%]
	Temp. [°C]	Humidity [%]	Frequency	Temp. [°C]					
2020-08-31	23.0	50	2450 MHz	22.6	Permittivity:	52.7	52.48	-0.42	±5
					Conductivity:	1.95	1.92	-1.54	±5
2020-09-01	23.0	54	5200 MHz	22.7	Permittivity:	49.0	49.35	0.71	±5
					Conductivity:	5.30	5.25	-0.94	±5
2020-09-02	22.9	57	5300 MHz	23.7	Permittivity:	48.7	48.61	-0.18	±5
					Conductivity:	5.53	5.42	-1.99	±5
2020-09-03	22.5	52	5800 MHz	22.3	Permittivity:	48.2	48.49	0.60	±5
					Conductivity:	6.00	6.18	3.00	±5

5. SAR System Validation

5.1 Validation System

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

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



5.2 Validation Result

Comparing to the original SAR value provided by MVG, the validation data should be within its specification of 10 %.

Freq.(MHz)	Power(mW)	Tested Value (W/Kg)	Normalized SAR (W/kg/W)	Target (W/Kg/W)	Tolerance(%)	Date
2450	100	5.055	50.55	52.4	-3.53	2020-08-31
5200	100	15.664	156.64	159.0	-1.48	2020-09-01
5300	100	16.571	165.71	166.4	-0.41	2020-09-02
5800	100	18.673	186.73	181.2	3.05	2020-09-03

Note:

1. The tolerance limit of System validation ±10%.
2. The dipole input power (forward power) was 100 mW.
3. The results are normalized to 1 W input power.

6. SAR Evaluation Procedures

The procedure for assessing the average SAR value consists of the following steps:
The following steps are used for each test position

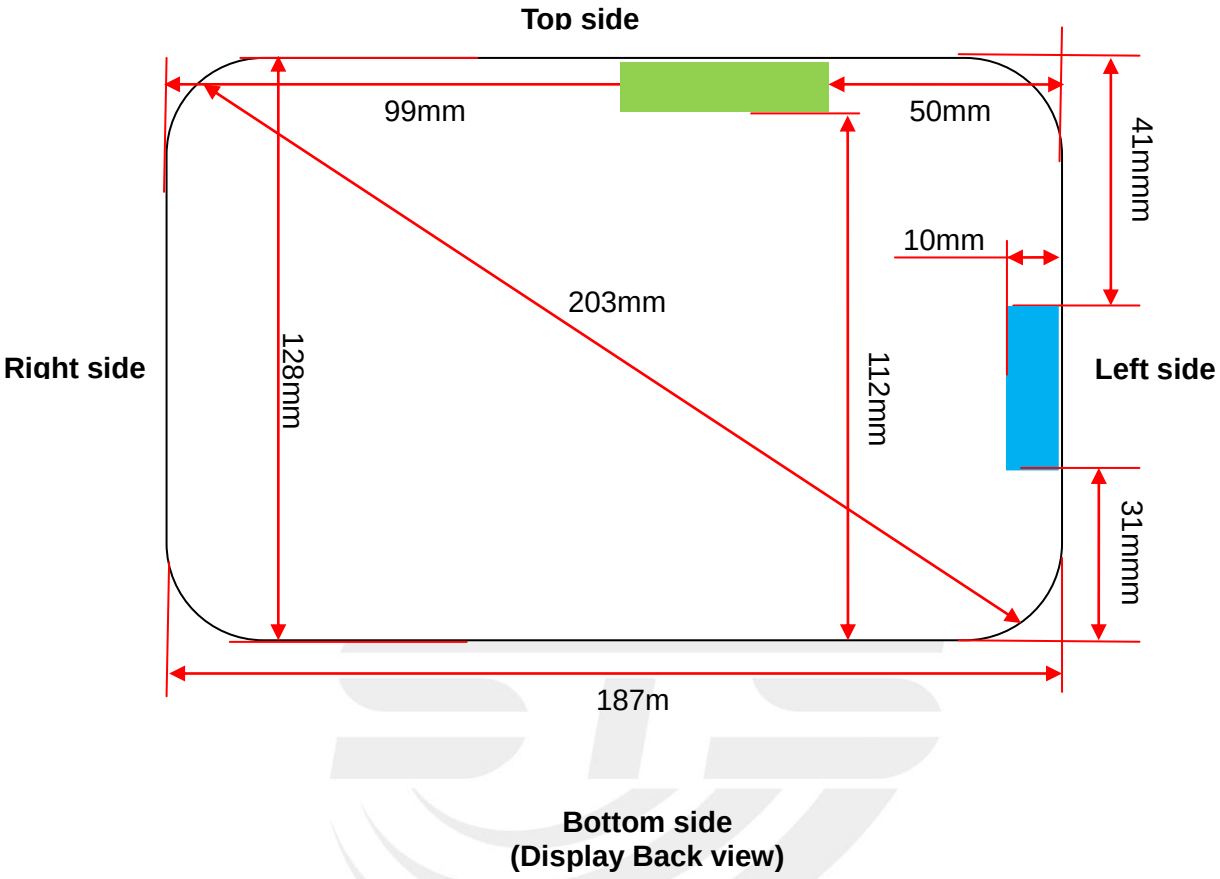
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

➢ Area Scan& Zoom Scan

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01 quoted below.
When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7. EUT Antenna Location Sketch

It is a AILA Sit & Play™, support WIFI/BT mode.



WLAN Ant B/BT Antenna

WLAN Ant A Antenna

Note 1: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

7.1 SAR test exclusion consider table

The WIFI/BT SAR evaluation of Maximum power (dBm) summing tolerance (antenna A/B/BT)

Exposure Position	Wireless Interface	2.4G WIFI		BT
	Antenna	A	B	/
	Calculated Frequency	2412	2412	2402
	Maximum power (dBm)	11.88	-2.69	1.99
	Maximum rated power(mW)	15.417	0.538	1.581
Top of the display	Separation distance (mm)	0	0	0
	Exclusion threshold(mW)	10	10	10
	Testing required?	YES	NO	NO
Bottom of the display	Separation distance (mm)	112	31	31
	Exclusion threshold(mW)	716	57	57
	Testing required?	NO	NO	NO
Right of the display	Separation distance (mm)	99	177	177
	Exclusion threshold(mW)	586	1366	1366
	Testing required?	NO	NO	NO
Left of the display	Separation distance (mm)	50	0	0
	exclusion threshold(mW)	96	10	10
	Testing required?	NO	NO	NO
Top of neck	Separation distance (mm)	0	85	85
	Exclusion threshold(mW)	10	446	446
	Testing required?	YES	NO	NO
Back of the base	Separation distance (mm)	112	94	94
	Exclusion threshold(mW)	716	536	536
	Testing required?	NO	NO	NO
Right of the base	Separation distance (mm)	120	142	142
	Exclusion threshold(mW)	796	1016	1016
	Testing required?	NO	NO	NO
Left of the base	Separation distance (mm)	110	78	78
	Exclusion threshold(mW)	896	376	376
	Testing required?	NO	NO	NO
Base bottom	Separation distance (mm)	146	115	115
	Exclusion threshold(mW)	1056	746	746
	Testing required?	NO	NO	NO

Exposure Position	Wireless Interface	5.2G WIFI		5.3G WIFI	
	Antenna	A	B	A	B
	Calculated Frequency	5240	5180	5260	5320
	Maximum power (dBm)	12.84	-2.13	12.98	-1.92
	Maximum rated power(mW)	19.231	0.612	19.861	0.643
Top of the display	Separation distance (mm)	0	0	0	0
	Exclusion threshold(mW)	10	10	10	10
	Testing required?	YES	NO	YES	NO
Bottom of the display	Separation distance (mm)	112	31	112	31
	Exclusion threshold(mW)	716	57	716	57
	Testing required?	NO	NO	NO	NO
Right of the display	Separation distance (mm)	99	177	99	177
	Exclusion threshold(mW)	586	1366	586	1366
	Testing required?	NO	NO	NO	NO
Left of the display	Separation distance (mm)	50	0	50	0
	Exclusion threshold(mW)	96	10	96	10
	Testing required?	NO	NO	NO	NO
Top of neck	Separation distance (mm)	0	85	0	85
	Exclusion threshold(mW)	10	446	10	446
	Testing required?	YES	NO	YES	NO
Back of the base	Separation distance (mm)	112	94	112	94
	Exclusion threshold(mW)	716	536	716	536
	Testing required?	NO	NO	NO	NO
Right of the base	Separation distance (mm)	120	142	120	142
	Exclusion threshold(mW)	796	1016	796	1016
	Testing required?	NO	NO	NO	NO
Left of the base	Separation distance (mm)	110	78	110	78
	Exclusion threshold(mW)	896	376	896	376
	Testing required?	NO	NO	NO	NO
Base bottom	Separation distance (mm)	146	115	146	115
	Exclusion threshold(mW)	1056	746	1056	746
	Testing required?	NO	NO	NO	NO

Exposure Position	Wireless Interface	5.8G WIFI	
	Antenna	A	B
	Calculated Frequency	5745	5745
	Maximum power (dBm)	10.19	-2.06
	Maximum rated power(mW)	10.449	0.622
Top of the display	Separation distance (mm)	0	0
	Exclusion threshold(mW)	10	10
	Testing required?	YES	NO
Bottom of the display	Separation distance (mm)	112	31
	Exclusion threshold(mW)	716	57
	Testing required?	NO	NO
Right of the display	Separation distance (mm)	99	177
	Exclusion threshold(mW)	586	1366
	Testing required?	NO	NO
Left of the display	Separation distance (mm)	50	0
	Exclusion threshold(mW)	96	10
	Testing required?	NO	NO
Top of neck	Separation distance (mm)	0	85
	Exclusion threshold(mW)	10	446
	Testing required?	YES	NO
Back of the base	Separation distance (mm)	112	94
	Exclusion threshold(mW)	716	536
	Testing required?	NO	NO
Right of the base	Separation distance (mm)	120	142
	Exclusion threshold(mW)	796	1016
	Testing required?	NO	NO
Left of the base	Separation distance (mm)	110	78
	Exclusion threshold(mW)	896	376
	Testing required?	NO	NO
Base bottom	Separation distance (mm)	146	115
	Exclusion threshold(mW)	1056	746
	Testing required?	NO	NO

