FCC SAR TEST REPORT

Report No.: STS2001235H02

Issued for

Winmate Inc.

9F, No.111-6, Shing-De Rd., San-Chung Dist., New Taipei City, 24158, Taiwan, R.O.C

Product Name:	Rugged Tablet PC
Brand Name:	Winmate
Model Name:	M101P-BH
Series Model:	RT10W-L00, M101PXXXXXXXXX (Where X can be A-Z,a-z ,0-9, "-", Blank or Slash)
FCC ID:	PX9M101PH001
Test Standard:	ANSI/IEEE Std. C95.1
	FCC 47 CFR Part 2 (2.1093)
	IEEE 1528: 2013
Max. Report SAR (1g):	Body:1.439 W/kg

ShenZhen STS Test Services Co.,Ltd.
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TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

Test Report Certification

Applicant's name ..... :	Winmate Inc.
Address ..... :	9F, No.111-6, Shing-De Rd., San-Chung Dist., New Taipei City, 24158, Taiwan, R.O.C
Manufacture's Name ..... :	Winmate Inc.
Address ..... :	9F, No.111-6, Shing-De Rd., San-Chung Dist., New Taipei City, 24158, Taiwan, R.O.C

Product description

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Brand name ..... :	Winmate
Model name ..... :	M101P-BH
Series Model..... :	RT10W-L00, M101PXXXXXXXXXX (Where X can be A-Z,a-z ,0-9, "-", Blank or Slash)
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..... :	10 Mar. 2020~16 Mar. 2020
Date of Issue..... :	17 Mar. 2020
Test Result..... :	**Pass**

Testing Engineer **:** Aaron Bu

(Aaron Bu)

Technical Manager **:** Jason Lu

(Jason Lu)

Authorized Signatory **:** Vita Li

(Vita Li)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	17 Mar. 2020	STS2001235H02	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	Rugged Tablet PC		
Brand Name	Winmate		
Model Name	M101P-BH		
Series Model	RT10W-L00, M101PXXXXXXXXX (Where X can be A-Z,a-z ,0-9, "-", Blank or Slash)		
Model Difference	Only difference for marketing purpose		
Battery	Battery 1: Model: BM101 Rated Voltage: 7.7V Charge Limit: 8.8V Capacity: 5900mAh Battery 2: Model: BL101 Rated Voltage: 7.4V Charge Limit: 8.4V Capacity: 10280mAh		
Device Category	Portable		
Product stage	Production unit		
RF Exposure Environment	General Population / Uncontrolled		
Hardware Version	M101PH-100		
Software Version	8.8.4773.0004		
Frequency Range	2.4GHz WLAN IEEE 802.11b/g/n(HT20/40): 2412MHz to 2462MHz 5GHz WLAN IEEE 802.11a/n/ac (20MHz): 5180MHz to 5825MHz 5GHz WLAN IEEE 802.11n/ac (40MHz):5190MHz to 5795MHz 5GHz WLAN IEEE 802.11ac (80MHz): 5210MHz, 5290MHz, 5530MHz to 5610MHz, 5775MHz Bluetooth: 2402MHz to 2480MHz		
Max. Reported SAR(1g): (Limit:1.6W/kg)	Band	Mode	Body (W/kg)
	DTS	2.4G WLAN ANT A	0.778
	DTS	2.4G WLAN ANT B	0.727
	DTS	2.4G WLAN ANT A+B	0.188
	NII	5.2G WLAN ANT A	0.958
	NII	5.2G WLAN ANT B	0.995
	NII	5.2G WLAN ANT A+B	0.737
	NII	5.3G WLAN ANT A	0.960
	NII	5.3G WLAN ANT B	0.774
	NII	5.3G WLAN ANT A+B	0.816
	NII	5.6G WLAN ANT A	1.439
	NII	5.6G WLAN ANT B	1.435
	NII	5.6G WLAN ANT A+B	0.738
	NII	5.8G WLAN ANT A	1.162
	NII	5.8G WLAN ANT B	0.936
	NII	5.8G WLAN ANT A+B	0.778
	DTS	Bluetooth Note	0.133
FCC Equipment Class	Digital Transmission System (DTS) Unlicensed National Information Infrastructure TX (NII)		

Operating Mode:	802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM Bluetooth: 5.0+EDR (GFSK +π/4DQPSK+8DPSK) BLE
Antenna Specification:	BT,WLAN: PIFA Antenna
Hotspot Mode:	Not Support
DTM Mode:	Not Support
Note: 1. Bluetooth SAR was estimated 2. After pre-scan two Battery, we found test result of the Battery 1 was the worse, so we chose Battery 1 to perform all tests. 3. 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 Factory

ShenZhen STS Test Services Co.,Ltd.

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

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 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
8	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices
9	FCC KDB 616217 D04 v01r02	SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers

(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:

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

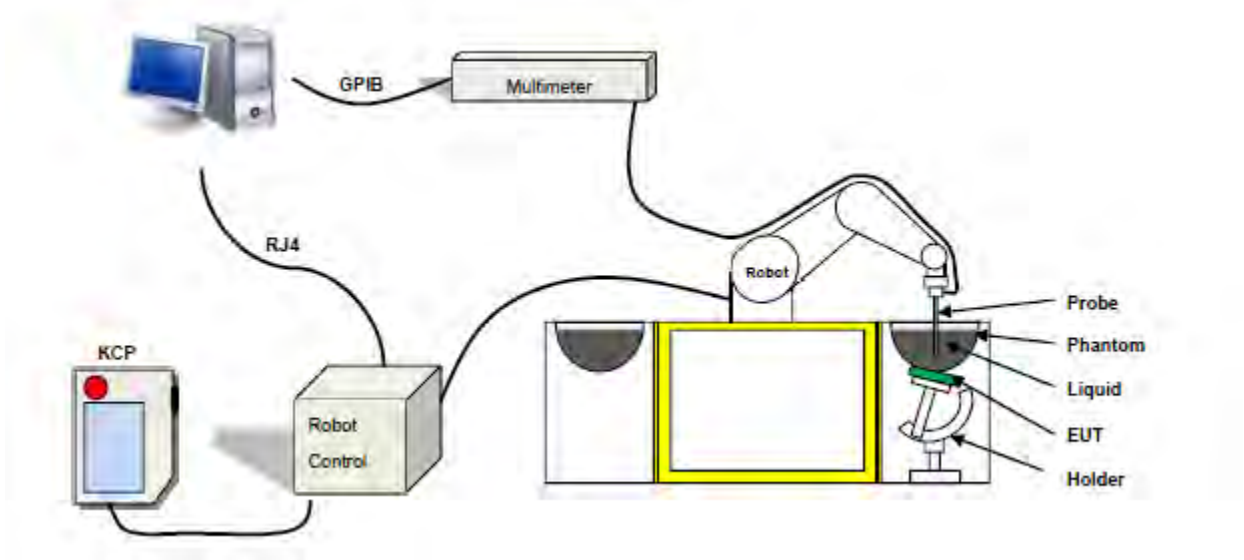
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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°

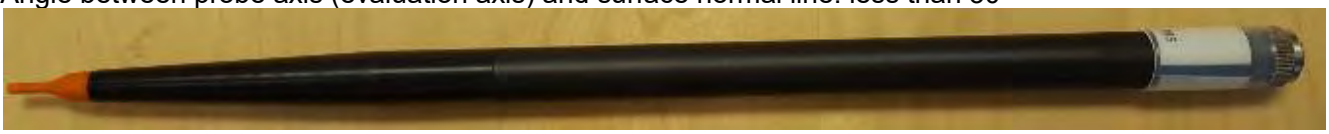


Figure 1-MVG COMOSAR Dosimetric E field Dipole

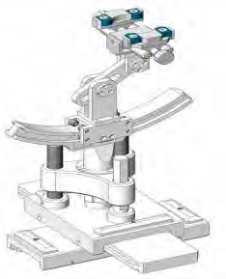
3.2.2 Phantom

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

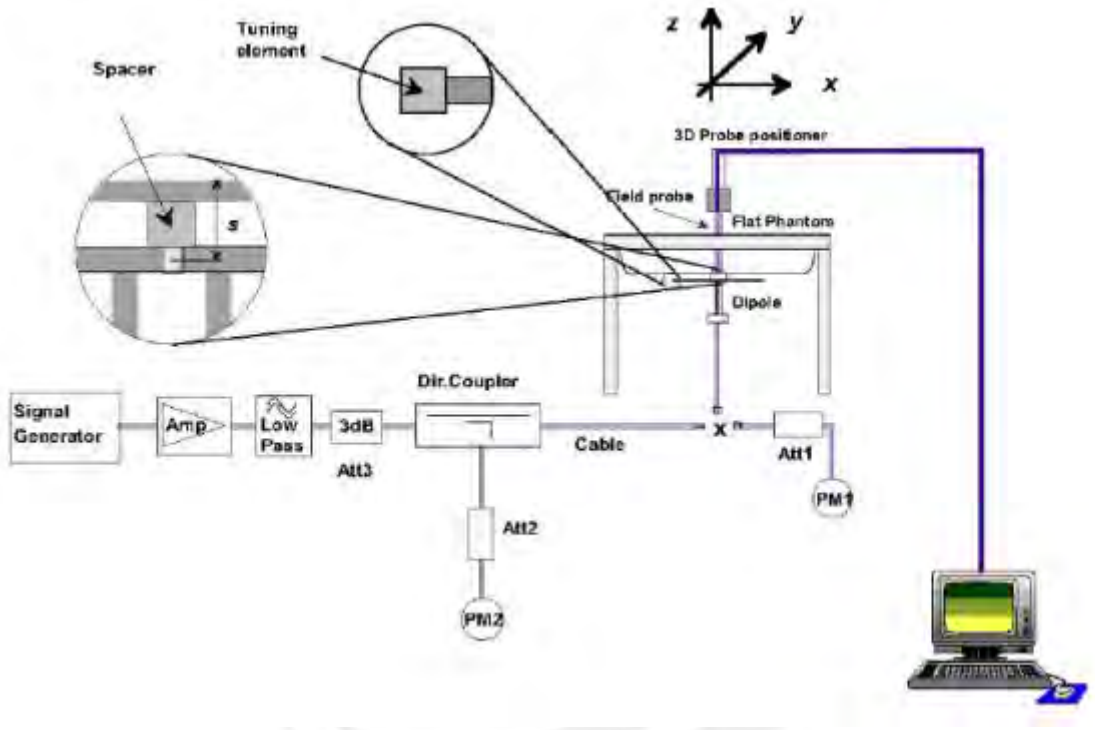
Date	Ambient condition		Body Simulating Liquid		Parameters	Target	Measured	Deviation [%]	Limited [%]
	Temp. [°C]	Humidity [%]	Frequency	Temp. [°C]					
2020-03-10	23.1	52	2450 MHz	22.7	Permittivity:	52.7	52.53	-0.32	±5
					Conductivity:	1.95	1.98	1.54	±5
2020-03-11	22.2	45	5200 MHz	21.8	Permittivity:	49.0	48.77	-0.47	±5
					Conductivity:	5.30	5.26	-0.75	±5
2020-03-12	22.4	56	5400 MHz	22.1	Permittivity:	48.70	48.95	0.51	±5
					Conductivity:	5.53	5.50	-0.54	±5
2020-03-13	23.2	57	5600 MHz	23.0	Permittivity:	48.5	48.38	-0.25	±5
					Conductivity:	5.77	5.82	0.87	±5
2020-03-16	22.8	50	5800 MHz	22.5	Permittivity:	48.2	48.95	1.56	±5
					Conductivity:	6.00	6.14	2.33	±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 Body	100	5.395	53.95	52.4	2.96	2020-03-10
5200 Body	100	15.872	158.72	159	-0.18	2020-03-11
5400 Body	100	17.393	173.93	166.4	4.53	2020-03-12
5600 Body	100	17.611	176.11	173.8	1.33	2020-03-13
5800 Body	100	18.214	182.14	181.2	0.52	2020-03-16

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

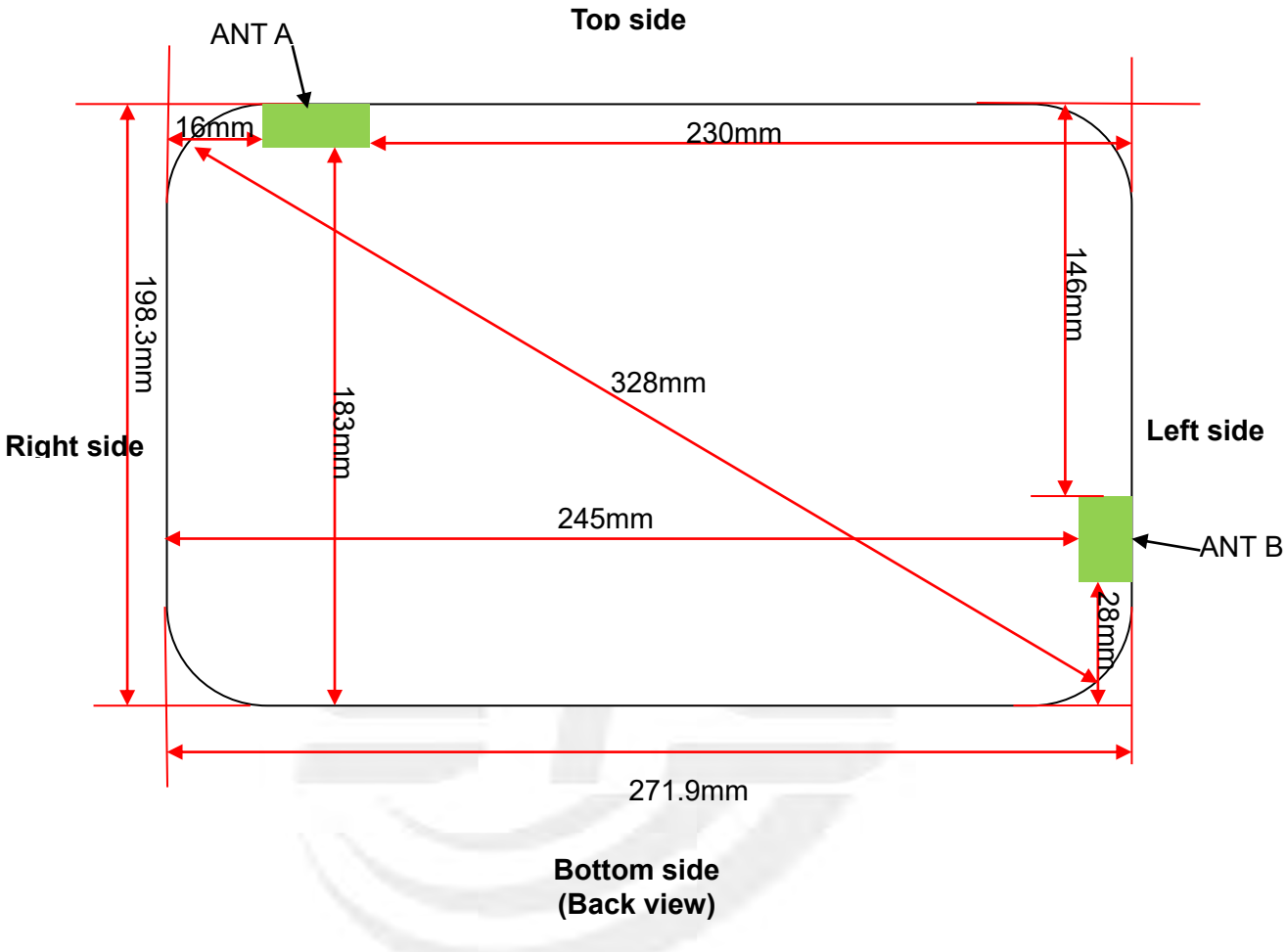
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible 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 Rugged Tablet PC, support WIFI/BT mode.



WLAN/BT 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

According with FCC KDB 447498 D01, appendix A, <SAR test exclusion thresholds for 100MHz ~6GHz and≤50mm＞table, this device SAR test configurations consider as following:

Band	Mode	Maxim um power		Test Position Configurations				
		dBm	mW	Back Side	Left Edge	Right Edge	Top Edge	Bottom Edge
WLAN 2.4 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			10	1896	29	10	1426
	802.11b	18	63.096	Yes	No	Yes	Yes	No
WLAN 2.4 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			10	10	2046	1056	57
	802.11b	18	63.096	Yes	Yes	No	No	Yes
WLAN 2.4 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			10	1896	29	10	1426
	802.11n	19	79.433	Yes	No	Yes	Yes	No
WLAN 2.4 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			10	10	2046	1056	57
	802.11n	19	79.433	Yes	Yes	No	No	Yes
WLAN 5.2 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			7	1866	20	7	1396
	802.11a	17	50.119	Yes	No	Yes	Yes	No
WLAN 5.2 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			7	7	2016	1026	39
	802.11a	15	31.623	Yes	Yes	No	No	No
WLAN 5.2 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			7	1866	20	7	1396
	802.11n	18	63.096	Yes	No	Yes	Yes	No
WLAN 5.2 G ANT B	Distance to User			<5mm	<5mm	245mm	146m	28mm
	exclusion threshold			7	7	2016	1026	39
	802.11n	18	63.096	Yes	Yes	No	No	Yes
WLAN 5.3 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1865	19	6	1395
	802.11a	15	31.623	Yes	No	Yes	Yes	No
WLAN 5.3 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2015	1025	39
	802.11a	14	25.119	Yes	Yes	No	No	No

WLAN 5.3 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183m
	exclusion threshold			6	1865	19	6	1395
	802.11n	18	63.096	Yes	No	Yes	Yes	No
WLAN 5.3 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2015	1025	39
	802.11n	18	63.096	Yes	Yes	No	No	Yes
WLAN 5.6 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11a	18	63.096	Yes	No	Yes	Yes	No
WLAN 5.6 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11a	17	50.119	Yes	Yes	No	No	Yes
WLAN 5.6 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11ac	19	79.433	Yes	No	Yes	Yes	No
WLAN 5.6 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11ac	19	79.433	Yes	Yes	No	No	Yes
WLAN 5.8 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11a	16	39.811	Yes	No	Yes	Yes	No
WLAN 5.8 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11a	15	31.623	Yes	Yes	No	No	No
WLAN 5.8 G ANT A	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			6	1962	19	6	1392
	802.11n	15	31.623	Yes	No	Yes	Yes	No
WLAN 5.8 G ANT B	Distance to User			<5mm	<5mm	245mm	146mm	28mm
	exclusion threshold			6	6	2012	1022	37
	802.11n	15	31.623	Yes	Yes	No	No	No
Bluetooth	Distance to User			<5mm	230mm	16mm	<5mm	183mm
	exclusion threshold			10	1896	29	10	1426
	GFSK	5	3.162	No	No	No	No	No

Note：

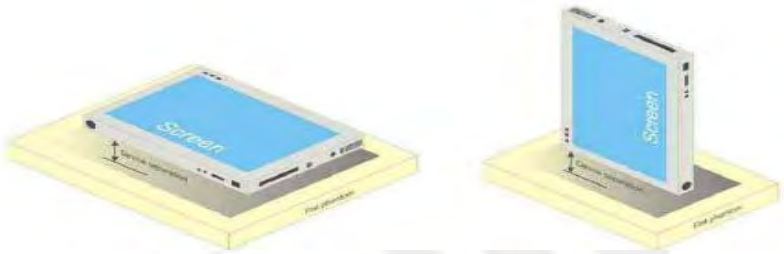
1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. per KDB 447498 D01, standalone SAR test exclusion threshold is applied; if the distance of the antenna to the user is <5mm, 5mm 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 447498 D02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/ HSUPA/DC-HSDPA output power is<0.25db higher than RMC 12.2Kbps,or reported SAR with RMC 12.2kbps setting is ≤1.2W/Kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.
7. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine futher 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.
8. Per KDB 616217 D04 Exposures from antennas through the front (top) surface of the display section of a full-size tablet, away from the edges, are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary.

8. EUT Test Position

This EUT was tested in Front Face and Rear Face.

8.1 Define Two Imaginary Lines on the Handset

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.



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	17.32	17.12	N/A
	6	2437	17.51	17.20	N/A
	11	2462	17.21	17.04	N/A
802.11g	1	2412	15.58	15.37	N/A
	6	2437	15.78	15.47	N/A
	11	2462	15.49	15.33	N/A
802.11n20(HT0)	1	2412	15.49	15.34	18.43
	6	2437	15.79	15.54	18.68
	11	2462	15.46	15.39	18.44
802.11n40(HT0)	3	2422	15.69	15.52	18.62
	6	2437	15.53	15.39	18.47
	9	2452	15.53	15.27	18.41

WLAN (5.2Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	36	5180	16.15	15.27	N/A
	40	5200	15.67	15.04	N/A
	48	5240	15.44	14.85	N/A
802.11 n-HT20	36	5180	15.29	14.28	17.82
	40	5200	14.86	14.07	17.49
	48	5240	14.59	13.92	17.28
802.11 n-HT40	38	5190	12.16	11.18	14.71
	46	5230	11.75	10.79	14.31
802.11 ac-VHT20	36	5180	15.27	14.27	17.81
	40	5200	14.89	14.02	17.49
	48	5240	14.58	13.82	17.23
802.11 ac-VHT40	38	5190	12.21	11.14	14.72
	46	5230	11.80	10.73	14.31
802.11 ac-VHT80	42	5210	9.51	8.10	11.87

WLAN (5.3Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	52	5260	14.65	13.90	N/A
	60	5300	14.32	13.69	N/A
	64	5320	14.16	13.60	N/A
802.11 n-HT20	52	5260	14.58	13.85	17.24
	60	5300	14.27	13.66	16.98
	64	5320	14.11	13.61	16.88
802.11 n-HT40	54	5270	13.43	12.78	16.13
	62	5310	13.15	12.62	15.90
802.11 ac-VHT20	52	5260	14.53	13.88	17.23
	60	5300	14.32	13.66	17.01
	64	5320	14.11	13.61	16.88
802.11 ac-VHT40	54	5270	13.45	12.82	16.16
	62	5310	13.05	12.64	15.86
802.11 ac-VHT80	58	5290	8.32	8.28	11.31

WLAN (5.6Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	100	5500	17.44	16.60	N/A
	116	5580	17.99	16.86	N/A
	140	5700	17.52	16.25	N/A
802.11 n20-HT0	100	5500	15.20	14.48	17.86
	116	5580	15.87	14.69	18.33
	140	5700	15.59	13.98	17.87
802.11 n40-HT0	102	5510	14.37	13.41	16.93
	110	5550	14.56	13.52	17.08
	134	5670	14.52	12.98	16.83
802.11 ac20-VHT0	100	5500	15.38	14.40	17.93
	116	5580	16.01	14.64	18.39
	140	5700	15.58	14.00	17.87
802.11 ac40-VHT0	102	5510	14.31	13.43	16.90
	110	5550	14.57	13.55	17.10
	134	5670	14.62	12.98	16.88
802.11 ac80-VHT0	106	5530	8.77	8.65	11.72
	122	5610	8.47	8.43	11.46

WLAN (5.8Gband)

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)		
			ANT A	ANT B	ANT A+B
802.11a	149	5745	15.21	13.83	N/A
	157	5785	15.11	14.28	N/A
	165	5825	14.93	14.20	N/A
802.11 n20-HT0	149	5745	12.18	10.60	14.47
	157	5785	12.02	11.03	14.56
	165	5825	11.70	10.96	14.35
802.11 n40-HT0	151	5755	12.02	10.70	14.42
	159	5795	11.79	10.97	14.41
802.11 ac20-VHT0	149	5745	12.15	10.59	14.45
	157	5785	12.04	10.80	14.48
	165	5825	11.81	10.95	14.41
802.11 ac40-VHT0	151	5755	12.01	10.68	14.41
	159	5795	11.94	11.05	14.53
802.11 ac80-VHT0	155	5775	7.29	7.27	10.29

Bluetooth

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	4.32
	39	2441	4.72
	78	2480	4.45
π/4-DQPSK(2Mbps)	0	2402	1.95
	39	2441	2.19
	78	2480	2.18
8DPSK(3Mbps)	0	2402	1.93
	39	2441	2.19
	78	2480	2.09

BLE

Mode	Channel Number	Frequency (MHz)	Average Power (dBm)
GFSK(1Mbps)	0	2402	3.15
	19	2440	3.41
	39	2480	3.23

10.2 Tune-up Power

WLAN (2.4Gband)

Mode	WLAN(AVG)		
	ANT A	ANT B	ANT A+B
IEEE 802.11b	17±1dBm	17±1dBm	N/A
IEEE 802.11g	15±1dBm	15±1dBm	N/A
IEEE 802.11n20(HT0)	15±1dBm	15±1dBm	18±1dBm
IEEE 802.11n40(HT0)	15±1dBm	15±1dBm	18±1dBm

WLAN (5.2Gband)

Mode	WLAN(AVG)		
	ANT A	ANT B	ANT A+B
802.11a	16±1dBm	15±1dBm	N/A
802.11 n20-HT0	15±1dBm	14±1dBm	17±1dBm
802.11 n40-HT0	12±1dBm	11±1dBm	14±1dBm
802.11 ac20-VHT0	15±1dBm	14±1dBm	17±1dBm
802.11 ac40-VHT0	12±1dBm	11±1dBm	14±1dBm
802.11 ac80-VHT0	9±1dBm	8±1dBm	11±1dBm

WLAN (5.3Gband)

Mode	WLAN(AVG)		
	ANT A	ANT B	ANT A+B
802.11a	14±1dBm	13±1dBm	N/A
802.11 n20-HT0	14±1dBm	13±1dBm	17±1dBm
802.11 n40-HT0	13±1dBm	12±1dBm	16±1dBm
802.11 ac20-VHT0	14±1dBm	13±1dBm	17±1dBm
802.11 ac40-VHT0	13±1dBm	12±1dBm	16±1dBm
802.11 ac80-VHT0	8±1dBm	8±1dBm	11±1dBm

WLAN (5.6Gband)

Mode	WLAN(AVG)		
	ANT A	ANT B	ANT A+B
802.11a	17±1dBm	15.9±1dBm	N/A
802.11 n20-HT0	15±1dBm	14±1dBm	18±1dBm
802.11 n40-HT0	14±1dBm	13±1dBm	17±1dBm
802.11 ac20-VHT0	16±1dBm	14±1dBm	18±1dBm
802.11 ac40-VHT0	14±1dBm	13±1dBm	17±1dBm
802.11 ac80-VHT0	8±1dBm	8±1dBm	11±1dBm

WLAN (5.8Gband)

Mode	WLAN(AVG)		
	ANT A	ANT B	ANT A+B
802.11a	15±1dBm	14±1dBm	N/A
802.11 n20-HT0	12±1dBm	11±1dBm	14±1dBm
802.11 n40-HT0	12±1dBm	10±1dBm	14±1dBm
802.11 ac20-VHT0	12±1dBm	10±1dBm	14±1dBm
802.11 ac40-VHT0	12±1dBm	11±1dBm	14±1dBm
802.11 ac80-VHT0	7±1dBm	7±1dBm	10±1dBm