Note：

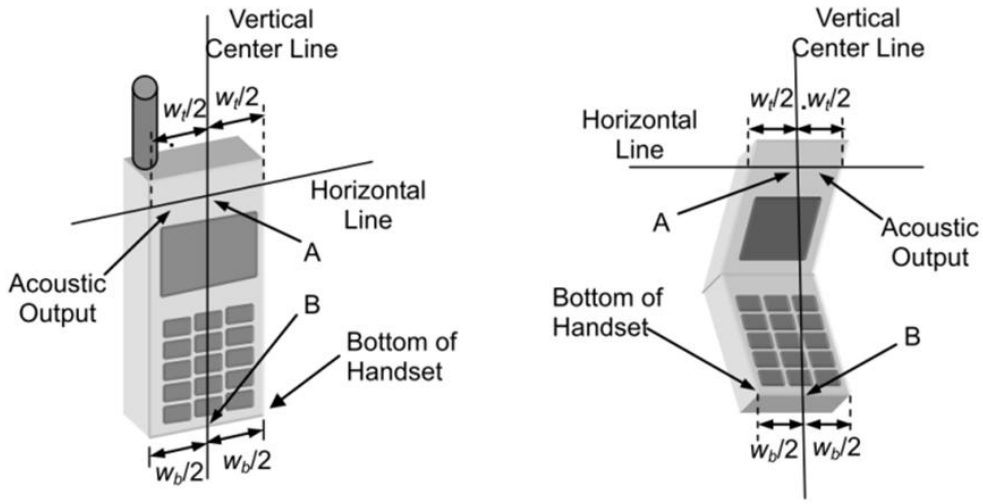
1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. per KDB 447498 D01, standalone SAR test exclusion threshold is applied; if the distance of the antenna to the user is <25mm,25mm is user to determine SAR exclusion threshold
4. per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distance ≤50mm are determined by:
   [(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 for10-g extremity SAR ,f(GHz) is the RF channel transmit frequency in GHz. Power and distance are rounded to the nearest mW and mm before calculation. The result is rounded to one decimal place for comparison
   For <50mm distance, we just calculate mW of the exclusion threshold value(3.0)to do compare
5. per KDB 447498 D01, at 100 MHz to 6GHz and for test separation distances >50mm, the SAR test exclusion threshold is determined according to the following
   a)[threshold at 50mm in step 1]+(test separation distance -50mm)*(f (MHz)/150)]Mw, at 100 MHz to 1500 MHz
   b) [threshold at 50mm in step1]+(test separation distance -50mm) *10]mW at＞1500MHz and≤6GHz
6. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion 8.for each frequency band ,testing at higher data rates and higher order modulations is not required when the maximum average output power for each of each of these configurations is less than 1/4db higher than those measured at the lower data rate than 11b mode ,thus the SAR can be excluded.
7. Per KDB 616217 D04, SAR evaluation for the front surface of tablet display screens are generally not necessary.

8. EUT Test Position

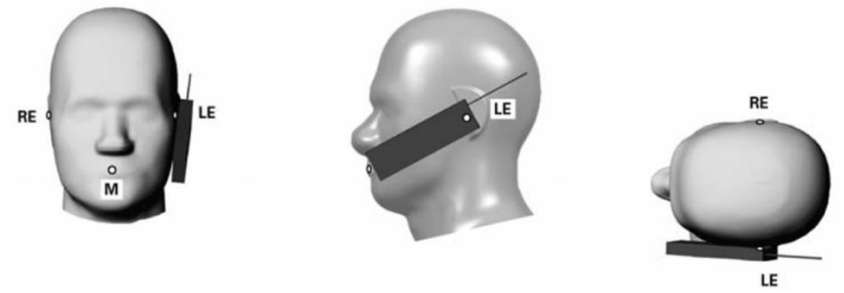
This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

8.1 Define Two Imaginary Lines on the Handset

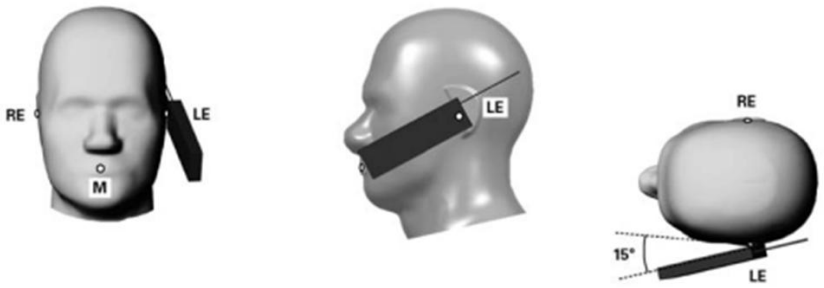
(1)The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.
(2)The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
(3)The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



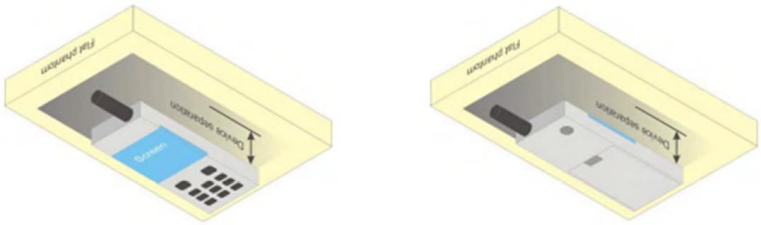
Cheek Position
1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
2) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost



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

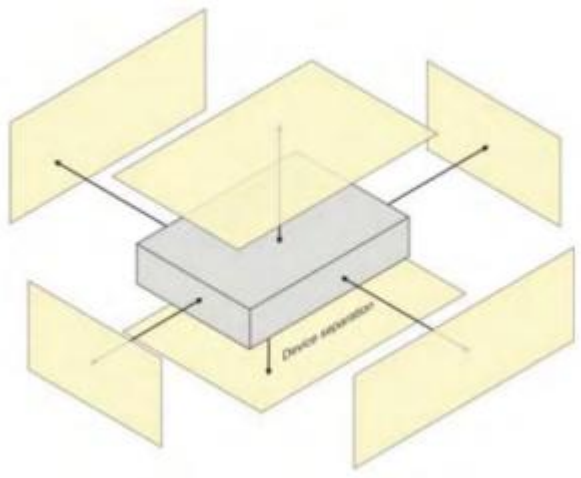


Body-worn Position Conditions:
Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative *test separation distance* configuration may be used to support both SAR conditions. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.



8.2 Hotspot mode exposure position condition

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing function, the relevant hand and body exposure condition are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surface and edges with a transmitting antenna located within 25 mm form that surface or edge. When form factor of a handset is smaller than 9cm x 5cm, a test separation distance of 5mm (instead of 10mm) is required for testing hotspot mode. When the separate distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



9. Uncertainty

9.1 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	0.695	R	$\sqrt{3}$	√0.5	√0.5	0.28	0.28	∞
Hemispherical Isotropy	1.045	R	$\sqrt{3}$	√0.5	√0.5	0.43	0.43	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	0.685	R	$\sqrt{3}$	1	1	0.40	0.40	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Readout Electronics	0.021	N	1	1	1	0.021	0.021	∞
Response Time	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient conditions-Noise	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Post-processing	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related								
Test sample positioning	2.6	N	1	1	1	2.6	2.6	∞
Device holder uncertainty	3	N	1	1	1	3	3	∞
SAR drift measurement	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Phantom and tissue parameters								
Phantom uncertainty（shape and thickness uncertainty）	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity （temperature uncertainty）	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity （measured）	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity （temperature uncertainty）	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity （measured）	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				9.79	9.59	
Expanded Uncertainty (95% Confidence interval)		K=2				19.58	19.18	

9.2 System validation Uncertainty

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System								
Probe calibration	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	0.695	R	$\sqrt{3}$	1	1	0.40	0.40	∞
Hemispherical Isotropy	1.045	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	0.685	R	$\sqrt{3}$	1	1	0.40	0.40	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	0.021	N	1	1	1	0.021	0.021	∞
Response Time	0.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Post-Processing	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
System validation source								
Deviation of experimental dipole from numerical dipole	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Other source contribution Uncertainty	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and set-up								
Phantom uncertainty（shape and thickness uncertainty）	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity （temperature uncertainty）	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity （measured）	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity （temperature uncertainty）	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity （measured）	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty		RSS				9.718	9.517	
Expanded Uncertainty (95% Confidence interval)		K=2				19.44	19.04	

10. Conducted Power Measurement

10.1 Test Result

WLAN (2.4Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			Antenna A	Antenna B	Antenna A+B
802.11b	1	2412	9.84	-5.45	--
	6	2437	9.72	-6.00	--
	11	2462	9.35	-6.23	--
802.11g	1	2412	11.88	-2.69	--
	6	2437	11.42	-3.42	--
	11	2462	11.02	-3.99	--
802.11n(HT 20)	1	2412	11.72	-2.73	11.87
	6	2437	11.15	-3.04	11.31
	11	2462	10.79	-4.06	10.93
802.11n(HT 10)	3	2422	11.19	-2.99	11.35
	6	2437	10.72	-3.43	10.88
	9	2452	10.58	-3.98	10.73

WLAN (5.2Gband)

Mode	Channel Number	Frequency (MHz)	Output Power (dBm)		
			Antenna A	Antenna B	Antenna A+B
802.11a	36	5180	12.71	-2.56	--
	40	5200	12.81	-2.79	--
	48	5240	12.80	-3.23	--
802.11 n-HT20	36	5180	12.76	-2.13	13.13
	40	5200	12.83	-2.59	13.19
	48	5240	12.84	-3.01	13.19
802.11 n-HT40	38	5190	8.26	-2.84	9.06
	46	5230	8.39	-3.23	9.16
802.11 ac-VHT20	36	5180	12.74	-2.41	13.16
	40	5200	12.82	-2.68	13.23
	48	5240	12.83	-3.12	13.23
802.11 ac-VHT40	38	5190	8.15	-2.96	9.25
	46	5230	8.27	-3.47	9.33
802.11 ac-VHT80	42	5210	7.42	-2.98	8.03

WLAN (5.3Gband)

Mode	Channel Number	Frequency (MHz)	Output Power (dBm)		
			Antenna A	Antenna B	Antenna A+B
802.11a	52	5260	12.71	-1.96	--
	60	5300	12.91	-2.32	--
	64	5320	12.92	-2.49	--
802.11 n-HT20	52	5260	12.77	-1.92	13.22
	60	5300	12.93	-2.27	13.37
	64	5320	12.98	-2.31	13.42
802.11 n-HT40	54	5270	8.43	-2.97	9.58
	62	5310	8.48	-3.46	9.59
802.11 ac-VHT20	52	5260	12.73	-2.06	13.17
	60	5300	12.90	-2.41	13.32
	64	5320	12.96	-2.59	13.38
802.11 ac-VHT40	54	5270	8.39	-3.02	9.24
	62	5310	8.41	-3.72	9.21
802.11 ac-VHT80	58	5290	6.87	-2.43	7.60

WLAN (5.8Gband)