BT

Mode	BT(AVG)
GFSK	4±1dBm
π/4-DQPSK	2±1dBm
8DPSK	2±1dBm

BLE

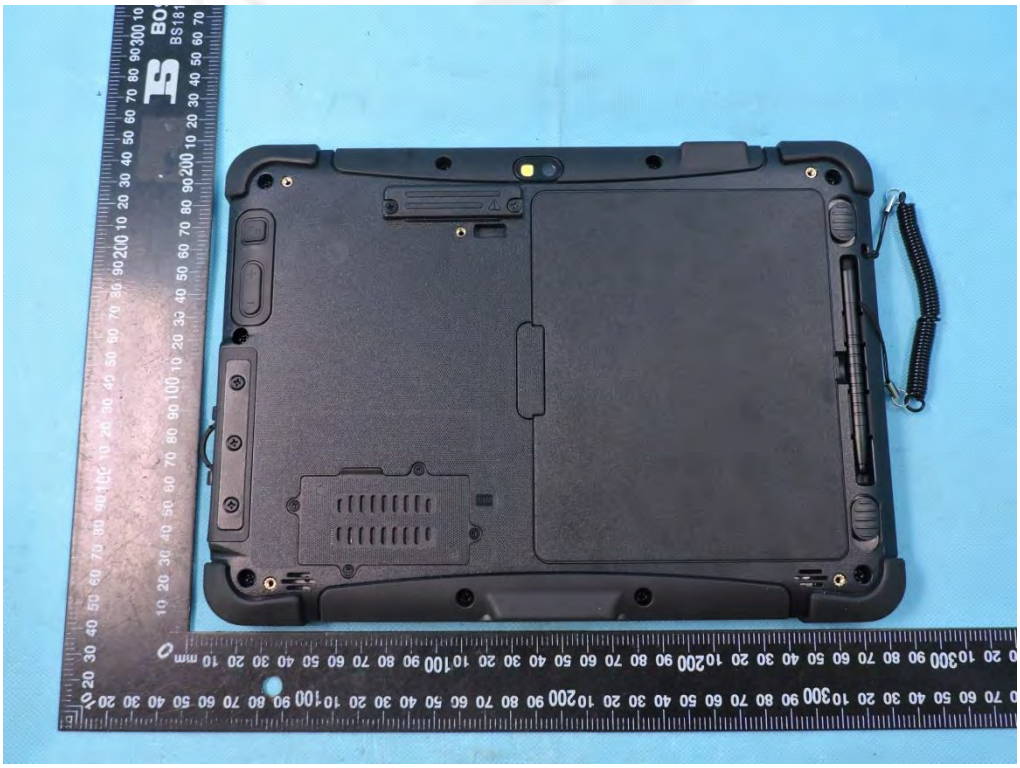
Mode	BLE(AVG)
GFSK	3±1dBm

11. EUT and Test Setup Photo

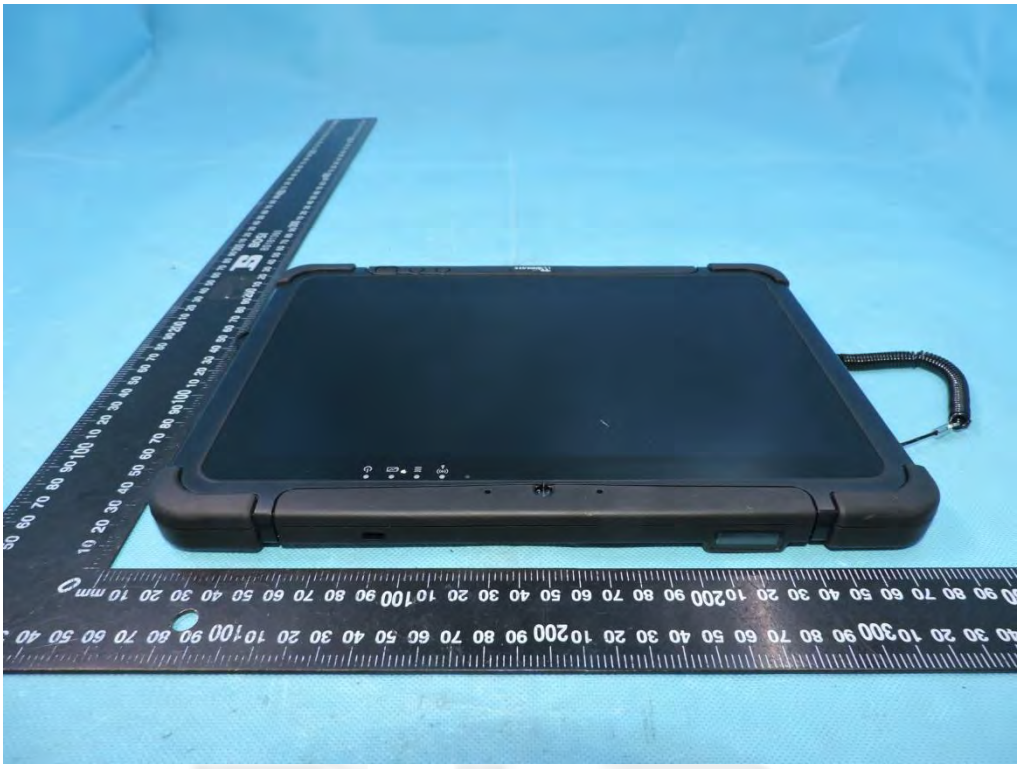
11.1 EUT Photo

Front side

Back side

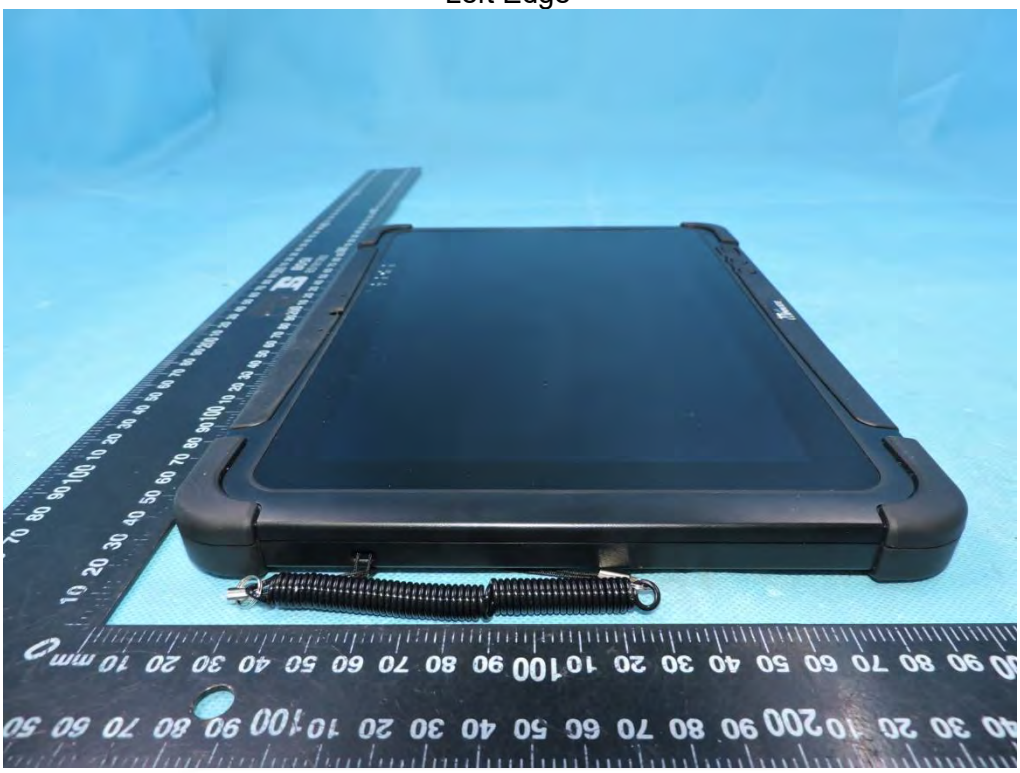


Top Edge

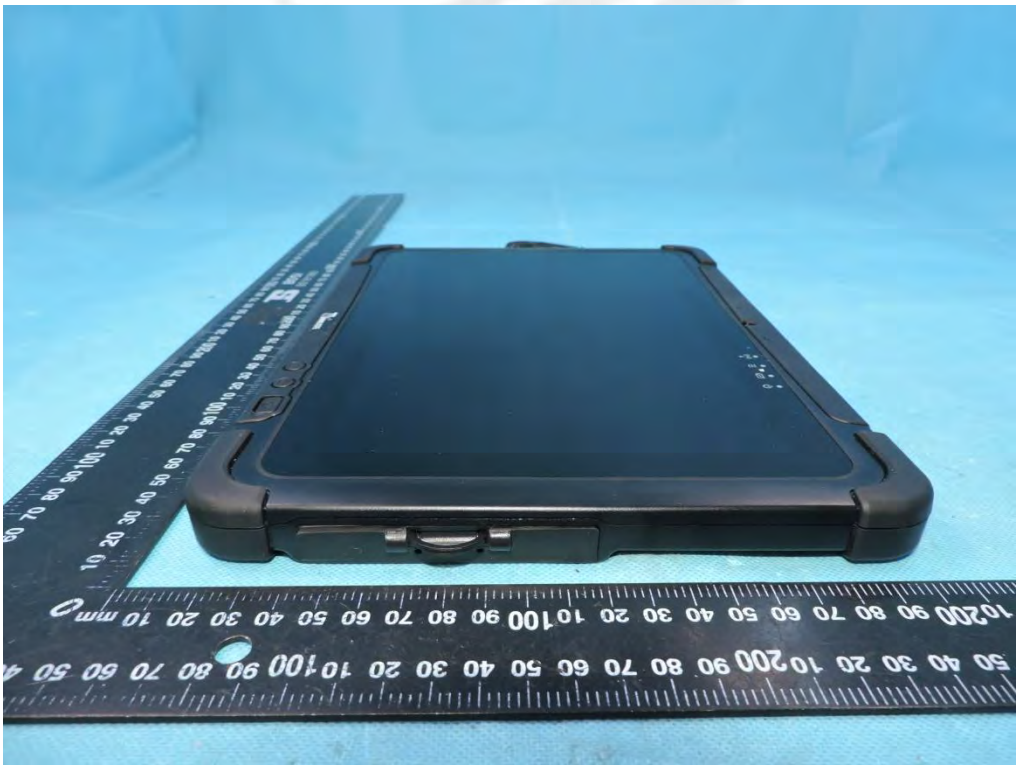


Bottom Edge

Left Edge



Right Edge



11.2 Setup Photo

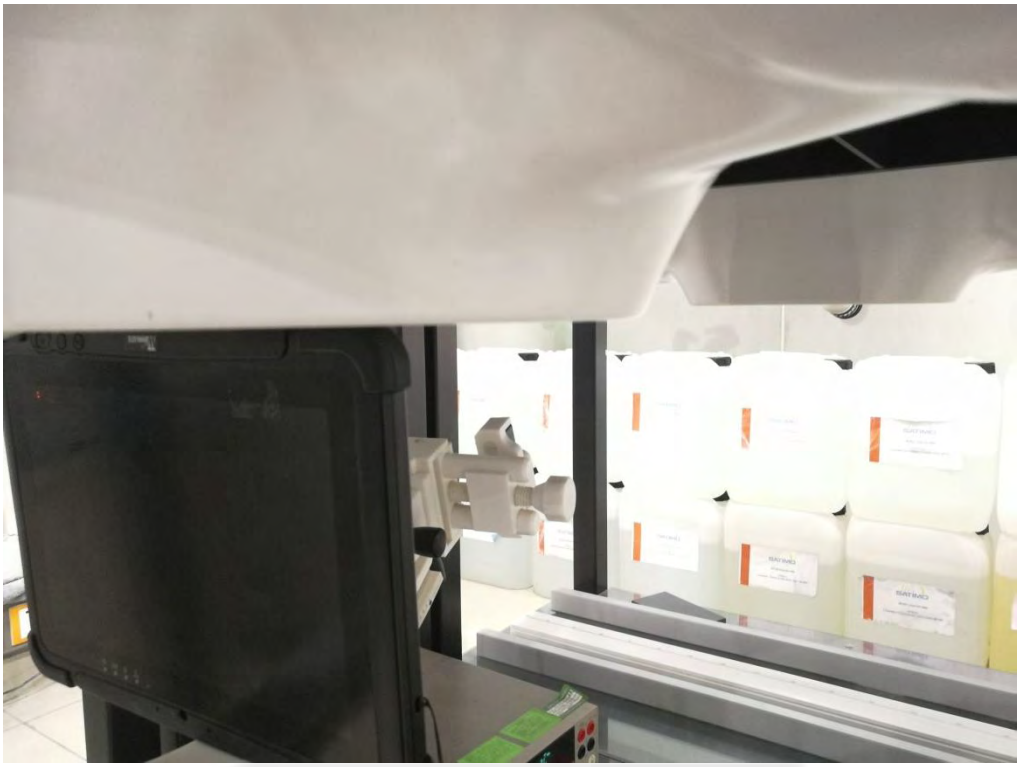
Body Back side(separation distance is 0mm)

Left Edge(separation distance is 0mm)

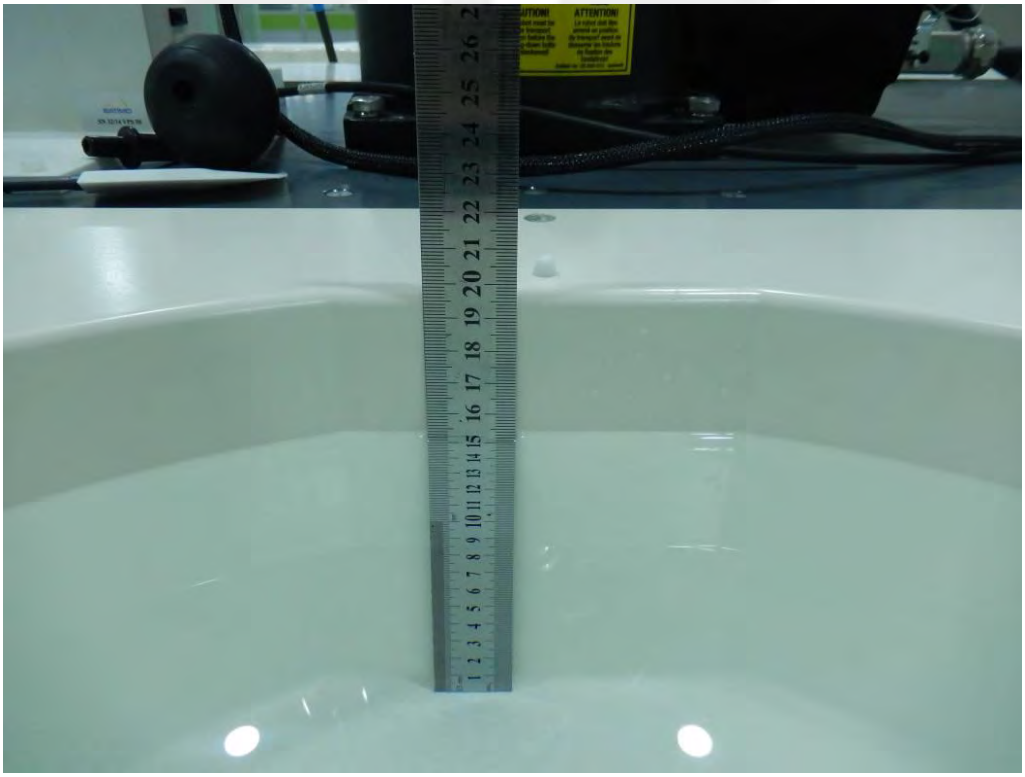
Right Edge(separation distance is 0mm)

Top Edge(separation distance is 0mm)

Bottom Edge(separation distance is 0mm)



Liquid depth (15 cm)



12. SAR Result Summary

12.1 Body SAR

Band	Mode	Antenna	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	A	Back side	6	0.695	-3.39	18	17.51	100	**0.778**	1
			Right Edge	6	0.140	0.34	18	17.51	100	0.157	/
			Top Edge	6	0.256	-3.03	18	17.51	100	0.287	/
		B	Back side	6	0.605	-1.99	18	17.20	100	**0.727**	2
			Left Edge	6	0.202	-3.63	18	17.20	100	0.243	/
			Bottom Edge	6	0.041	2.07	18	17.20	100	0.049	/
	802.11n	A	Back side	6	0.091	3.93	19	18.68	100	**0.098**	3
			Right Edge	6	0.046	3.79	19	18.68	100	0.050	/
			Top Edge	6	0.029	-1.93	19	18.68	100	0.031	/
		B	Back side	6	0.084	-1.13	19	18.68	100	**0.090**	4
			Left Edge	6	0.067	2.84	19	18.68	100	0.072	/
			Bottom Edge	6	0.022	1.60	19	18.68	100	0.024	/

Note:

1. The test separation of all above table is 0mm.
2. 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
3. Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was 0.522 W/Kg for Body)

Band	Mode	Antenna	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.
5.2G WLAN	802.11a	A	Back side	36	0.788	0.43	17	16.15	100	**0.958**	5
			Back side	40	0.674	1.25	17	15.67	100	0.916	/
			Back side	48	0.625	-1.47	17	15.44	100	0.895	/
			Right Edge	36	0.513	-1.76	17	16.15	100	0.624	/
			Top Edge	36	0.326	3.01	17	16.15	100	0.396	/
		B	Back side	36	0.841	-2.14	16	15.27	100	**0.995**	6
			Left Edge	36	0.755	-2.76	16	15.27	100	0.893	/
			Bottom Edge	36	0.202	2.39	16	15.27	100	0.239	/
	802.11n	A	Back side	36	0.445	-1.04	18	17.82	100	**0.464**	7
			Right Edge	36	0.375	-1.79	18	17.82	100	0.391	/
			Top Edge	36	0.186	1.58	18	17.82	100	0.194	/
		B	Back side	36	0.262	2.40	18	17.82	100	**0.273**	8
			Left Edge	36	0.237	0.38	18	17.82	100	0.247	/
			Bottom Edge	36	0.114	2.32	18	17.82	100	0.119	/

Band	Mode	Antenna	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.
5.3G WLAN	802.11a	A	Back side	52	0.886	1.71	15	14.65	100	**0.960**	9
			Back side	60	0.813	-2.35	15	14.32	100	0.951	/
			Back side	64	0.755	0.77	15	14.16	100	0.916	/
			Right Edge	52	0.690	-0.95	15	14.65	100	0.748	/
			Top Edge	52	0.479	-1.81	15	14.65	100	0.519	/
		B	Back side	52	0.756	-3.78	14	13.90	100	**0.774**	10
			Left Edge	52	0.683	-3.85	14	13.90	100	0.699	/
	802.11n	A	Back side	52	0.203	2.89	18	17.24	100	**0.242**	11
			Right Edge	52	0.157	-3.37	18	17.24	100	0.187	/
			Top Edge	52	0.113	-0.72	18	17.24	100	0.135	/
		B	Back side	52	0.482	0.11	18	17.24	100	**0.574**	12
			Left Edge	52	0.436	-2.36	18	17.24	100	0.519	/
			Bottom Edge	52	0.267	-1.14	18	17.24	100	0.318	/

Band	Mode	Antenna	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.
5.6G WLAN	802.11a	A	Back side	100	1.233	1.39	18	17.44	100	1.403	/
			Back side	116	1.436	-0.52	18	17.99	100	**1.439**	13
			Back side	140	1.185	0.64	18	17.52	100	1.323	/
			Right Edge	116	1.175	1.10	18	17.99	100	1.178	/
			Top Edge	116	1.058	-3.61	18	17.99	100	1.060	/
		B	Back side	100	1.274	3.32	16.9	16.60	100	1.365	/
			Back side	116	1.422	0.70	16.9	16.86	100	**1.435**	14
			Back side	140	1.145	-2.57	16.9	16.25	100	1.330	/
			Left Edge	116	1.349	-2.94	16.9	16.86	100	1.361	/
			Bottom Edge	116	0.942	-2.94	16.9	16.86	100	0.951	/
	802.11 ac	A	Back side	116	0.392	3.93	19	18.39	100	**0.451**	15
			Right Edge	116	0.247	-3.27	19	18.39	100	0.284	/
			Top Edge	116	0.165	-1.96	19	18.39	100	0.190	/
		B	Back side	116	0.249	1.69	19	18.39	100	**0.287**	16
			Left Edge	116	0.221	0.63	19	18.39	100	0.254	/
			Bottom Edge	116	0.104	2.31	19	18.39	100	0.120	/

Band	Mode	Antenna	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.
5.8G WLAN	802.11a	A	Back side	149	0.969	-3.52	16	15.21	100	**1.162**	17
			Right Edge	149	0.765	2.28	16	15.21	100	0.918	/
			Top Edge	149	0.582	0.30	16	15.21	100	0.698	/
		B	Back side	157	0.793	2.93	15	14.28	100	**0.936**	18
			Left Edge	157	0.726	-0.14	15	14.28	100	0.857	/
	802.11n	A	Back side	157	0.391	-1.19	15	14.56	100	**0.433**	19
			Right Edge	157	0.248	2.15	15	14.56	100	0.274	/
			Top Edge	157	0.216	-0.18	15	14.56	100	0.239	/
		B	Back side	157	0.312	2.73	15	14.56	100	**0.345**	20
			Left Edge	157	0.289	-1.52	15	14.56	100	0.320	/

Band	Mode	Scaled SAR (W/Kg)		A+B
WLAN 2.4G	802.11n	Antenna A	0.098	0.188
	802.11n	Antenna B	0.090	
WLAN 5.2G	802.11n	Antenna A	0.464	0.737
	802.11n	Antenna B	0.273	
WLAN 5.3G	802.11n	Antenna A	0.242	0.816
	802.11n	Antenna B	0.574	
WLAN 5.6G	802.11ac	Antenna A	0.451	0.738
	802.11ac	Antenna B	0.287	
WLAN 5.8G	802.11n	Antenna A	0.433	0.778
	802.11n	Antenna B	0.345	

Note:

1. The test separation of all above table is 0mm.
2. Per KDB 447498 D01v05r01, 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

12.2 repeated SAR measurement

Band	Mode	Antenna	Test Position	Ch.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas. No.
5.2G WLAN	802.11a	A	Back Side	36	0.812	-2.35	17	16.15	0.988	/
5.2G WLAN	802.11a	B	Back Side	36	0.825	0.82	16	15.27	0.976	/
5.3G WLAN	802.11a	A	Back Side	52	0.929	1.48	15	14.65	1.007	/
5.6G WLAN	802.11a	A	Back Side	116	1.386	3.14	18	17.99	1.389	/
5.6G WLAN	802.11a	B	Back Side	116	1.359	-0.73	16.9	16.86	1.372	/
5.8G WLAN	802.11a	A	Back Side	149	0.986	1.25	16	15.21	1.183	/
5.8G WLAN	802.11a	B	Back Side	157	0.741	-2.33	15	14.28	0.875	/

Band			Test Position	Ch.	Original Measured SAR 1g(mW/g)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(mW/g)	2nd Repeated SAR 1g	Ratio
5.2G WLAN	802.11a	A	Back Side	36	0.788	0.812	1.03	-	-	-
5.2G WLAN	802.11a	B	Back Side	36	0.841	0.825	1.02	-	-	-
5.3G WLAN	802.11a	A	Back Side	52	0.886	0.929	1.05	-	-	-
5.6G WLAN	802.11a	A	Back Side	116	1.436	1.386	1.04	-	-	-
5.6G WLAN	802.11a	B	Back Side	116	1.422	1.359	1.05	-	-	-
5.8G WLAN	802.11a	A	Back Side	149	0.969	0.986	1.02	-	-	-
5.8G WLAN	802.11a	B	Back Side	157	0.793	0.741	1.07	-	-	-

Note:

1. Per KDB 865664 D01,for each frequency band ,repeated SAR measurement is required only when the measured SAR is≥0.8W/Kg.
2. Per KDB 865664 D01,if the ratio of largest to smallest SAR for the original and first repeated measurement is≤1.2and the measured SAR＜1.45W/Kg, only one repeated measurement is required.
3. 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 ≥ 1.45W/Kg
4. The ratio is the difference in percentage between original and repeated measured SAR.