Mode	Channel Number	Frequency (MHz)	Output Power (dBm)		
			Antenna A	Antenna B	Antenna A+B
802.11a	149	5745	10.09	-2.78	--
	157	5785	9.38	-3.23	--
	165	5825	9.12	-3.67	--
802.11 n-HT20	149	5745	10.19	-2.06	10.68
	157	5785	9.42	-3.09	9.90
	165	5825	9.33	-3.43	9.80
802.11 n-HT40	151	5755	8.74	-2.89	9.90
	159	5795	8.76	-3.32	9.89
802.11 ac-VHT20	149	5745	9.39	-2.59	9.95
	157	5785	8.98	-3.29	9.52
	165	5825	9.01	-3.58	9.54
802.11 ac-VHT40	151	5755	8.71	-3.29	9.55
	159	5795	8.72	-3.88	9.53
802.11 ac-VHT80	155	5775	6.87	-3.15	7.59

Bluetooth

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	-2.32
	39	2441	-2.04
	78	2480	-1.86
π/4-DQPSK(2Mbps)	0	2402	-6.32
	39	2441	-5.45
	78	2480	-4.92
8DPSK(3Mbps)	0	2402	-5.71
	39	2441	-5.21
	78	2480	1.62

BLE

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	0.99
	19	2440	1.25
	39	2480	1.99