Simultaneous Multi-band Transmission Evaluation:

1. 2.4G WLAN and 5G WLAN can't simultaneous transmission at the same time.
2. For simultaneous transmission at exposure position, 2 transmitters simultaneous transmission was the worst state.
3. Based upon KDB 447498 D01, BT SAR is excluded as below table.
4. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
5. 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
6. The reported SAR summation is calculated based on the same configuration and test position.
7. 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	5	3.162	5	2.480	0.133

Sum of the SAR for Wi-Fi and BT

Simultaneous Mode	Position	Mode	Max. 1-g SAR (W/kg)	1-g Sum SAR (W/kg)
2.4GHz WLAN ANT A + BT	Body	2.4GHz WLAN	0.778	0.911
		BT	0.133	
2.4GHz WLAN ANT B + BT	Body	2.4GHz WLAN	0.727	0.860
		BT	0.133	
2.4GHz WLAN ANT A+B + BT	Body	2.4GHz WLAN	0.188	0.321
		BT	0.133	
5.2GHz WLAN ANT A + BT	Body	5.2GHz WLAN	0.958	1.091
		BT	0.133	
5.2GHz WLAN ANT B + BT	Body	5.2GHz WLAN	0.995	1.128
		BT	0.133	
5.2GHz WLAN ANT A+B + BT	Body	5.2GHz WLAN	0.737	0.870
		BT	0.133	
5.3GHz WLAN ANT A + BT	Body	5.3GHz WLAN	0.960	1.093
		BT	0.133	
5.3GHz WLAN ANT B + BT	Body	5.3GHz WLAN	0.774	0.907
		BT	0.133	
5.3GHz WLAN ANT A+B + BT	Body	5.3GHz WLAN	0.816	0.949
		BT	0.133	
5.6GHz WLAN ANT A + BT	Body	5.6GHz WLAN	1.439	1.572
		BT	0.133	
5.6GHz WLAN ANT B + BT	Body	5.6GHz WLAN	1.435	1.568
		BT	0.133	
5.6GHz WLAN ANT A+B + BT	Body	5.6GHz WLAN	0.738	0.871
		BT	0.133	
5.8GHz WLAN ANT A + BT	Body	5.8GHz WLAN	1.162	1.295
		BT	0.133	
5.8GHz WLAN ANT B + BT	Body	5.8GHz WLAN	0.936	1.069
		BT	0.133	
5.8GHz WLAN ANT A+B + BT	Body	5.8GHz WLAN	0.778	0.911
		BT	0.133	

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	2017.08.15	2020.08.14
Waveguide	SATIMO	SWG5500	SN 13/14 WGA32	2017.08.15	2020.08.14
E-Field Probe	MVG	SSE2	SN 41/18 EPGO334	2019.06.04	2020.06.03
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

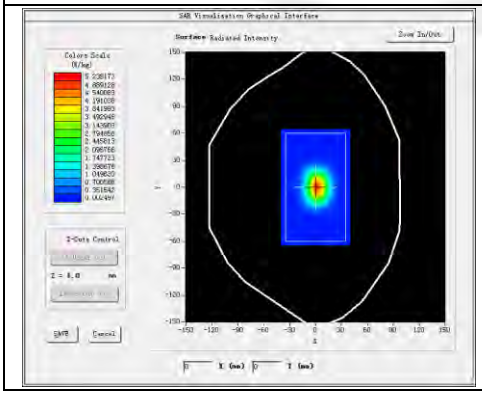
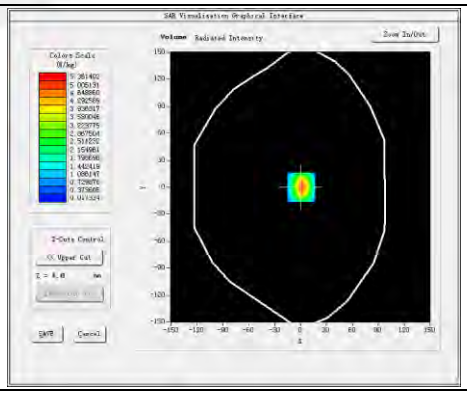
Appendix A. System Validation Plots

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: 2020-03-10

Experimental conditions.

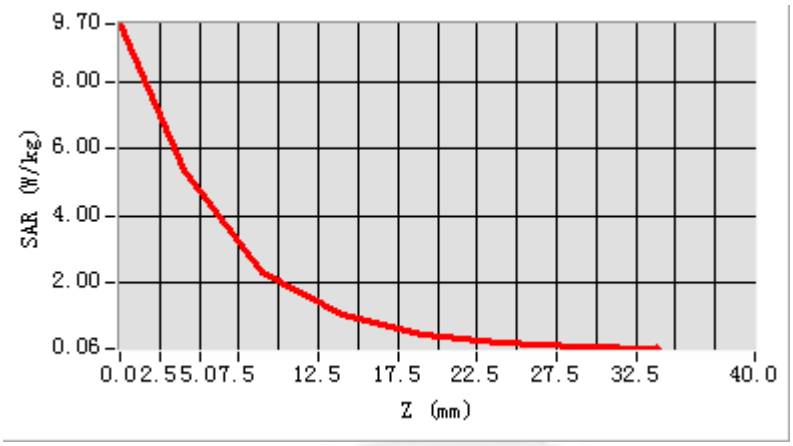
Device Position	Validation plane
Band	2450 MHz
Channels	-
Signal	CW
Frequency (MHz)	2450
Relative permittivity	52.53
Conductivity (S/m)	1.98
Power drift (%)	-2.33
Probe	SN 41/18 EPGO334
ConvF	2.02
Crest factor:	1:1

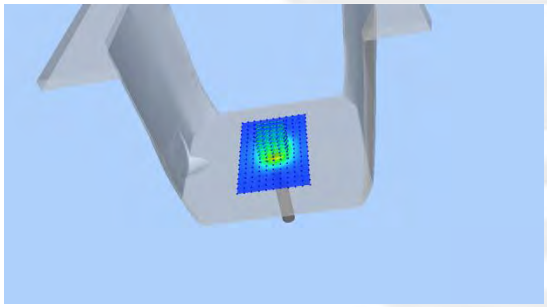
SURFACE SAR	VOLUME SAR
	

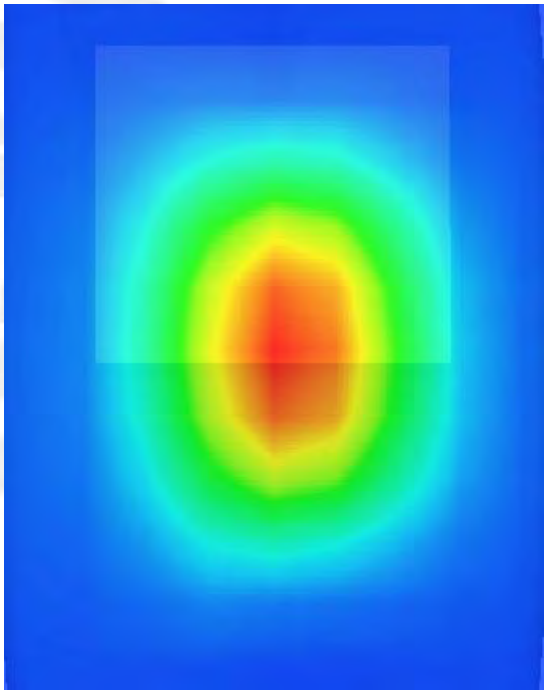
Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	2.431682
SAR 1g (W/Kg)	5.394775

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)



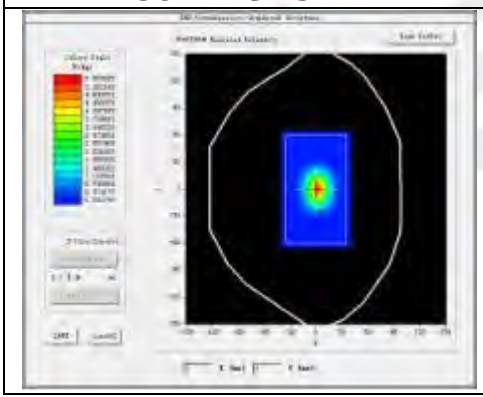
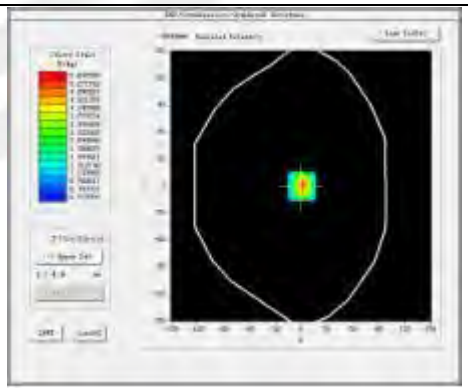


System Performance Check Data(5200MHz Body)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2020-03-11

Experimental conditions.

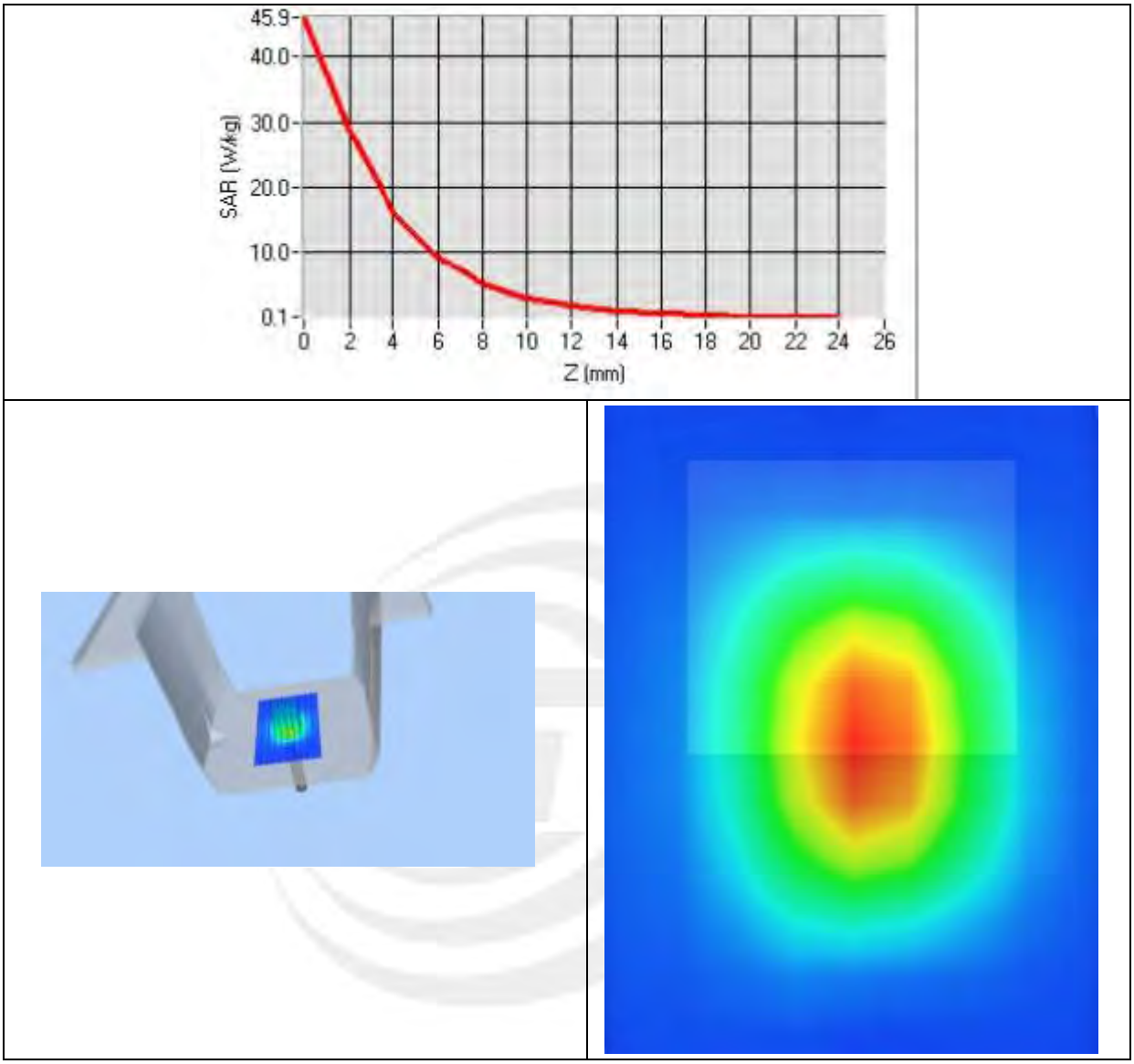
Device Position	Validation plane
Band	5200 MHz
Channels	-
Signal	CW
Frequency (MHz)	5200
Relative permittivity	48.77
Conductivity (S/m)	5.26
Power drift (%)	0.73
Probe	SN 41/18 EPGO334
ConvF	1.92
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=7.00, Y=2.00

SAR 10g (W/Kg)	5.814573
SAR 1g (W/Kg)	15.872161

Z Axis Scan

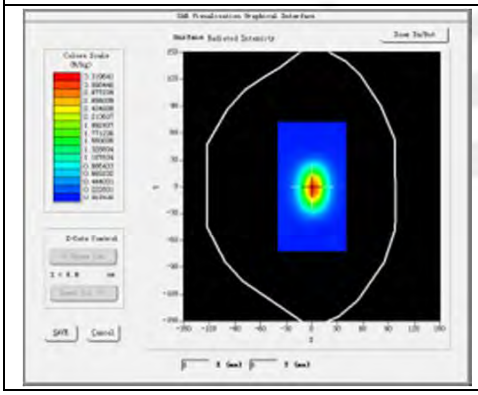
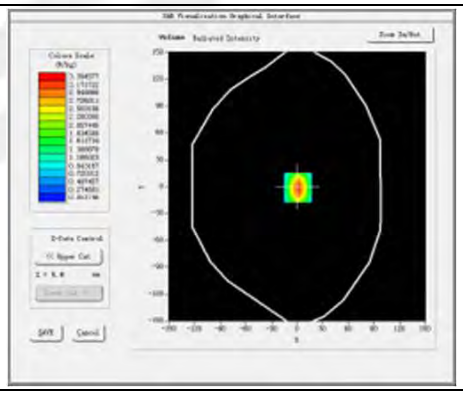


System Performance Check Data(5400MHz Body)

Type: Dipole measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2020-03-12

Experimental conditions.

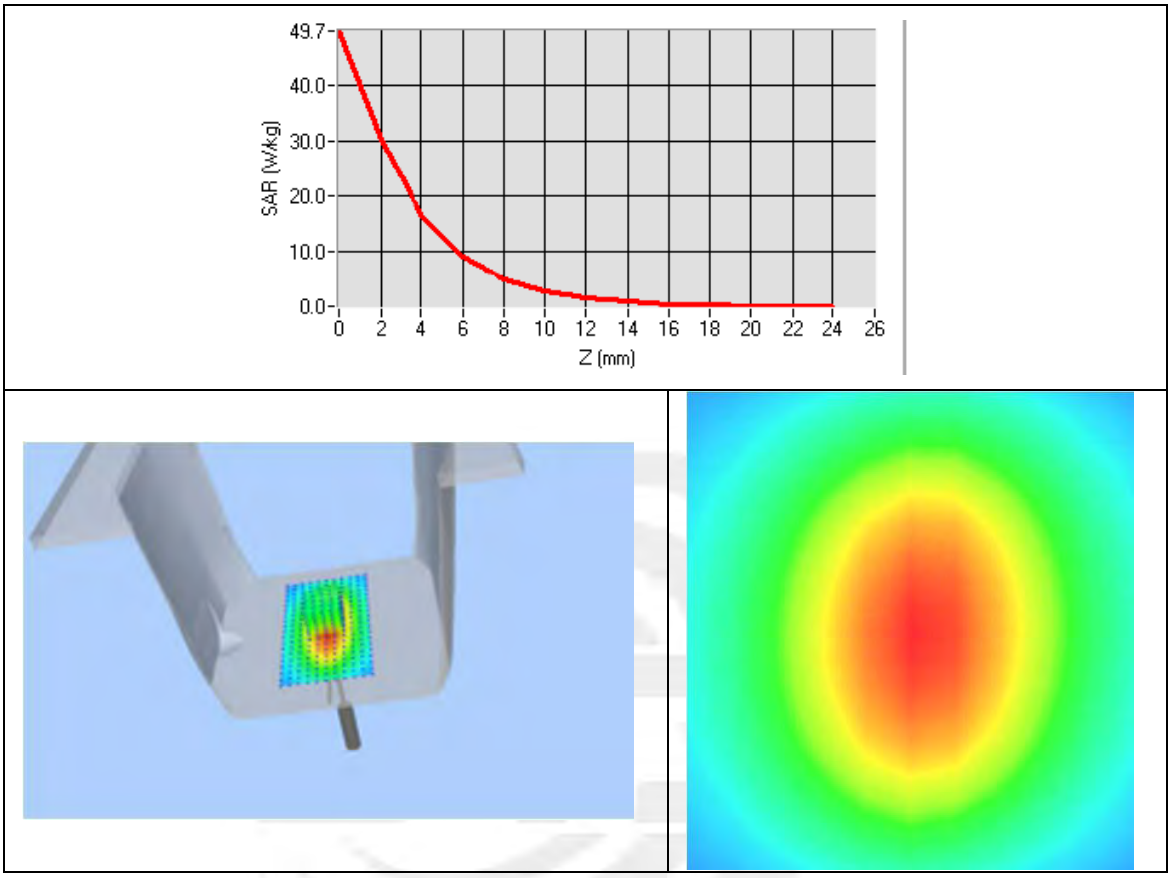
Device Position	Validation plane
Band	5400 MHz
Channels	-
Signal	CW
Frequency (MHz)	5400
Relative permittivity	48.95
Conductivity (S/m)	5.50
Power drift (%)	-1.38
Probe	SN 41/18 EPGO334
ConvF	2.12
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=7.00, Y=2.00

SAR 10g (W/Kg)	6.125312
SAR 1g (W/Kg)	17.392547

Z Axis Scan

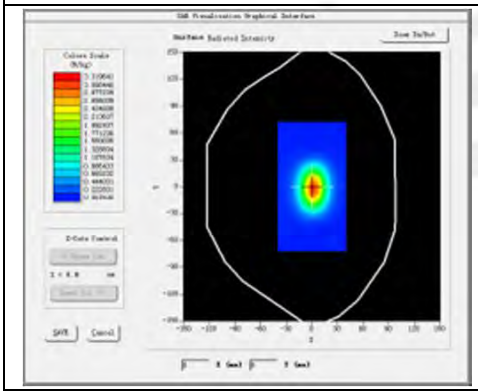
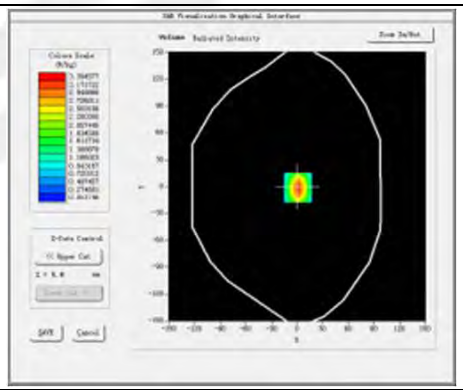


System Performance Check Data(5600MHz Body)

Type: Dipole measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2020-03-13

Experimental conditions.

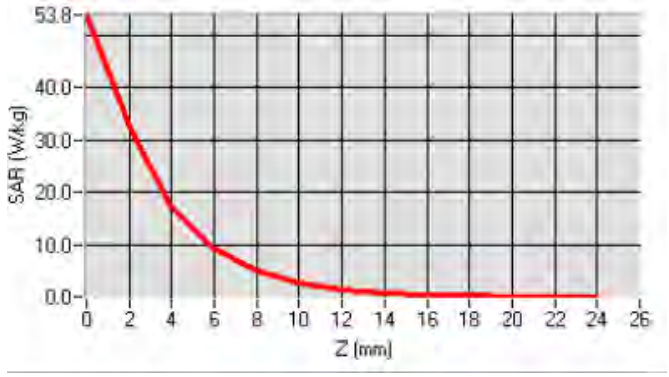
Device Position	Validation plane
Band	5600 MHz
Channels	-
Signal	CW
Frequency (MHz)	5600
Relative permittivity	48.38
Conductivity (S/m)	5.82
Power drift (%)	1.15
Probe	SN 41/18 EPGO334
ConvF	2.21
Crest factor:	1:1

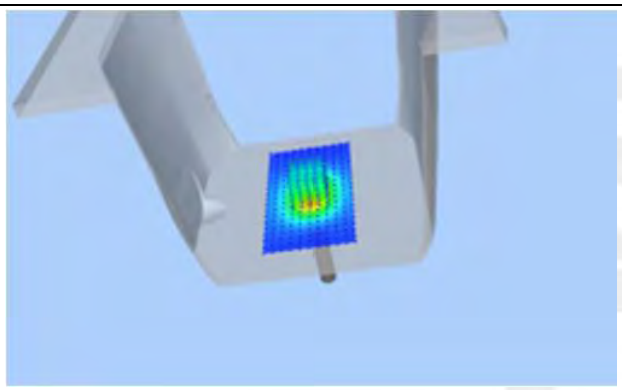
SURFACE SAR	VOLUME SAR
	

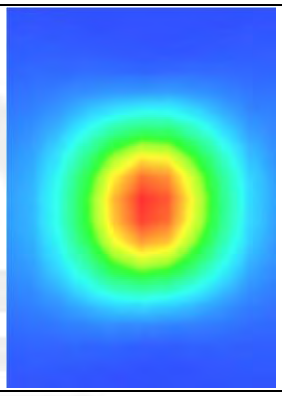
Maximum location: X=7.00, Y=2.00

SAR 10g (W/Kg)	6.278093
SAR 1g (W/Kg)	17.611498

Z Axis Scan





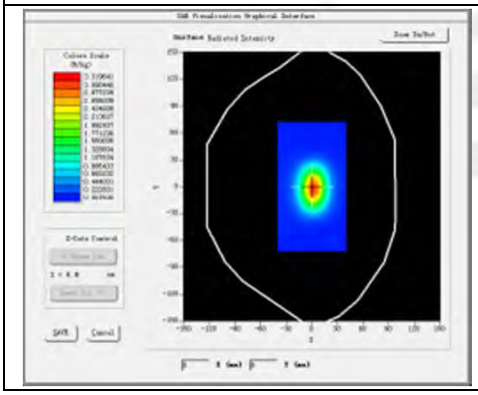
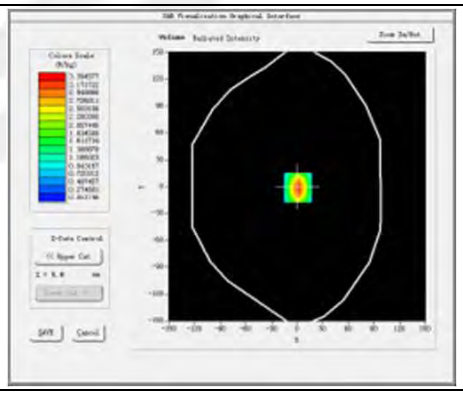


System Performance Check Data(5800MHz Body)

Type: Dipole measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm
Date of measurement: 2020-03-16

Experimental conditions.

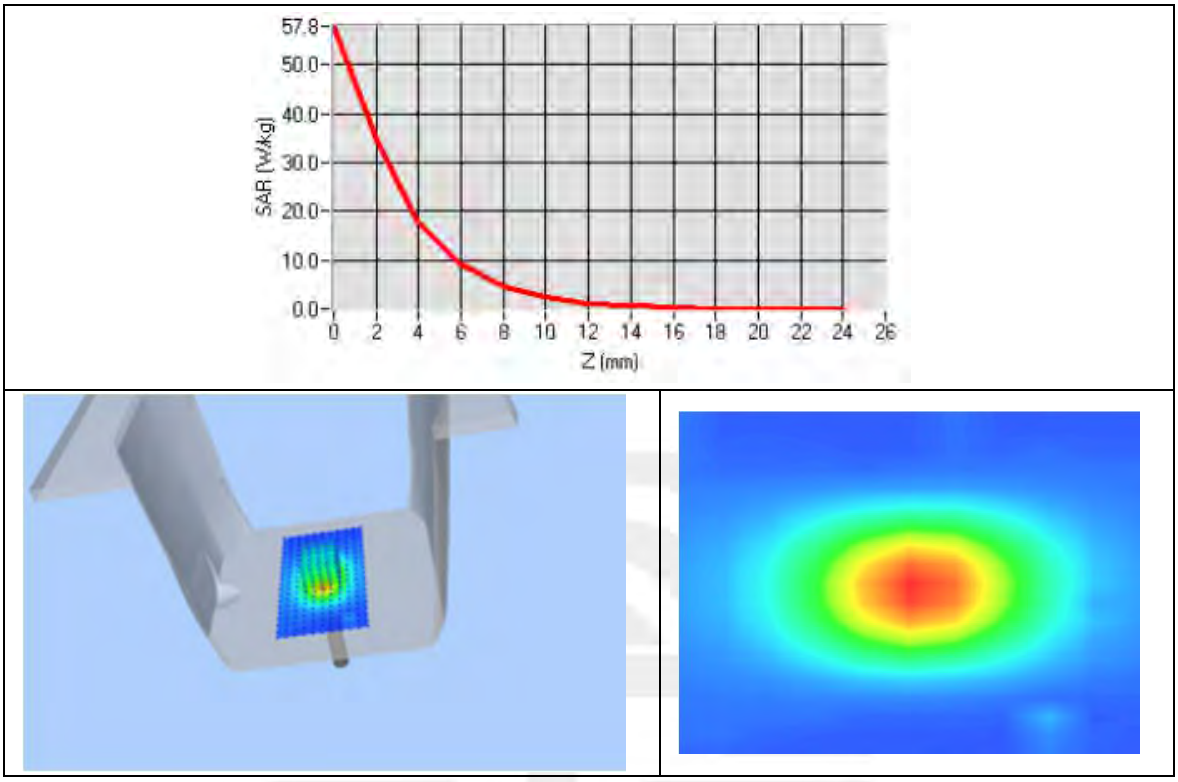
Device Position	Validation plane
Band	5800 MHz
Channels	-
Signal	CW
Frequency (MHz)	5800
Relative permittivity	48.95
Conductivity (S/m)	6.14
Power drift (%)	-3.27
Probe	SN 41/18 EPGO334
ConvF	2.16
Crest factor:	1:1

SURFACE SAR	VOLUME SAR
	

Maximum location: X=7.00, Y=2.00

SAR 10g (W/Kg)	6.118748
SAR 1g (W/Kg)	18.214063

Z Axis Scan


57.8
50.0
40.0
30.0
20.0
10.0
0.0
SAR (W/kg)
0 2 4 6 8 10 12 14 16 18 20 22 24 26
Z (mm)

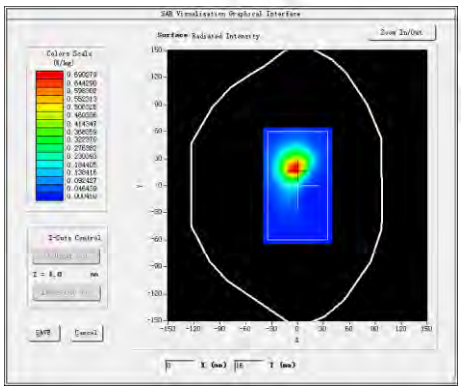
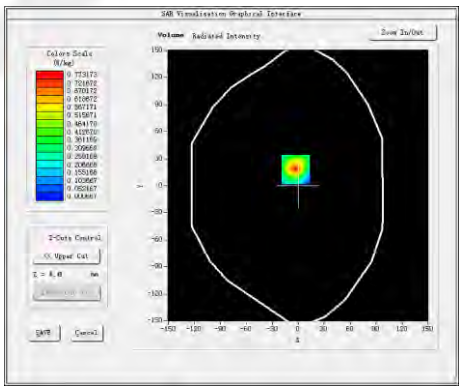
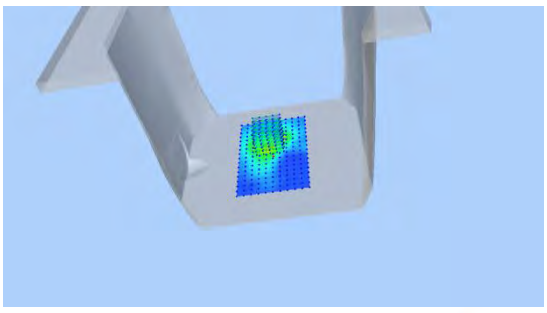
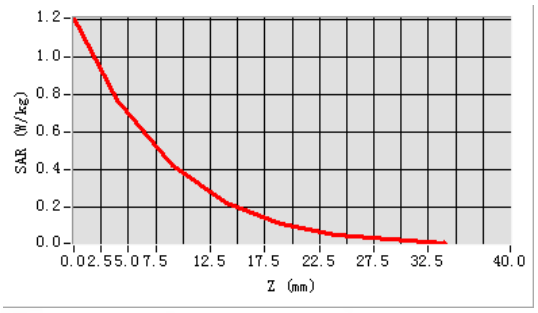
Appendix B. SAR Test Plots

Plot 1: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-10
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	Back Side
Band	IEEE 802.11b ISM
Channels	Middle
Antenna	A
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2437
Relative permittivity (real part)	52.53
Conductivity (S/m)	1.98
Variation (%)	-3.39