11. EUT and Test Setup Photo

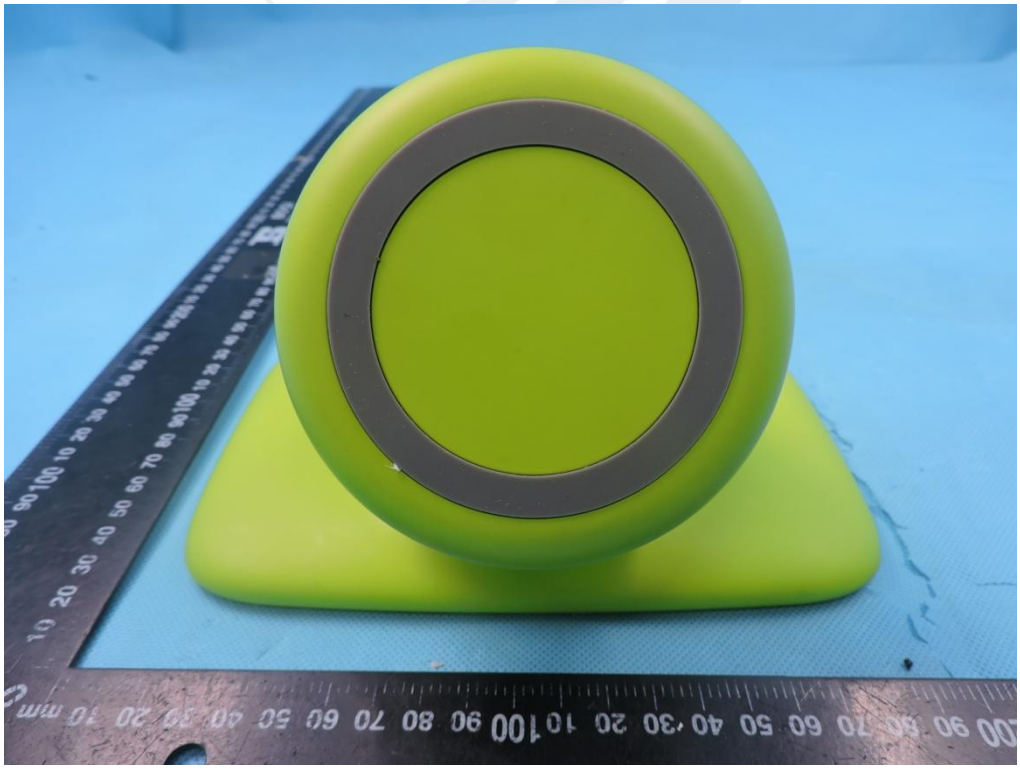
11.1 EUT Photo

Front side

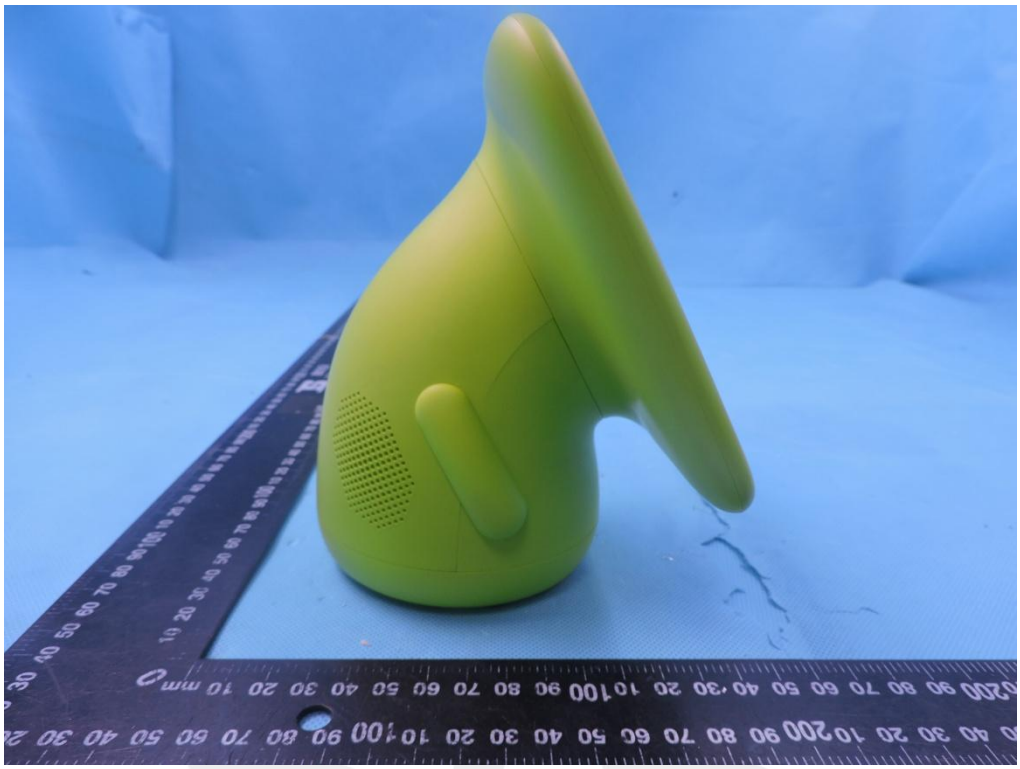
Back side

Top side

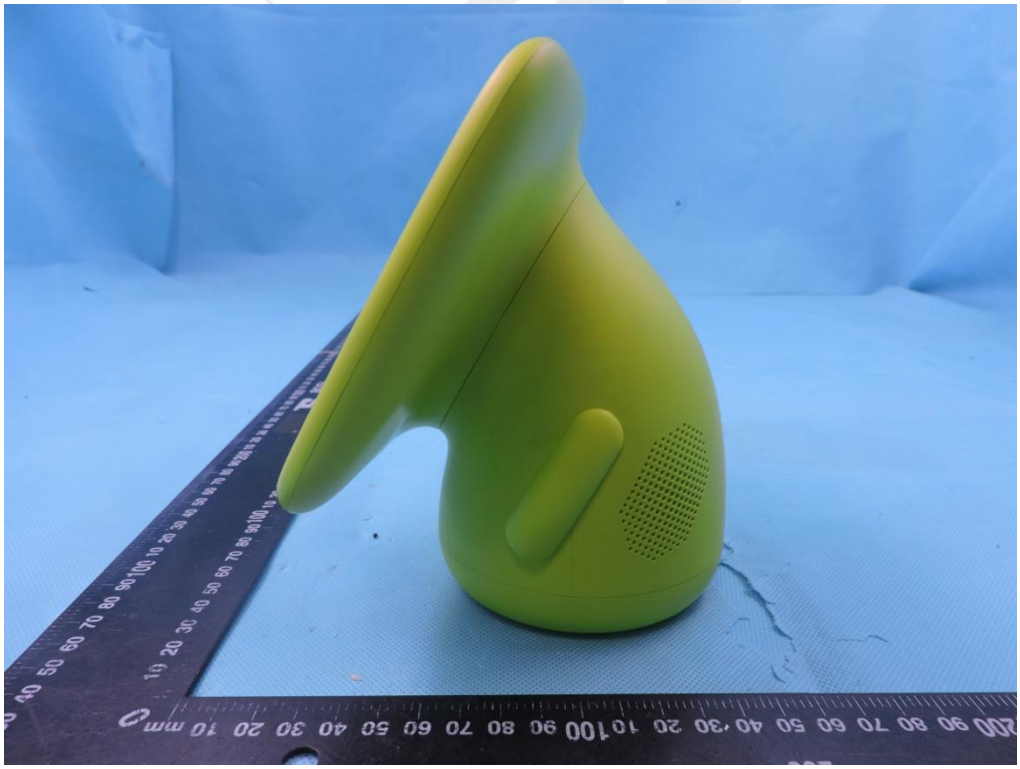
Bottom side



Left side



Right side

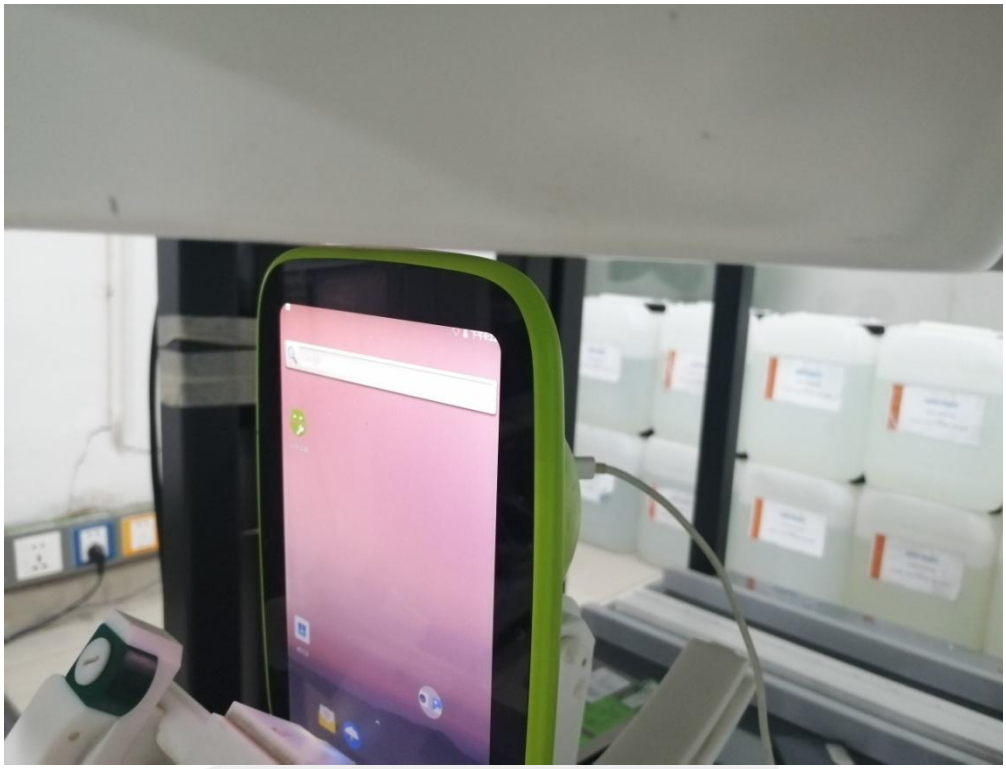


11.2 Setup Photo

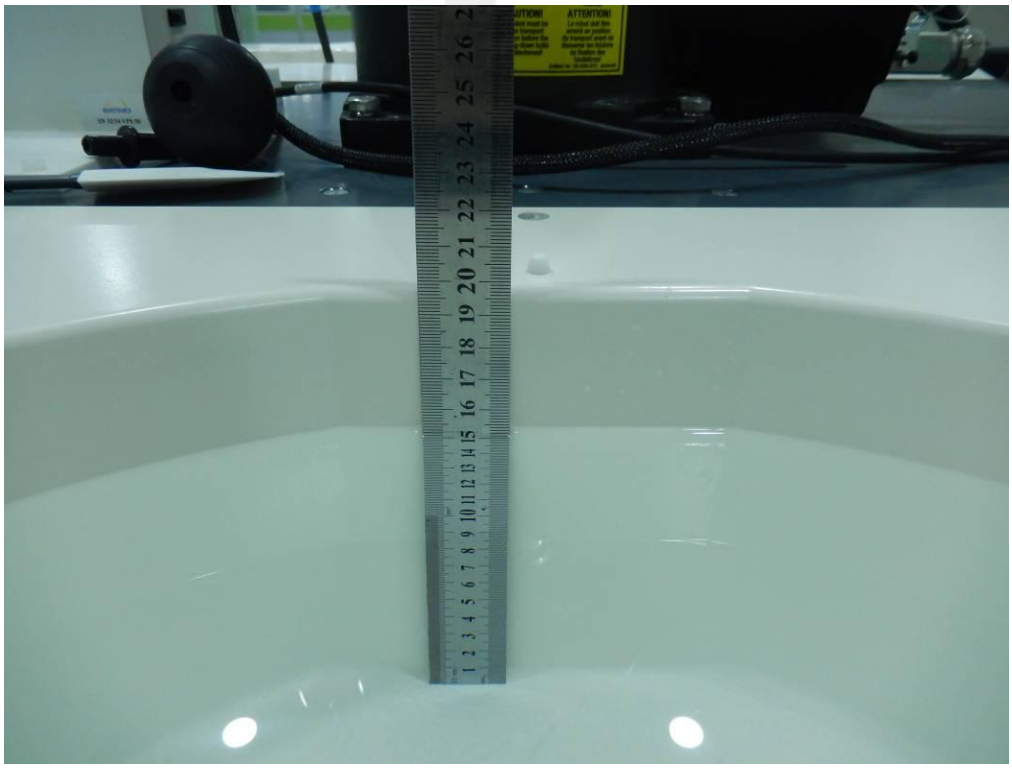
Top of display(separation distance is 0mm)

Top of base (separation distance is 0mm)

Right of display(separation distance is 0mm)



Liquid depth (15 cm)



12. SAR Result Summary

12.1 Body SAR

ANT A:

Band	Mode	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Duty cycle(%)	Scaled SAR (W/Kg)	Meas. No.
2.4G WLAN	802.11b	Top of the display	1	0.353	0.72	10	9.84	100	**0.366**	1
		Top of the neck	1	0.141	0.29	10	9.84	100	0.146	-
	802.11g	Top of the display	1	0.510	0.56	12	11.88	100	**0.524**	2
		Top of the neck	1	0.215	-3.76	12	11.88	100	0.221	-
	802.11n20	Top of the display	1	0.357	0.35	12	11.87	100	**0.368**	3
		Top of the neck	1	0.167	1.97	12	11.87	100	0.172	-
5.2G WLAN	802.11a20	Top of the display	40	0.373	-1.31	13	12.81	100	**0.390**	4
		Top of the neck	40	0.224	-1.10	13	12.81	100	0.234	-
	802.11n20	Top of the display	48	0.595	-0.94	13	12.84	100	**0.617**	5
		Top of the neck	48	0.236	3.92	13	12.84	100	0.245	-
5.3G WLAN	802.11a20	Top of the display	64	0.345	2.87	13	12.92	100	**0.351**	6
		Top of the neck	64	0.157	1.78	13	12.92	100	0.160	-
	802.11n20	Top of the display	64	0.421	-1.22	13	12.98	100	**0.423**	7
		Top of the neck	64	0.176	1.35	13	12.98	100	0.177	-
5.8G WLAN	802.11a20	Top of the display	149	0.394	-0.91	10.5	10.09	100	**0.433**	8
		Top of the neck	149	0.166	3.30	10.5	10.09	100	0.182	-
	802.11n20	Top of the display	149	0.443	1.92	10.5	10.19	100	**0.476**	9
		Top of the neck	149	0.192	-1.01	10.5	10.19	100	0.206	-

Note:

1. The test separation of all above table is 0mm.
2. Bluetooth, 2.4G WLAN and 5G WLAN can't simultaneous transmission at the same time.
3. Per KDB 447498 D01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For WWAN: Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor

Simultaneous Multi-Antenna Transmission Evaluation:

NOTE:

1. Bluetooth, 2.4G WLAN and 5G WLAN can't simultaneous transmission at the same time.
2. Based upon KDB 447498 D01, BT SAR is excluded as below table.
3. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
4. For minimum test separation distance≦50mm,Bluetooth standalone SAR is excluded according to [(max. power of channel, including tune-up tolerance, mW)/ (min. test separation distance, mm)·[√f (GHz) /x] ≦3.0 for 1-g SAR and ≦7.5 for 10-g extremity SAR
5. The reported SAR summation is calculated based on the same configuration and test position.
6. KDB 447498 / 4.3.2 (2) when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
   a) (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.
   b) 0.4W/Kg for 1-g SAR and 1.0W/Kg for 10-g SAR, when the separation distance is >50mm.

Estimated SAR		Maximum Power		Antenna to user(mm)	Frequency(GHz)	Stand alone SAR(1g) [W/kg]
		dBm	mW			
BT	Body	2.5	1.581	5	2.402	0.073
2.4GWLAN ANT B	Body	-2	0.631	5	2.412	0.026
5.2GWLAN ANT B	Body	-2	0.631	5	5.180	0.038
5.3GWLAN ANT B	Body	-1	0.794	5	5.260	0.049
5.8GWLAN ANT B	Body	-2	0.631	5	5.745	0.040

Band	Mode	Scaled SAR(1g) (W/Kg)		A+B
WLAN 2.4G	802.11n20	Antenna A	0.368	0.394
	802.11n20	Antenna B	0.026	
WLAN 5.2G	802.11n20	Antenna A	0.617	0.655
	802.11n20	Antenna B	0.038	
WLAN 5.3G	802.11n20	Antenna A	0.423	0.472
	802.11n20	Antenna B	0.049	
WLAN 5.8G	802.11n20	Antenna A	0.476	0.516
	802.11n20	Antenna B	0.040	

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

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

13. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
2450MHzDipole	MVG	SID2450	SN 30/14 DIP2G450-335	2020.07.14	2023.07.13
Waveguide	SATIMO	SWG5500	SN 13/14 WGA32	2020.07.14	2023.07.13
E-Field Probe	MVG	SSE2	SN 41/18 EPGO334	2020.07.14	2021.07.13
Dielectric Probe Kit	MVG	SCLMP	SN 32/14 OCPG67	2019.11.25	2020.11.24
Antenna	MVG	ANTA3	SN 07/13 ZNTA52	N/A	N/A
Phantom1	MVG	SAM	SN 32/14 SAM115	N/A	N/A
Phantom2	MVG	SAM	SN 32/14 SAM116	N/A	N/A
Phone holder	MVG	N/A	SN 32/14 MSH97	N/A	N/A
Laptop holder	MVG	N/A	SN 32/14 LSH29	N/A	N/A
Attenuator	Agilent	99899	DC-18GHz	N/A	N/A
Directional coupler	Narda	4226-20	3305	N/A	N/A
Network Analyzer	Agilent	8753ES	US38432810	2019.10.11	2020.10.10
Multi Meter	Keithley	Multi Meter 2000	4050073	2019.10.11	2020.10.10
Signal Generator	Agilent	N5182A	MY50140530	2019.10.09	2020.10.08
Wireless Communication Test Set	Agilent	8960-E5515C	MY48360751	2019.10.09	2020.10.08
Wireless Communication Test Set	R&S	CMW500	117239	2019.10.09	2020.10.08
Power Amplifier	DESAY	ZHL-42W	9638	2019.10.09	2020.10.08
Power Meter	R&S	NRP	100510	2019.10.16	2020.10.15
Power Meter	Agilent	E4419B	QB43312265	2019.10.12	2020.10.11
Power Sensor	R&S	NRP-Z11	101919	2019.10.12	2020.10.11
Power Sensor	HP	E9300A	US39210170	2019.10.09	2020.10.08
Temperature hygrometer	SuWei	SW-108	N/A	2019.10.13	2020.10.12
Thermograph	Elitech	RC-4	S/N EF7176501537	2019.10.11	2020.10.10

Note:
Per KDB 865664 D01, Dipole SAR Validation Verification, STS 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
Return-loss in within 20% of calibrated measurement

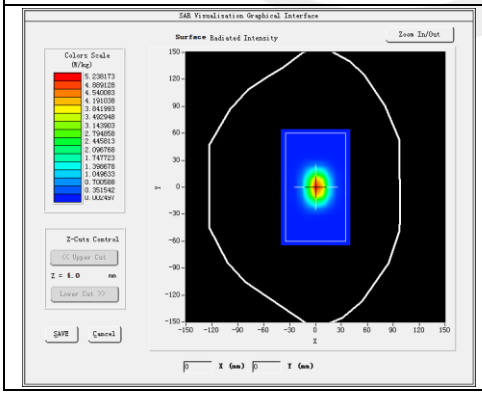
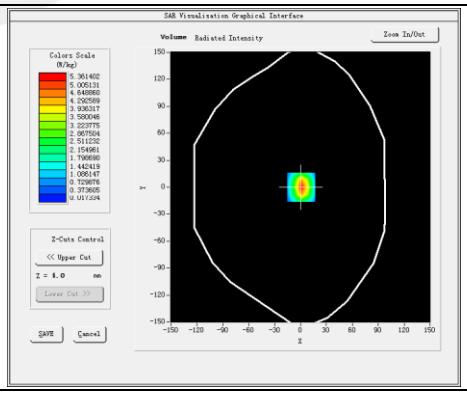
Appendix A. System Validation Plots

System Performance Check Data (2450MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-08-31

Experimental conditions.