Maximum location: X=-3.00, Y=18.00
SAR Peak: 1.21 W/kg

SAR 10g (W/Kg)	0.324359
SAR 1g (W/Kg)	0.695273

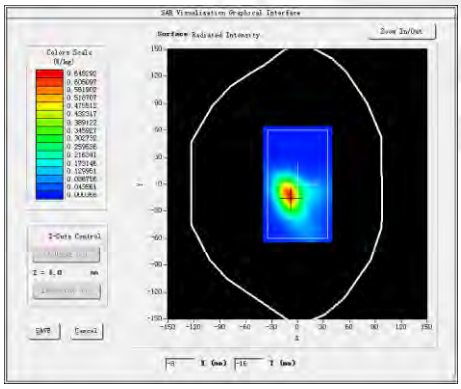
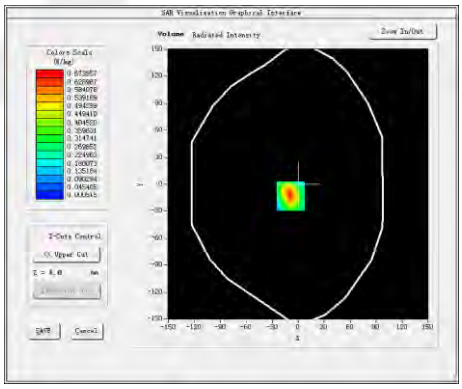
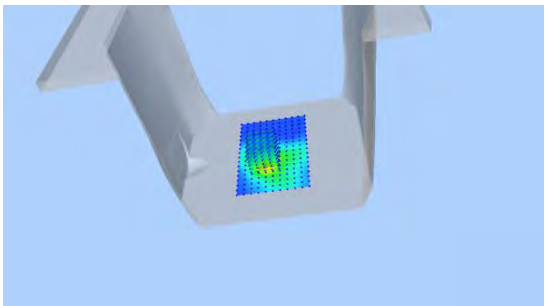
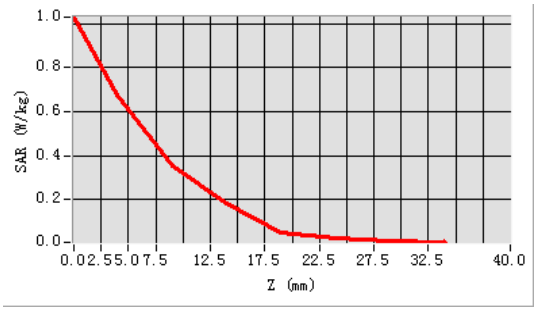
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 2: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-10
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	Back Side
Band	IEEE 802.11b ISM
Channels	Middle
Antenna	B
Signal	IEEE802.b (Crest factor: 1.0)
Frequency (MHz)	2437
Relative permittivity (real part)	52.53
Conductivity (S/m)	1.98
Variation (%)	-1.99

Maximum location: X=-9.00, Y=-13.00
SAR Peak: 1.03 W/kg

SAR 10g (W/Kg)	0.282847
SAR 1g (W/Kg)	0.604748

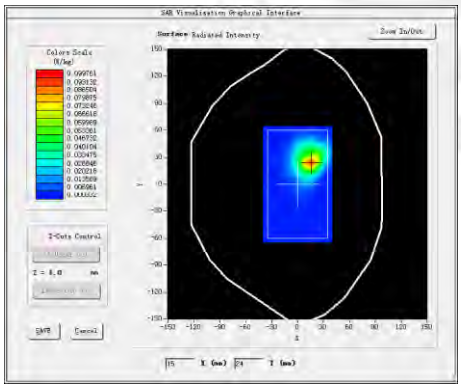
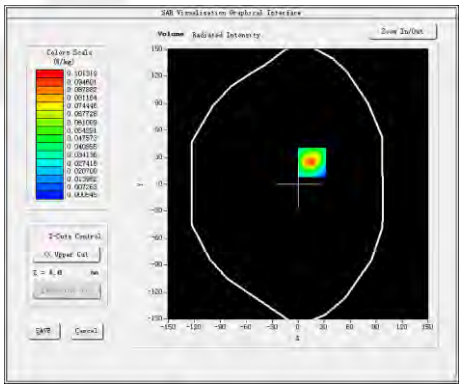
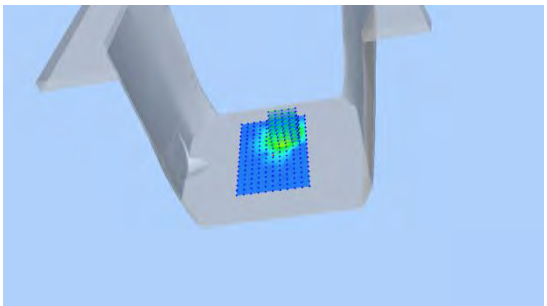
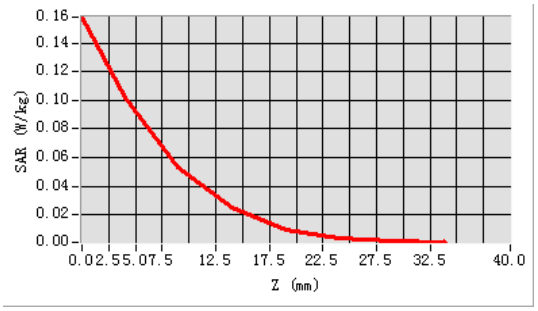
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 3: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-10
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	Back Side
Band	IEEE 802.11n ISM
Channels	Middle
Antenna	A
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	2437
Relative permittivity (real part)	52.53
Conductivity (S/m)	1.98
Variation (%)	3.93

Maximum location: X=16.00, Y=24.00
SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.039500
SAR 1g (W/Kg)	0.091043

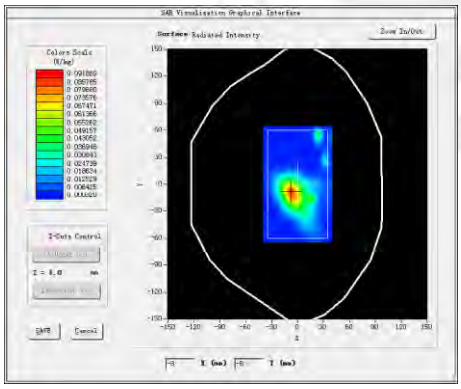
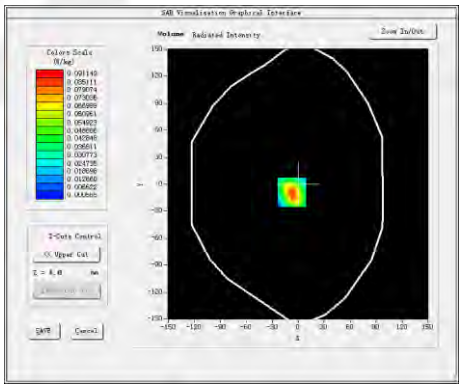
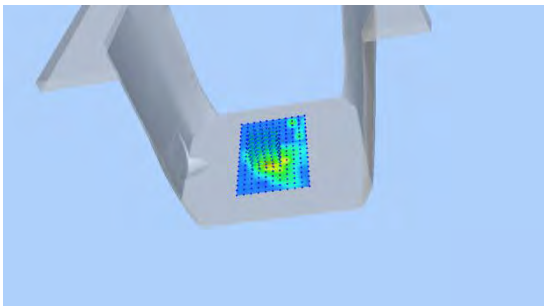
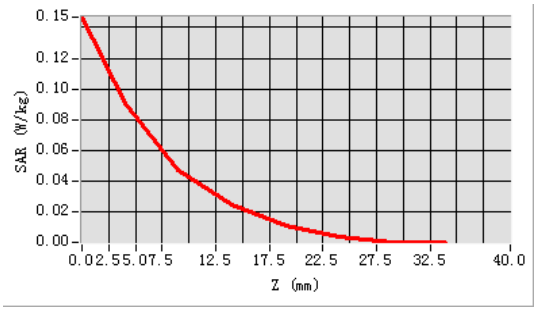
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 4: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-10
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	Back Side
Band	IEEE 802.11n ISM
Channels	Middle
Antenna	B
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	2437
Relative permittivity (real part)	52.53
Conductivity (S/m)	1.98
Variation (%)	-1.13

Maximum location: X=-7.00, Y=-9.00
SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.038445
SAR 1g (W/Kg)	0.084284

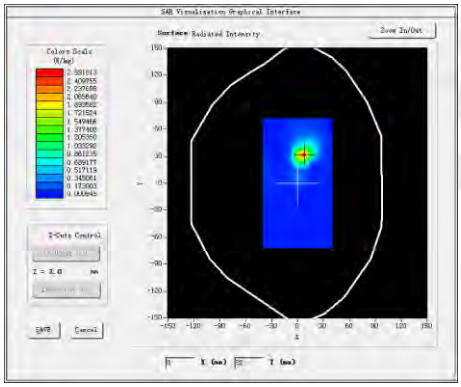
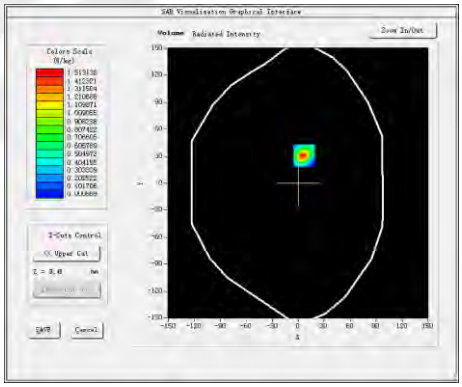
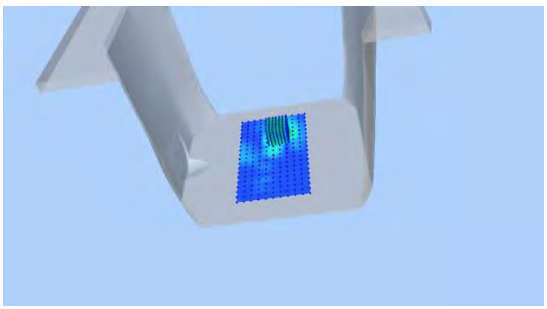
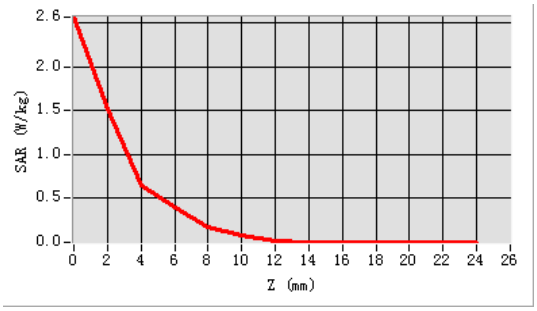
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 5: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-11
Probe	SN 41/18 EPGO334
ConvF	1.92
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	IEEE 802.11a ISM
Antenna	A
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5180
Relative permittivity (real part)	48.77
Conductivity (S/m)	5.26
Variation (%)	0.43

Maximum location: X=7.00, Y=31.00
SAR Peak: 2.74 W/kg

SAR 10g (W/Kg)	0.219490
SAR 1g (W/Kg)	0.787503

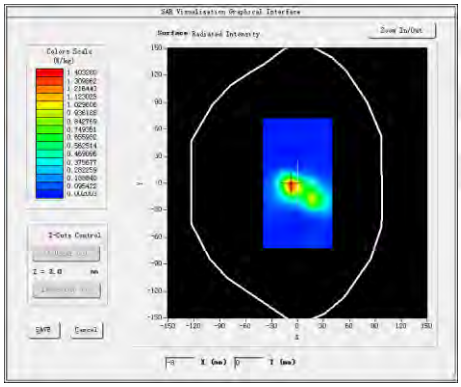
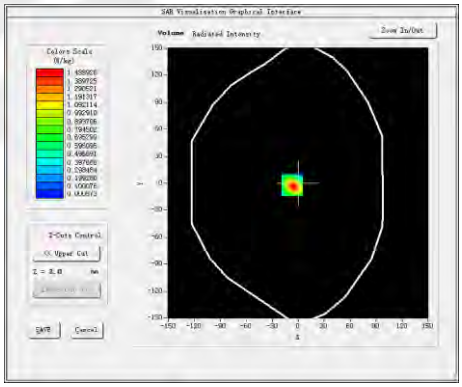
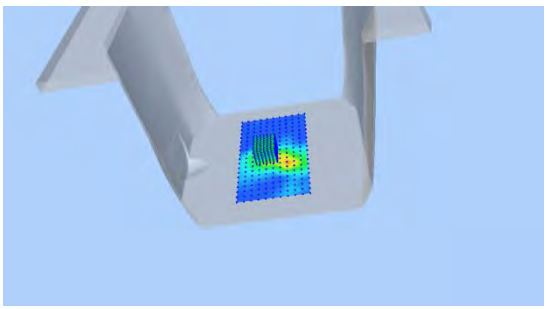
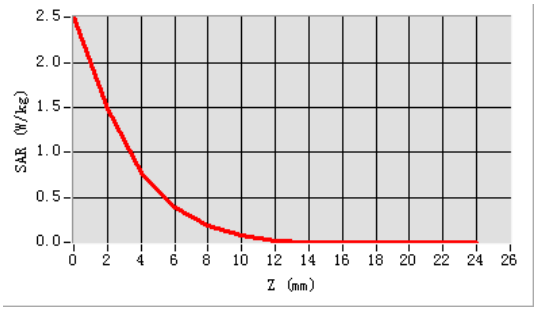
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 6: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-11
Probe	SN 41/18 EPGO334
ConvF	1.92
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	IEEE 802.11a ISM
Antenna	B
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5180
Relative permittivity (real part)	48.77
Conductivity (S/m)	5.26
Variation (%)	-2.14

Maximum location: X=-7.00, Y=-2.00
SAR Peak: 2.71 W/kg

SAR 10g (W/Kg)	0.287756
SAR 1g (W/Kg)	0.840927

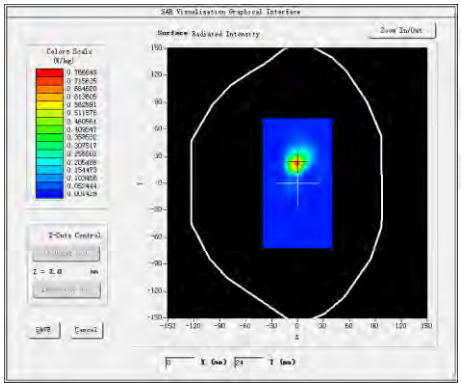
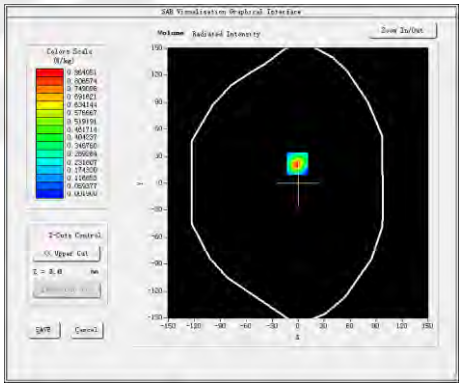
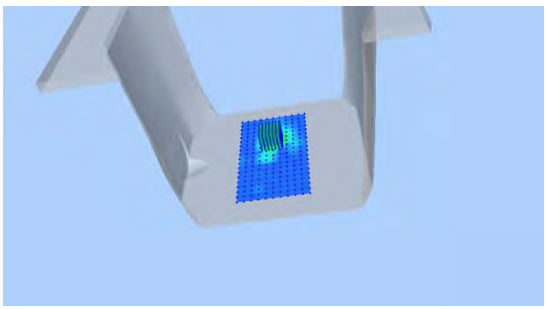
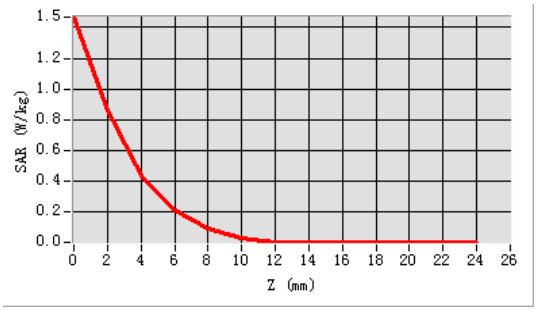
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 7: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-11
Probe	SN 41/18 EPGO334
ConvF	1.92
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back
Band	IEEE 802.11n ISM
Antenna	A
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	5180
Relative permittivity (real part)	48.77
Conductivity (S/m)	5.26
Variation (%)	-1.04