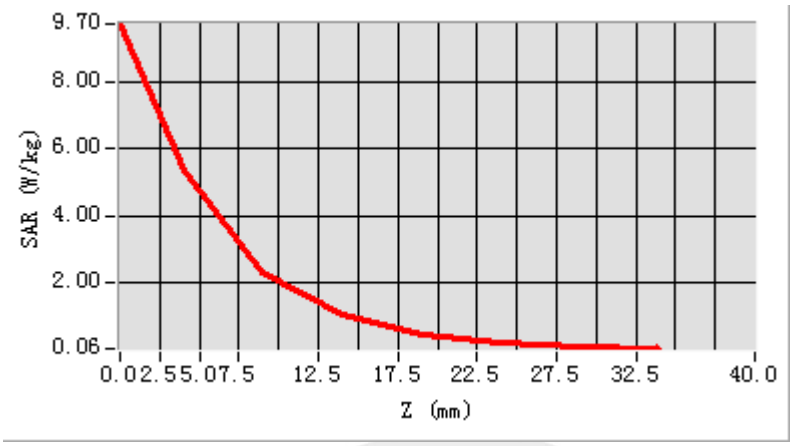
Device Position	Validation plane
Band	2450 MHz
Channels	-
Signal	CW
Frequency (MHz)	2450
Relative permittivity	52.48
Conductivity (S/m)	1.92
Power drift (%)	-3.53
Probe	SN 41/18 EPGO334
ConvF	2.02
Crest factor:	1:1

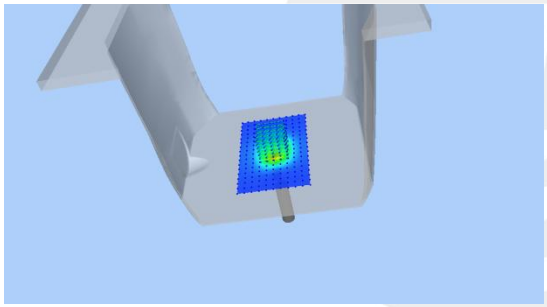
SURFACE SAR	VOLUME SAR
	

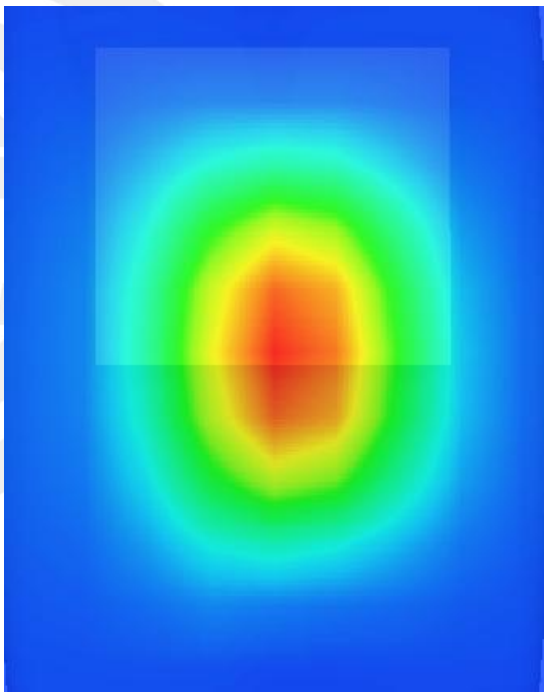
Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	2.315182
SAR 1g (W/Kg)	5.055267

Z Axis Scan


9.70
8.00
6.00
4.00
2.00
0.06
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)



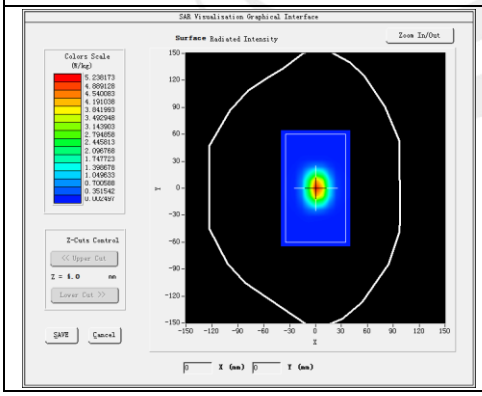
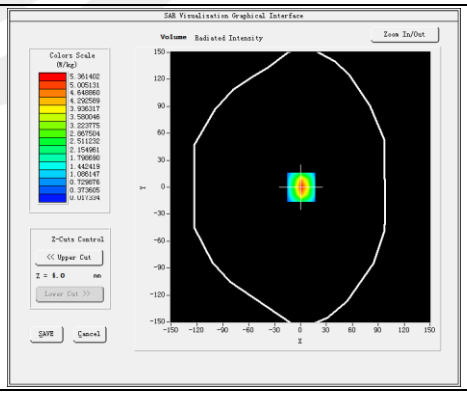


System Performance Check Data (5200MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-09-01

Experimental conditions.

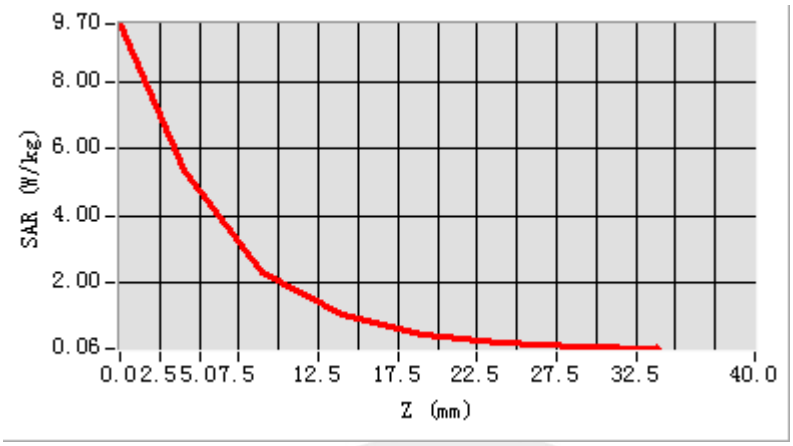
Device Position	Validation plane
Band	5200 MHz
Channels	-
Signal	CW
Frequency (MHz)	5200
Relative permittivity	49.35
Conductivity (S/m)	5.25
Power drift (%)	-1.48
Probe	SN 41/18 EPGO334
ConvF	1.92
Crest factor:	1:1

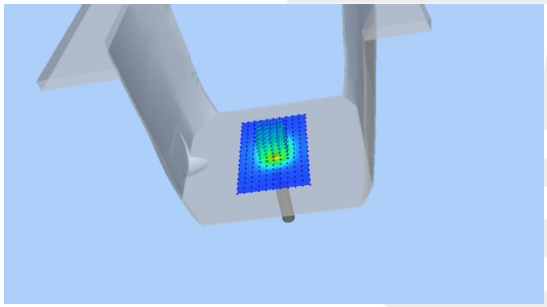
SURFACE SAR	VOLUME SAR
	

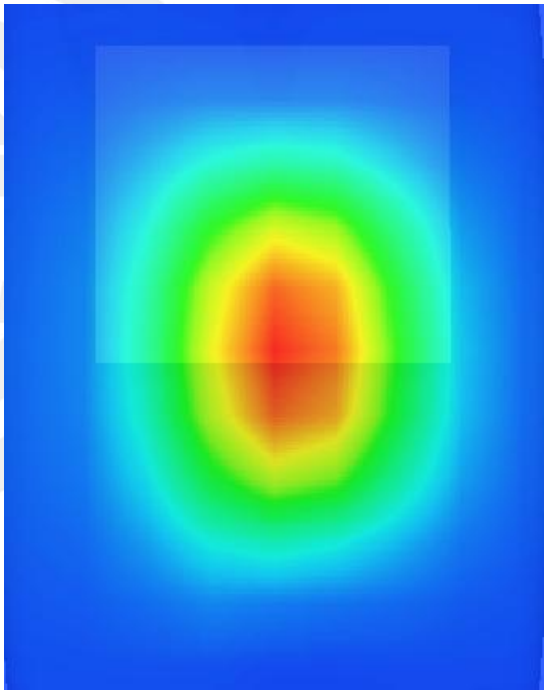
Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	5.478458
SAR 1g (W/Kg)	15.664284

Z Axis Scan


9.70
8.00
6.00
4.00
2.00
0.06
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)



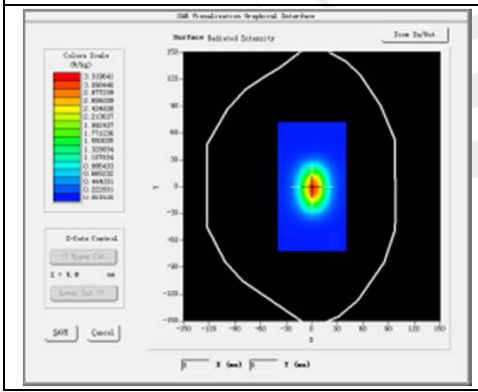
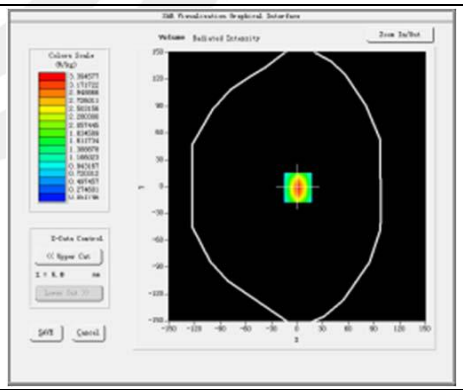


System Performance Check Data(5400MHz Body)

Type: Dipole measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2020-09-02

Experimental conditions.

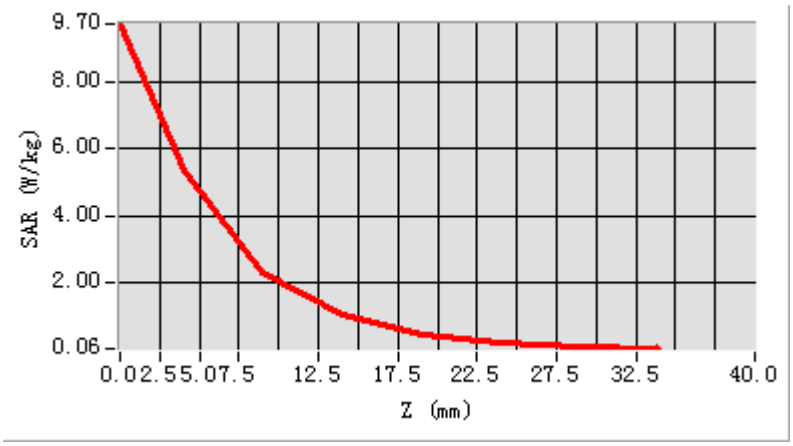
Device Position	Validation plane
Band	5400 MHz
Channels	-
Signal	CW
Frequency (MHz)	5400
Relative permittivity	48.61
Conductivity (S/m)	5.42
Power drift (%)	-0.41
Probe	SN 41/18 EPGO334
ConvF	2.12
Crest factor:	1:1

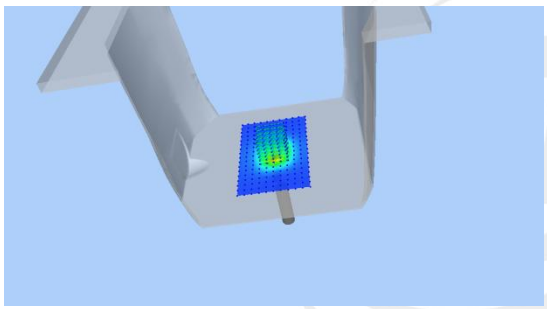
SURFACE SAR	VOLUME SAR
	

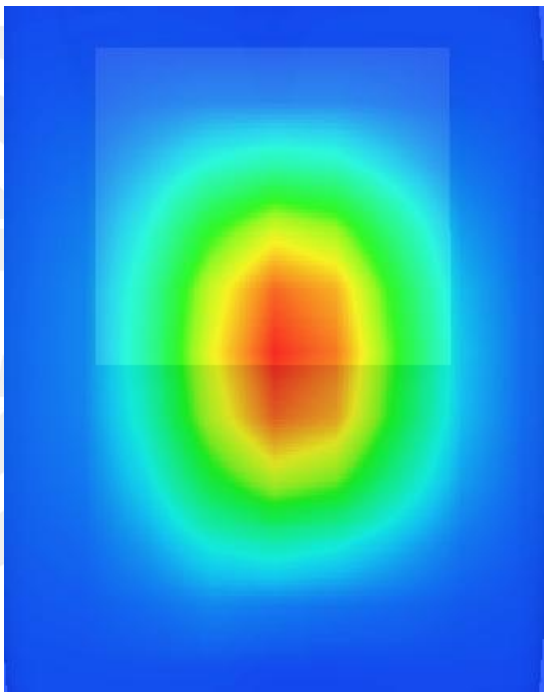
Maximum location: X=7.00, Y=2.00

SAR 10g (W/Kg)	5.940854
SAR 1g (W/Kg)	16.570975

Z Axis Scan


9.70
8.00
6.00
4.00
2.00
0.06
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)



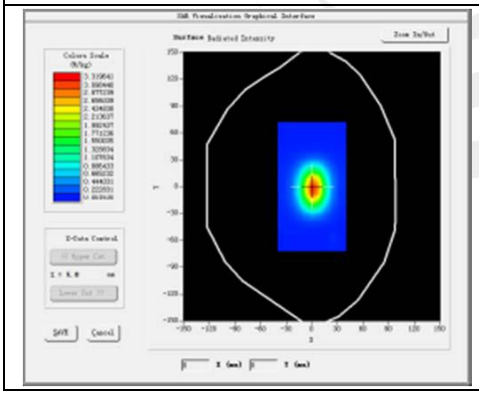
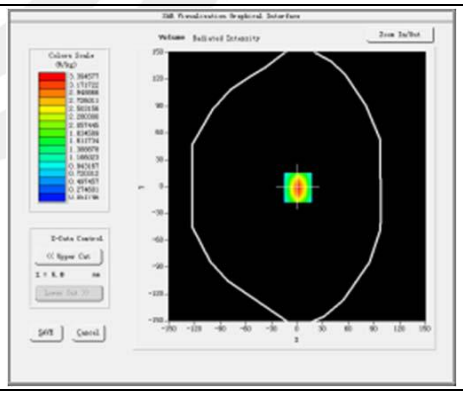


System Performance Check Data(5800MHz Body)

Type: Dipole measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2020-09-03

Experimental conditions.

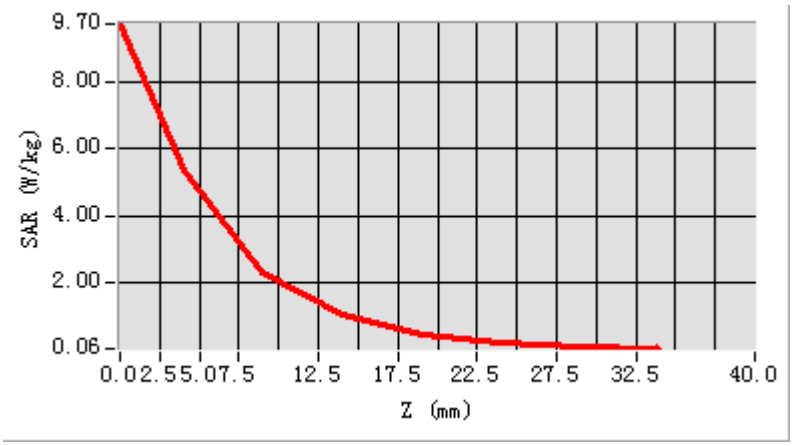
Device Position	Validation plane
Band	5800 MHz
Channels	-
Signal	CW
Frequency (MHz)	5800
Relative permittivity	48.49
Conductivity (S/m)	6.18
Power drift (%)	3.05
Probe	SN 41/18 EPGO334
ConvF	2.16
Crest factor:	1:1

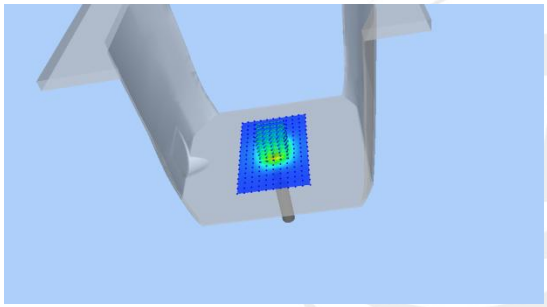
SURFACE SAR	VOLUME SAR
	

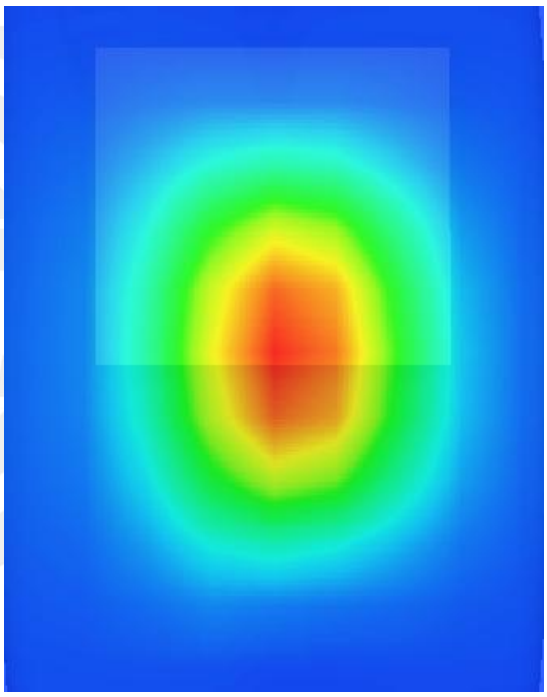
Maximum location: X=7.00, Y=2.00

SAR 10g (W/Kg)	6.240852
SAR 1g (W/Kg)	18.673146

Z Axis Scan


9.70
8.00
6.00
4.00
2.00
0.06
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)





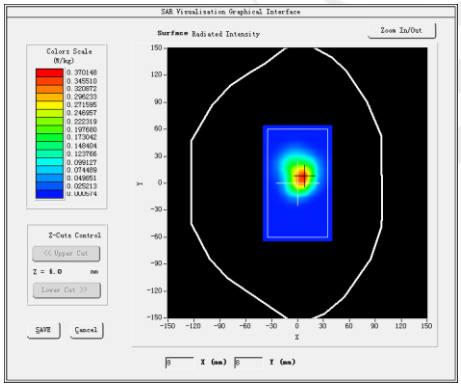
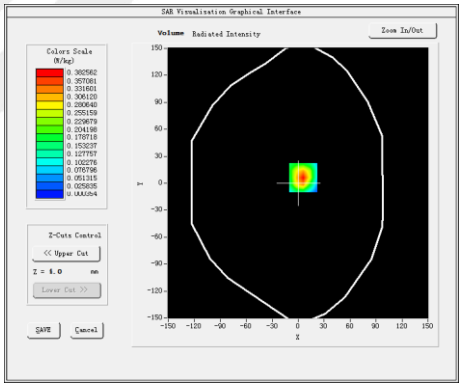
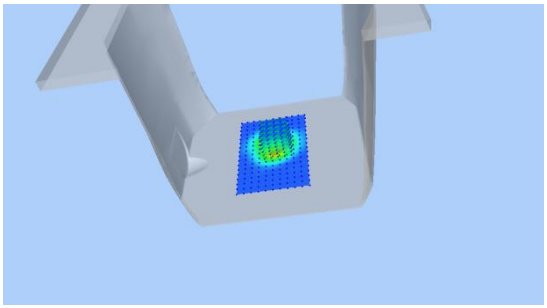
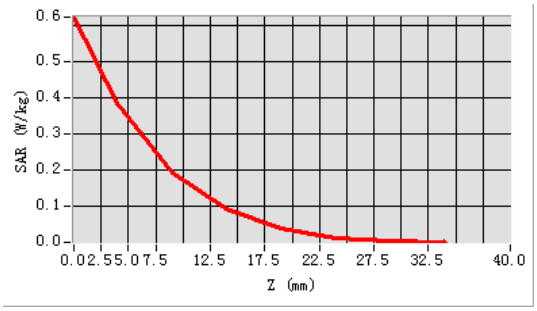
Appendix B. SAR Test Plots

Plot 1: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-08-31
Probe	SN 41/18 EPGO334
ConvF	2.02
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11b ISM
Channels	Low
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2412
Relative permittivity (real part)	52.48
Conductivity (S/m)	1.92

Maximum location: X=6.00, Y=6.00
SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)	0.160983
SAR 1g (W/Kg)	0.353463