Maximum location: X=-1.00, Y=22.00
SAR Peak: 1.57 W/kg

SAR 10g (W/Kg)	0.126982
SAR 1g (W/Kg)	0.444883

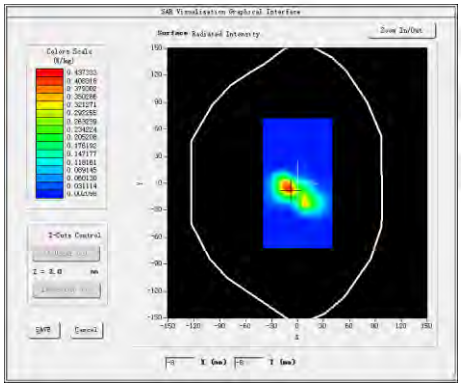
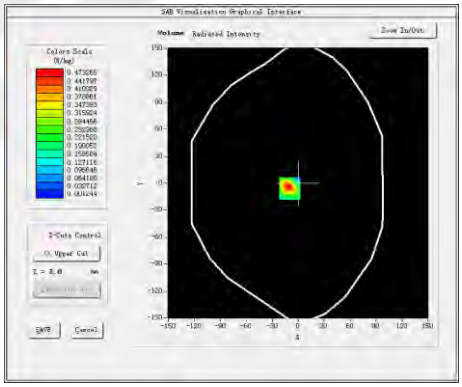
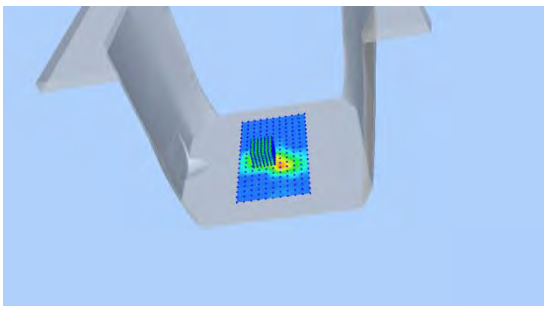
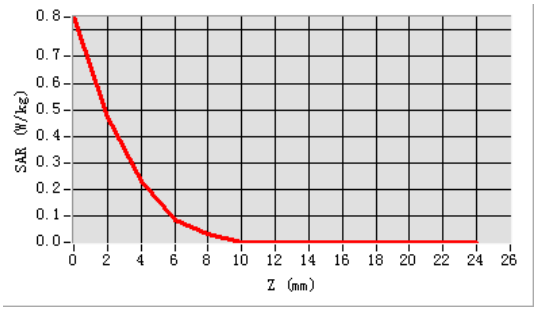
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 8: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-11
Probe	SN 41/18 EPGO334
ConvF	1.92
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11n ISM
Antenna	B
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	5180
Relative permittivity (real part)	48.77
Conductivity (S/m)	5.26
Variation (%)	2.40

Maximum location: X=-10.00, Y=-6.00
SAR Peak: 0.91 W/kg

SAR 10g (W/Kg)	0.089955
SAR 1g (W/Kg)	0.262022

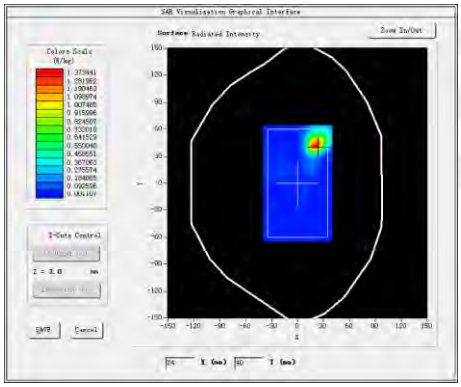
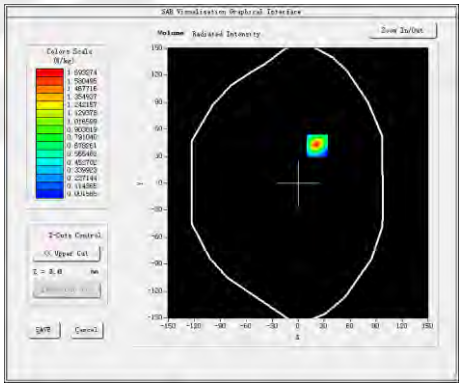
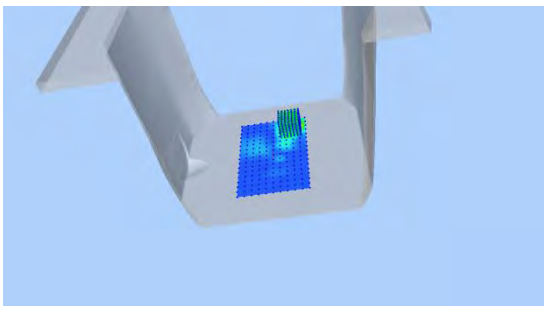
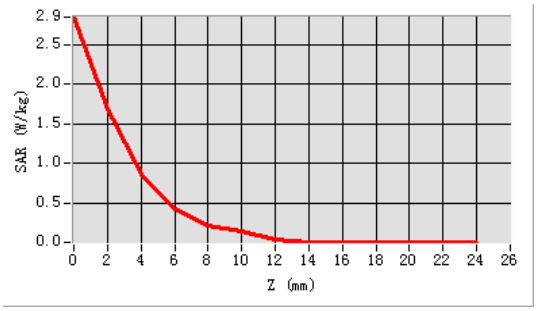
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 9: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-12
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11a ISM
Antenna	A
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5260
Relative permittivity (real part)	48.95
Conductivity (S/m)	5.50
Variation (%)	1.71

Maximum location: X=22.00, Y=42.00
SAR Peak: 3.02 W/kg

SAR 10g (W/Kg)	0.253878
SAR 1g (W/Kg)	0.886337

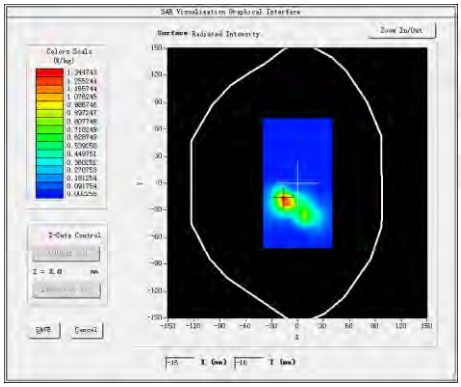
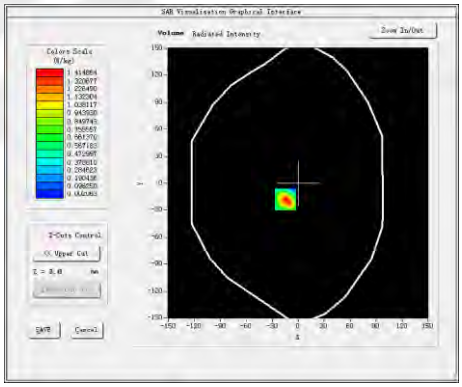
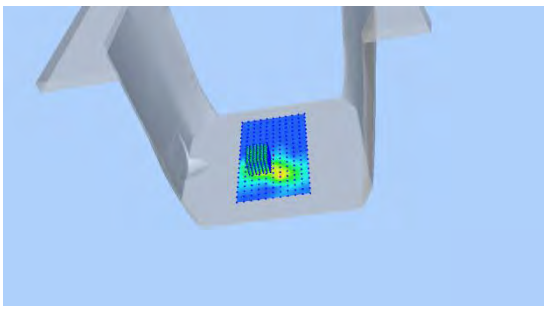
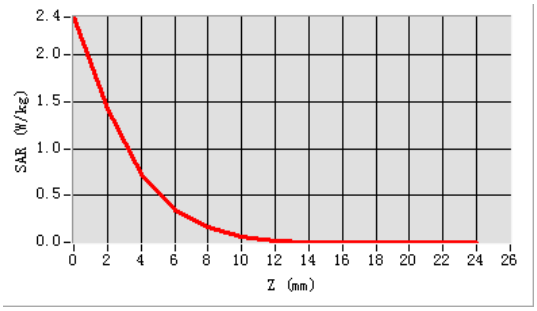
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 10: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-12
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11a ISM
Antenna	B
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5260
Relative permittivity (real part)	48.95
Conductivity (S/m)	5.50
Variation (%)	-3.78

Maximum location: X=-15.00, Y=-18.00
SAR Peak: 2.52 W/kg

SAR 10g (W/Kg)	0.265283
SAR 1g (W/Kg)	0.756021

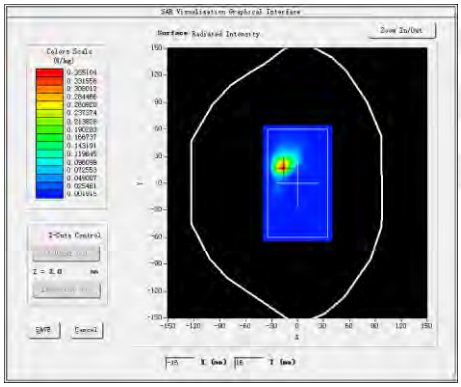
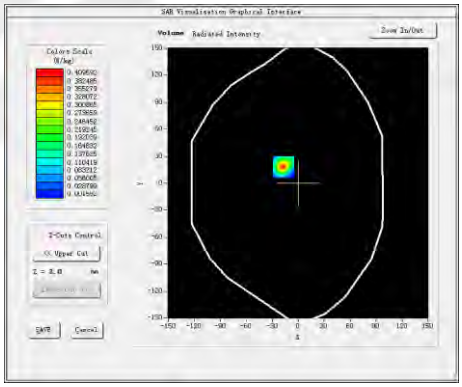
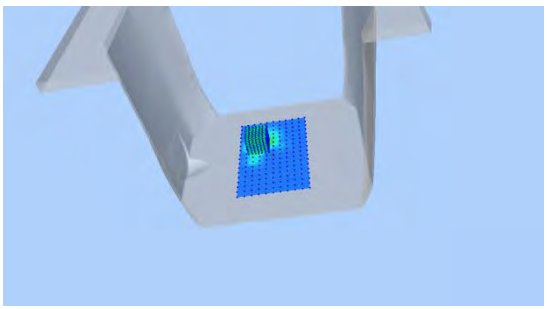
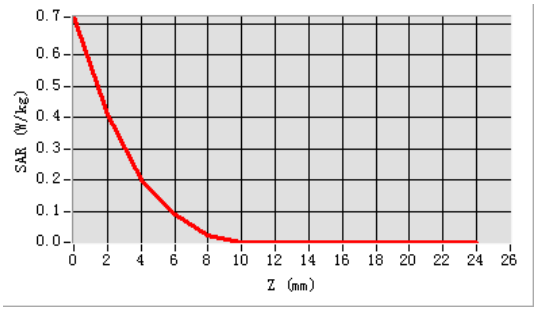
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 11: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-12
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11n ISM
Antenna	A
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	5260
Relative permittivity (real part)	48.95
Conductivity (S/m)	5.50
Variation (%)	2.89

Maximum location: X=-17.00, Y=18.00
SAR Peak: 0.76 W/kg

SAR 10g (W/Kg)	0.056900
SAR 1g (W/Kg)	0.203311

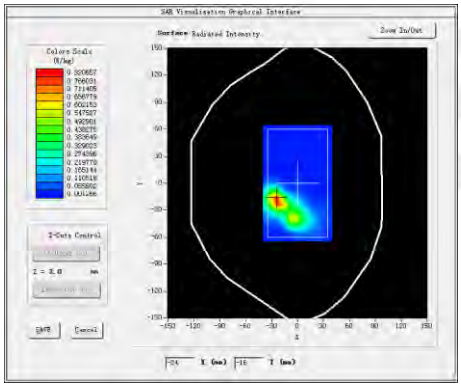
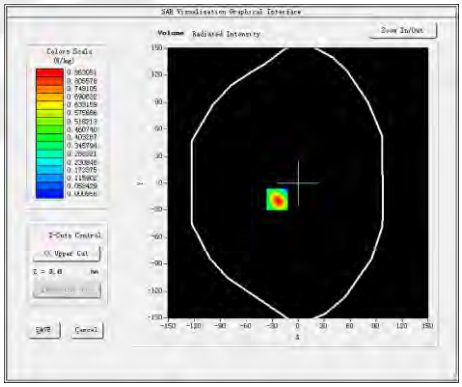
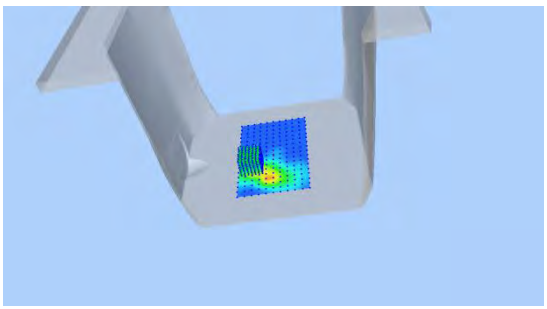
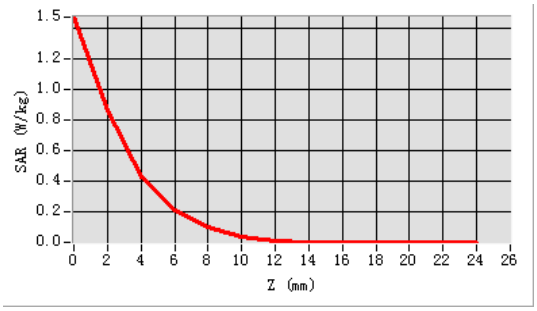
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 12: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-12
Probe	SN 41/18 EPGO334
ConvF	2.12
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11n ISM
Antenna	B
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	5260
Relative permittivity (real part)	48.95
Conductivity (S/m)	5260
Variation (%)	0.11

Maximum location: X=-24.00, Y=-18.00
SAR Peak: 1.57 W/kg

SAR 10g (W/Kg)	0.165102
SAR 1g (W/Kg)	0.482201

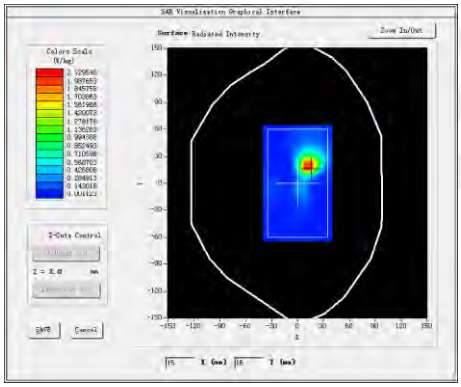
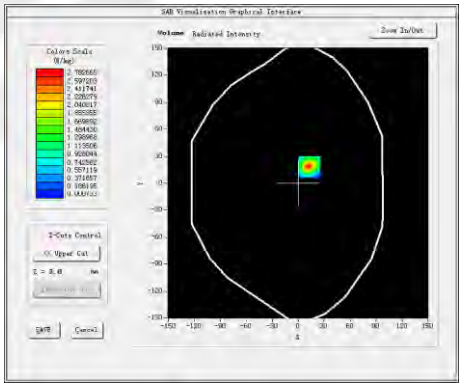
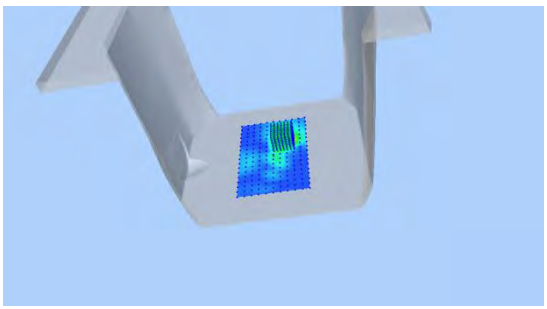
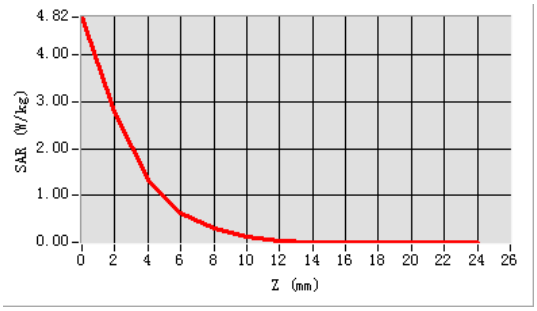
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 13: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-13
Probe	SN 41/18 EPGO334
ConvF	2.21
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11a ISM
Antenna	A
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5580
Relative permittivity (real part)	48.38
Conductivity (S/m)	5.82
Variation (%)	-0.52