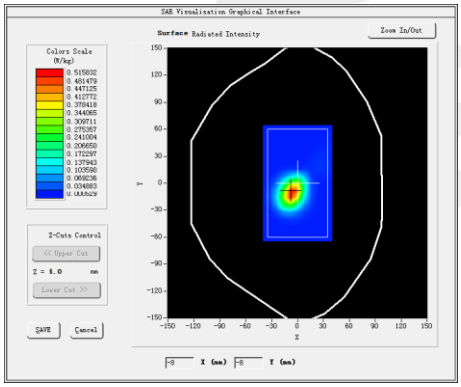
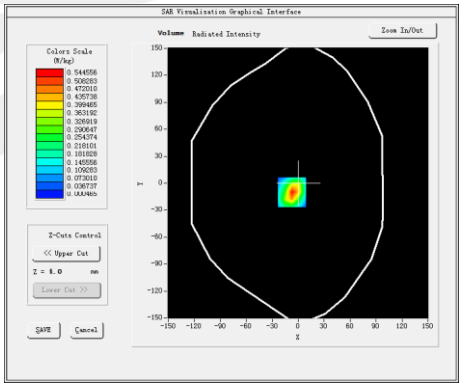
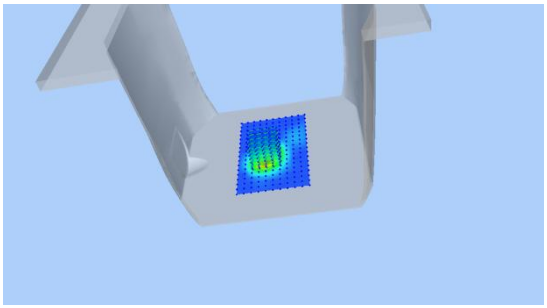
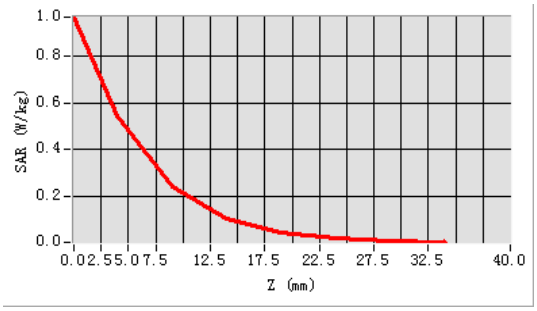
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 2: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-08-31
Probe	SN 41/18 EPGO334
ConvF	2.02
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11g ISM
Channels	Low
Signal	IEEE802.g (Crest factor: 1.0)
Frequency (MHz)	2412
Relative permittivity (real part)	52.48
Conductivity (S/m)	1.92

Maximum location: X=-7.00, Y=-10.00
SAR Peak: 1.00 W/kg

SAR 10g (W/Kg)	0.211420
SAR 1g (W/Kg)	0.509915

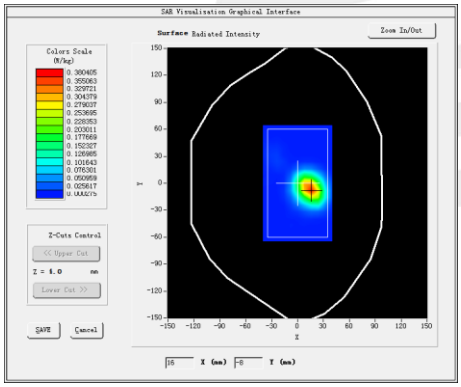
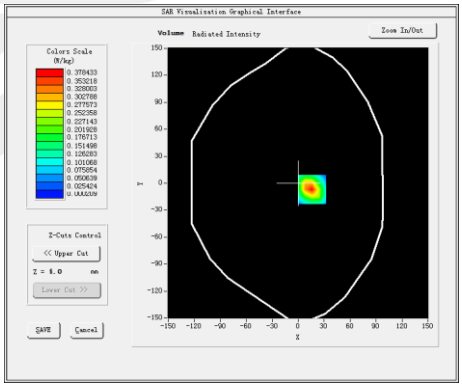
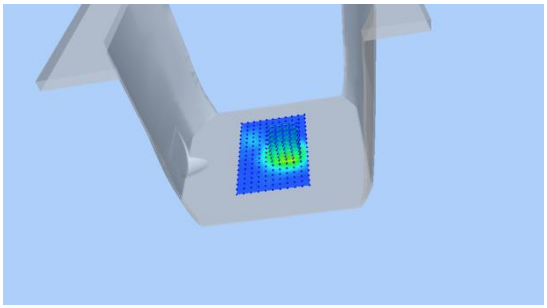
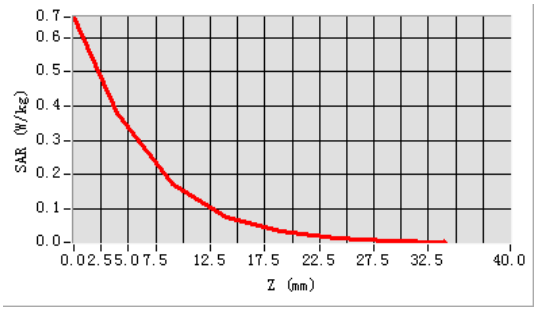
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 3: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-08-31
Probe	SN 41/18 EPGO334
ConvF	2.02
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11n20 ISM
Channels	Low
Signal	IEEE802.n20 (Crest factor: 1.0)
Frequency (MHz)	2412
Relative permittivity (real part)	52.48
Conductivity (S/m)	1.92

Maximum location: X=16.00, Y=-7.00
SAR Peak: 0.68 W/kg

SAR 10g (W/Kg)	0.152411
SAR 1g (W/Kg)	0.357082

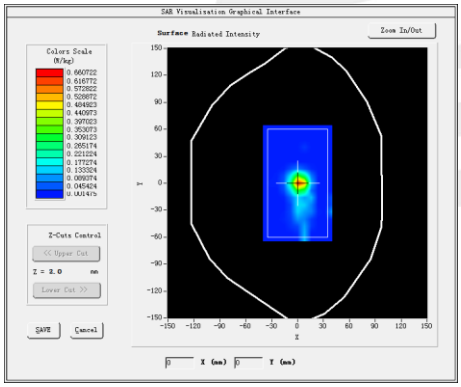
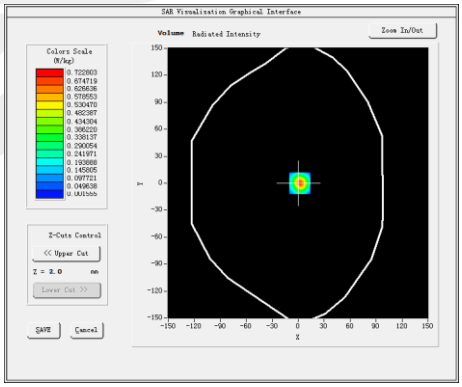
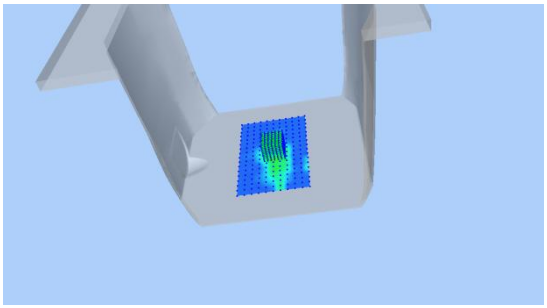
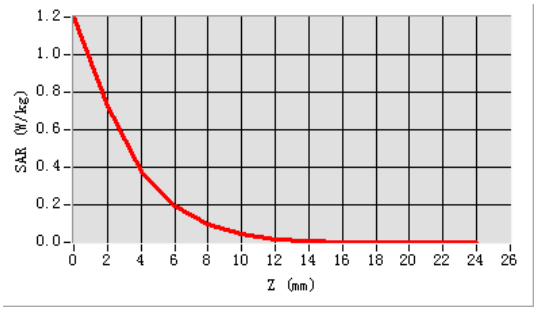
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 4: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-09-01
Probe	SN 41/18 EPGO334
ConvF	1.92
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11a20 ISM
Channels	Middle
Signal	IEEE802.a20 (Crest factor: 1.0)
Frequency (MHz)	5200
Relative permittivity (real part)	49.35
Conductivity (S/m)	5.25

Maximum location: X=2.00, Y=0.00
SAR Peak: 1.24 W/kg

SAR 10g (W/Kg)	0.108209
SAR 1g (W/Kg)	0.372631

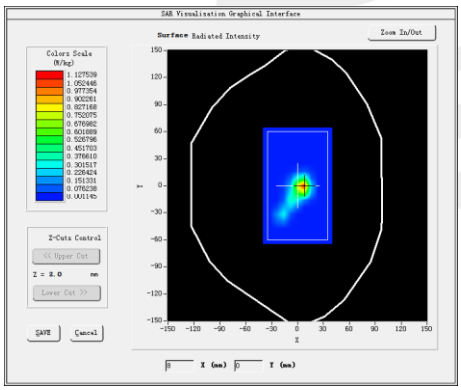
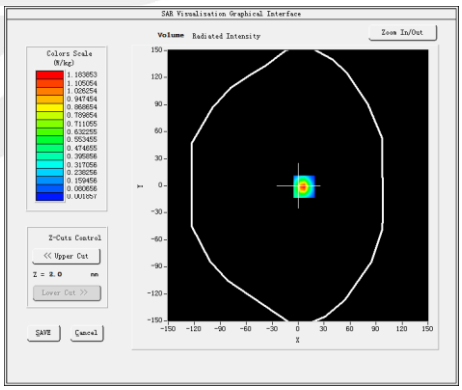
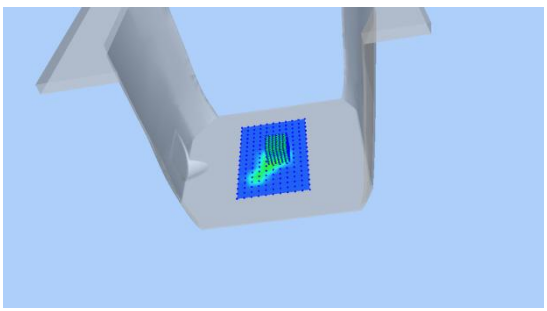
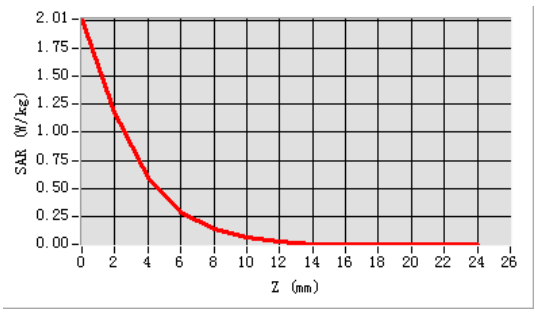
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 5: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-09-01
Probe	SN 41/18 EPGO334
ConvF	1.92
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11n20 ISM
Channels	High
Signal	IEEE802.n20 (Crest factor: 1.0)
Frequency (MHz)	5240
Relative permittivity (real part)	49.35
Conductivity (S/m)	5.25

Maximum location: X=7.00, Y=-1.00
SAR Peak: 2.14 W/kg

SAR 10g (W/Kg)	0.166766
SAR 1g (W/Kg)	0.595340

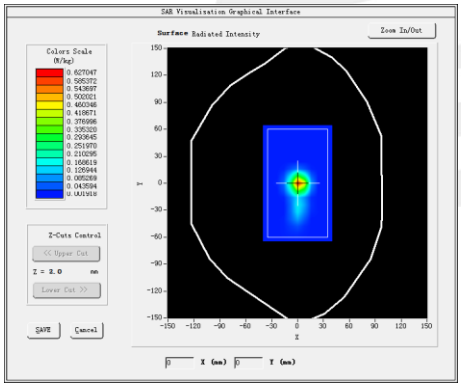
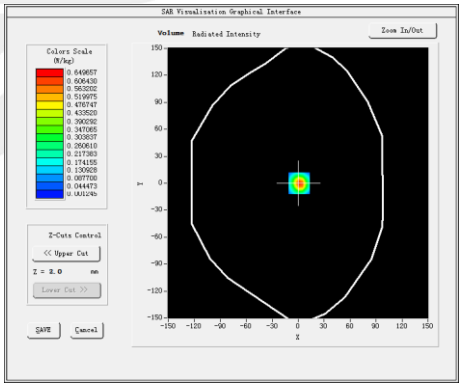
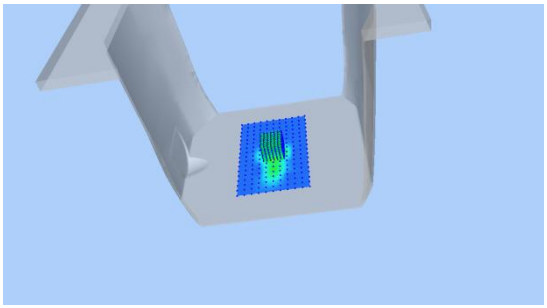
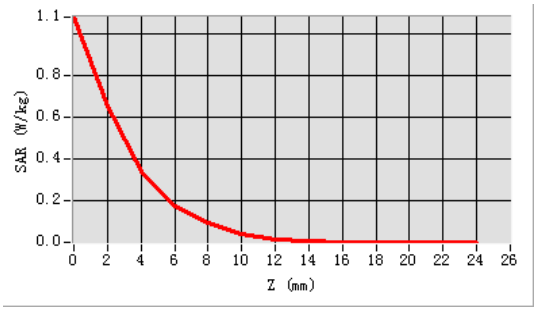
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 6: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-09-02
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11a20 ISM
Channels	High
Signal	IEEE802.a20 (Crest factor: 1.0)
Frequency (MHz)	5320
Relative permittivity (real part)	48.61
Conductivity (S/m)	5.43

Maximum location: X=1.00, Y=0.00
SAR Peak: 1.13 W/kg

SAR 10g (W/Kg)	0.102501
SAR 1g (W/Kg)	0.344902

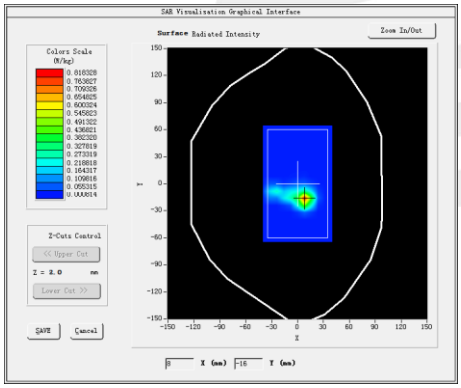
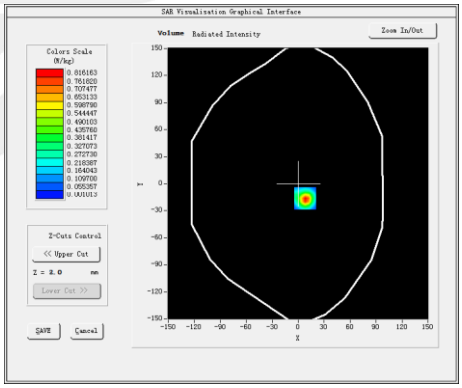
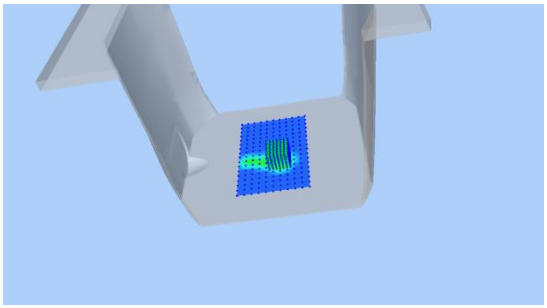
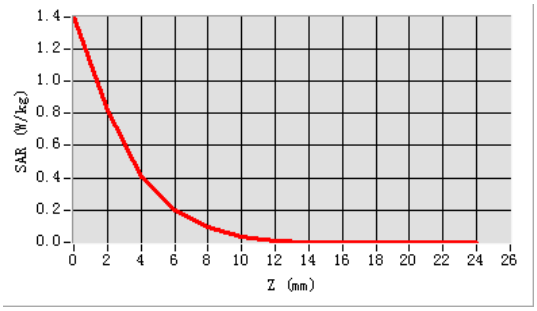
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 7: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-09-02
Probe	SN 41/18 EPGO334
ConvF	2.16
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11n20 ISM
Channels	High
Signal	IEEE802.n20 (Crest factor: 1.0)
Frequency (MHz)	5320
Relative permittivity (real part)	48.61
Conductivity (S/m)	5.43

Maximum location: X=8.00, Y=-16.00
SAR Peak: 1.49 W/kg

SAR 10g (W/Kg)	0.118027
SAR 1g (W/Kg)	0.421222

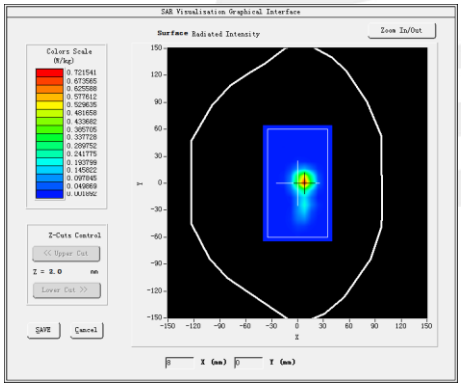
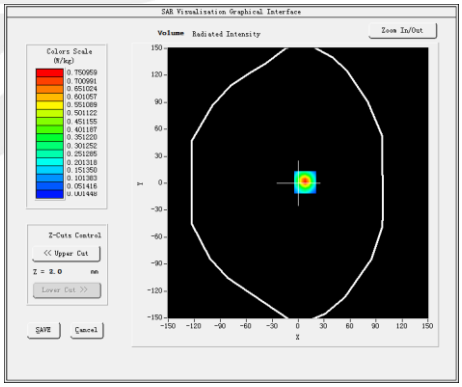
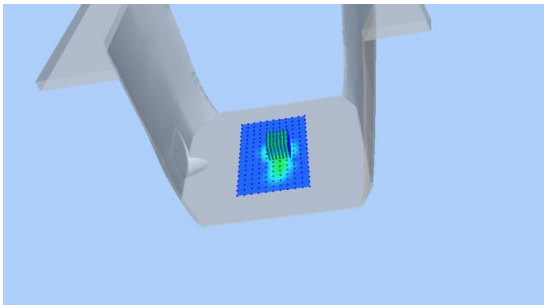
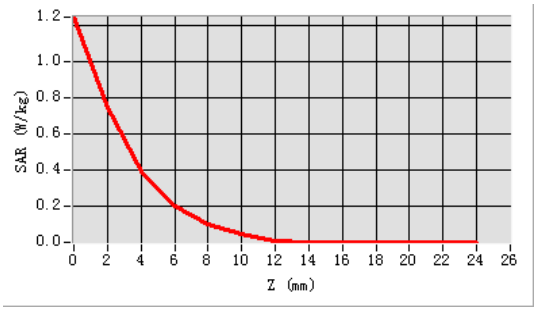
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 8: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-09-03
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11a20 ISM
Channels	Low
Signal	IEEE802.a20 (Crest factor: 1.0)
Frequency (MHz)	5745
Relative permittivity (real part)	48.49
Conductivity (S/m)	6.18

Maximum location: X=8.00, Y=1.00
SAR Peak: 1.31 W/kg

SAR 10g (W/Kg)	0.114598
SAR 1g (W/Kg)	0.393766

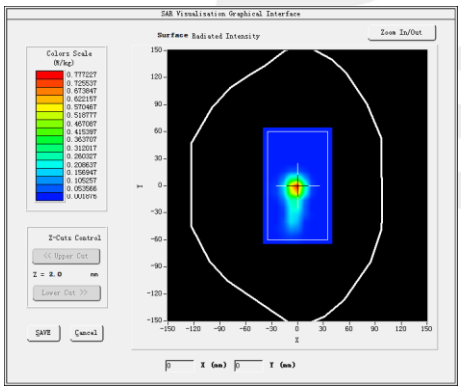
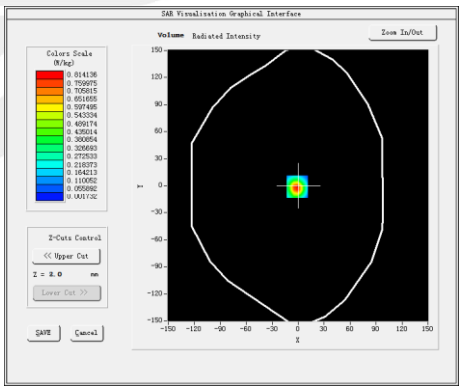
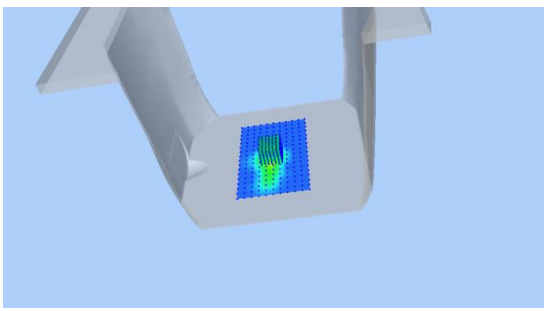
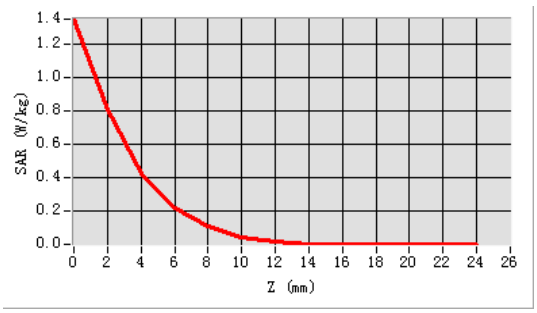
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 9: DUT: AILA Sit & Play™; EUT Model: X4C-US20

Test Date	2020-09-03
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm, dy=8mm, h= 5.00 mm
Zoom Scan	5x5x7, dx=8mm, dy=8mm, dz=5mm, Complete/ndx=8mm, dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Top of the display
Band	IEEE 802.11n20 ISM
Channels	Low
Signal	IEEE802.n20 (Crest factor: 1.0)
Frequency (MHz)	5745
Relative permittivity (real part)	48.49
Conductivity (S/m)	6.18

Maximum location: X=-1.00, Y=-1.00
SAR Peak: 1.45 W/kg

SAR 10g (W/Kg)	0.135780
SAR 1g (W/Kg)	0.442632

SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Appendix C. Probe Calibration and Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※