Maximum location: X=13.00, Y=18.00
SAR Peak: 5.09 W/kg

SAR 10g (W/Kg)	0.421723
SAR 1g (W/Kg)	1.435551

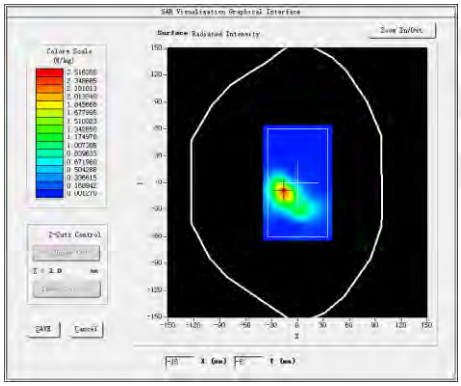
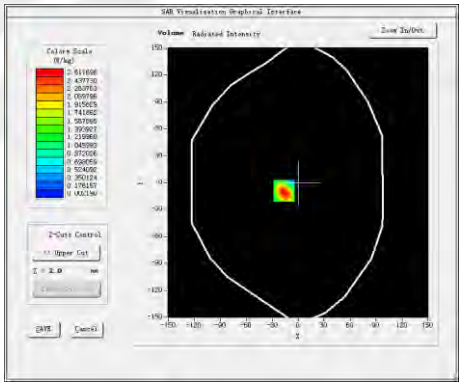
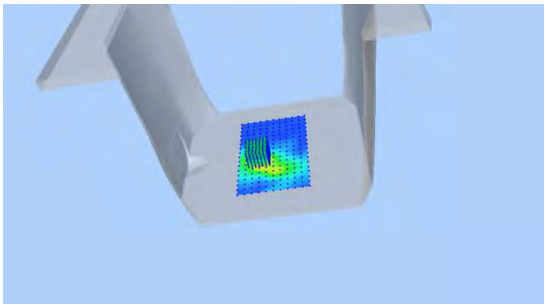
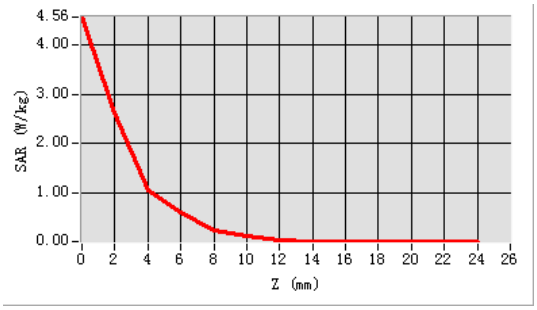
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 14: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-13
Probe	SN 41/18 EPGO334
ConvF	2.21
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11a ISM
Antenna	B
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5580
Relative permittivity (real part)	48.38
Conductivity (S/m)	5.82
Variation (%)	0.70

Maximum location: X=-16.00, Y=-9.00
SAR Peak: 4.82 W/kg

SAR 10g (W/Kg)	0.536067
SAR 1g (W/Kg)	1.421710

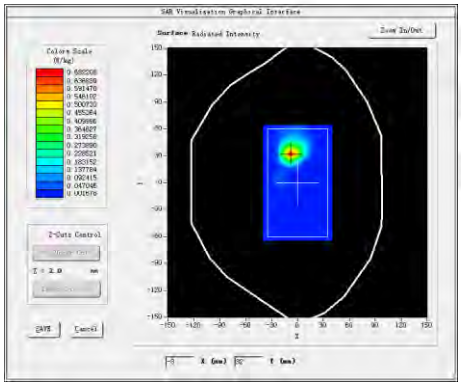
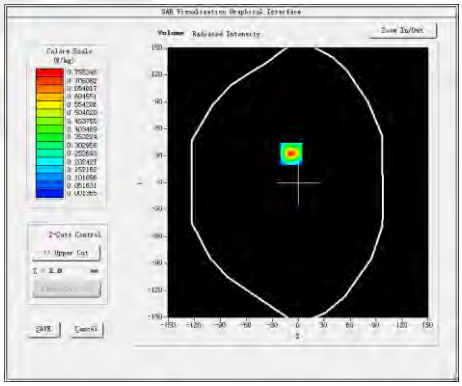
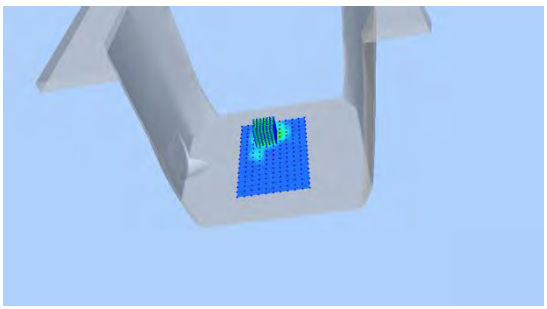
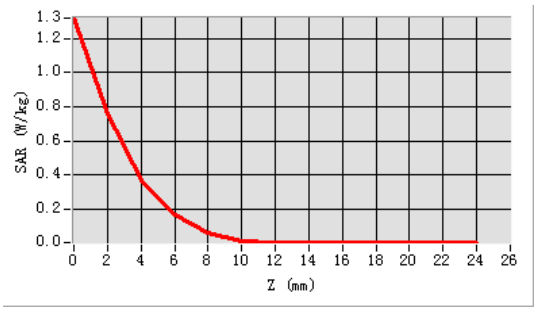
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 15: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-13
Probe	SN 41/18 EPGO334
ConvF	2.21
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11ac ISM
Antenna	A
Signal	IEEE802.ac (Crest factor: 1.0)
Frequency (MHz)	5580
Relative permittivity (real part)	48.38
Conductivity (S/m)	5.82
Variation (%)	3.93

Maximum location: X=-8.00, Y=32.00
SAR Peak: 1.38 W/kg

SAR 10g (W/Kg)	0.120673
SAR 1g (W/Kg)	0.392338

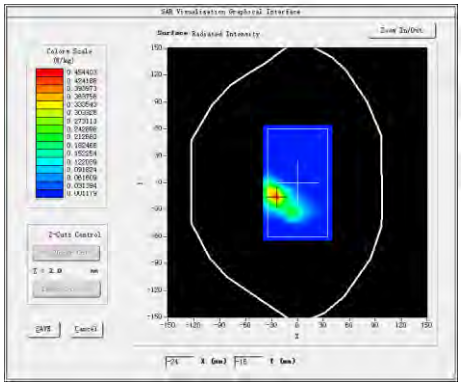
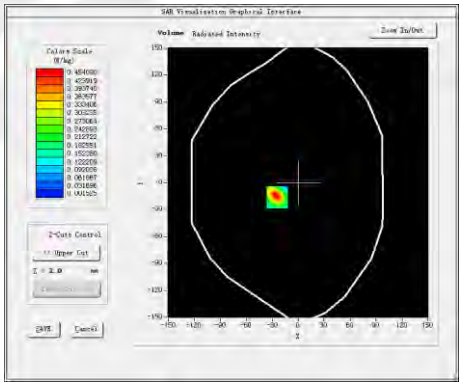
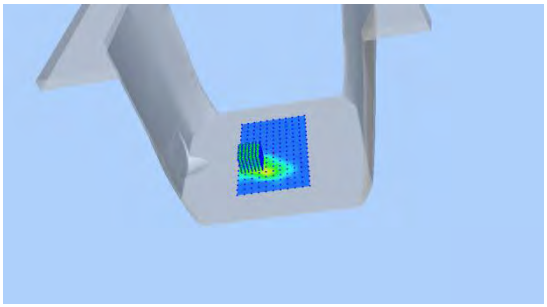
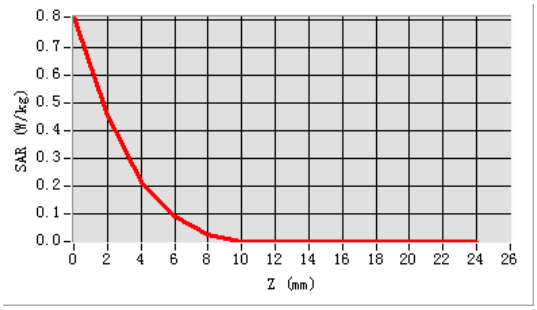
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 16: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-13
Probe	SN 41/18 EPGO334
ConvF	2.21
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11ac ISM
Antenna	B
Signal	IEEE802.ac (Crest factor: 1.0)
Frequency (MHz)	5580
Relative permittivity (real part)	48.38
Conductivity (S/m)	5.82
Variation (%)	1.69

Maximum location: X=-24.00, Y=-16.00
SAR Peak: 0.86 W/kg

SAR 10g (W/Kg)	0.085610
SAR 1g (W/Kg)	0.249218

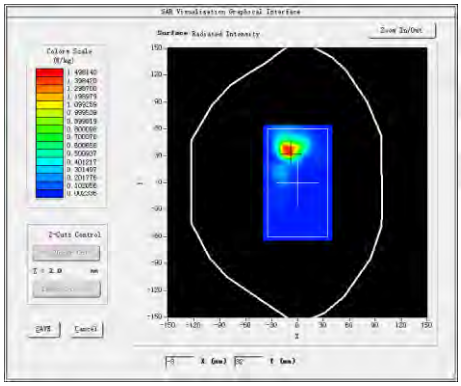
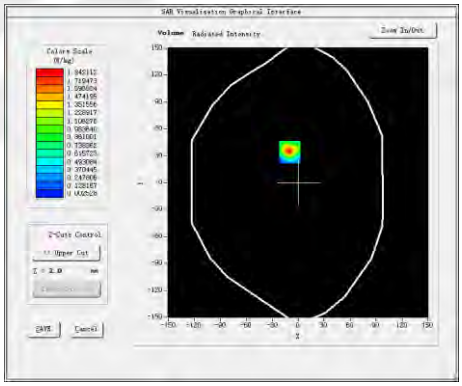
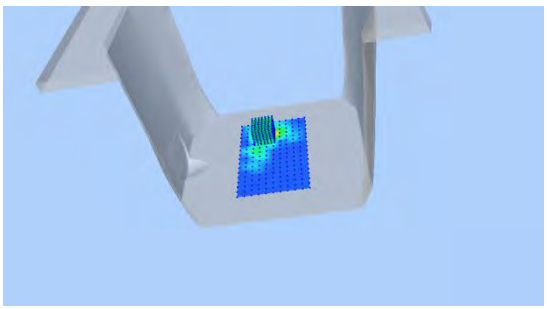
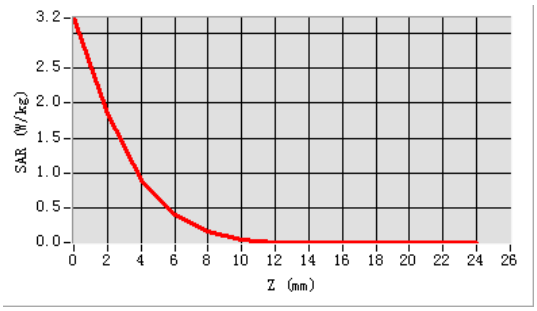
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 17: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-16
Probe	SN 41/18 EPGO334
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11a ISM
Antenna	A
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5745
Relative permittivity (real part)	48.95
Conductivity (S/m)	6.14
Variation (%)	-3.52

Maximum location: X=-10.00, Y=34.00
SAR Peak: 3.49 W/kg

SAR 10g (W/Kg)	0.295755
SAR 1g (W/Kg)	0.969488

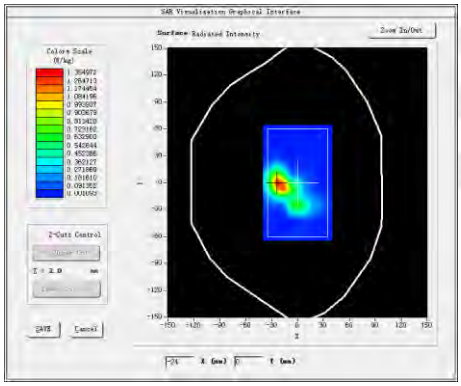
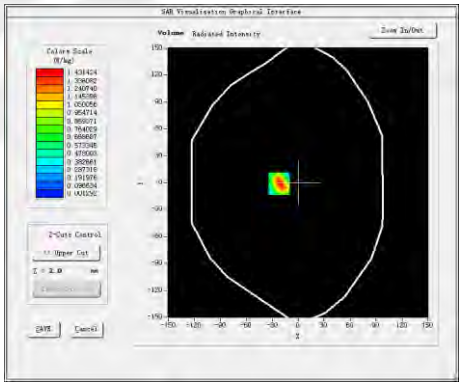
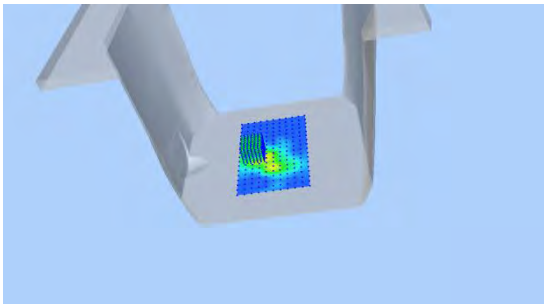
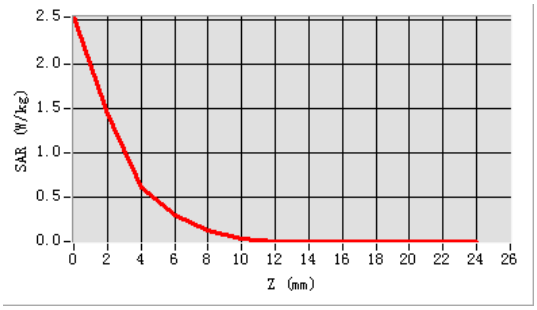
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 18: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-16
Probe	SN 41/18 EPGO334
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11a ISM
Antenna	B
Signal	IEEE802.a (Crest factor: 1.0)
Frequency (MHz)	5785
Relative permittivity (real part)	48.95
Conductivity (S/m)	6.14
Variation (%)	2.93

Maximum location: X=-22.00, Y=-1.00
SAR Peak: 2.73 W/kg

SAR 10g (W/Kg)	0.283251
SAR 1g (W/Kg)	0.792864

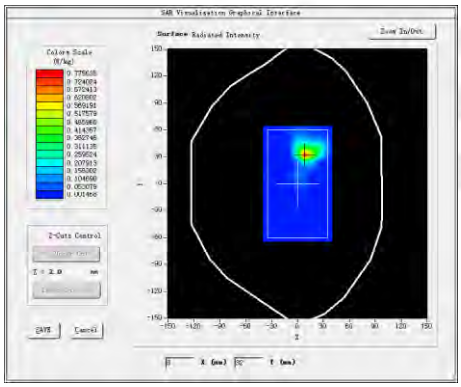
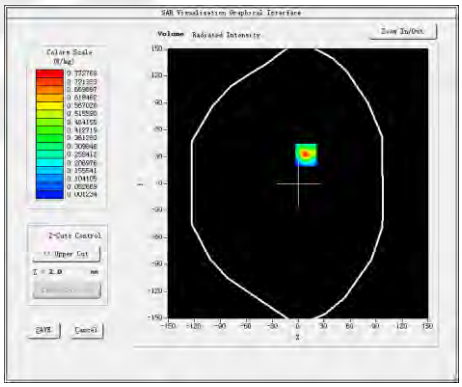
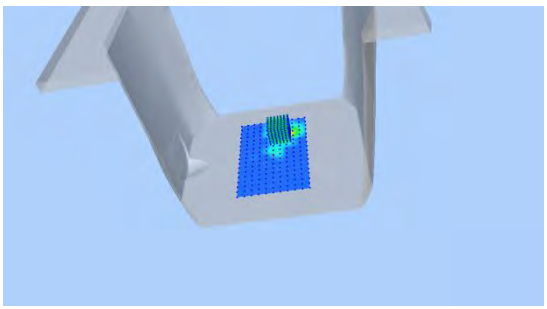
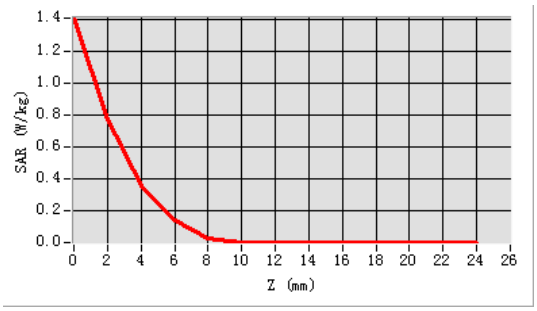
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 19: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-16
Probe	SN 41/18 EPGO334
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11n ISM
Antenna	A
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	5785
Relative permittivity (real part)	48.95
Conductivity (S/m)	6.14
Variation (%)	-1.19

Maximum location: X=9.00, Y=32.00
SAR Peak: 1.49 W/kg

SAR 10g (W/Kg)	0.114684
SAR 1g (W/Kg)	0.391277

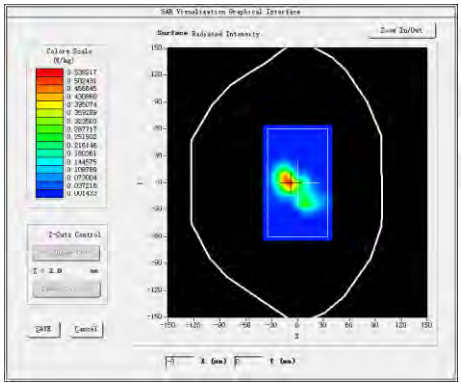
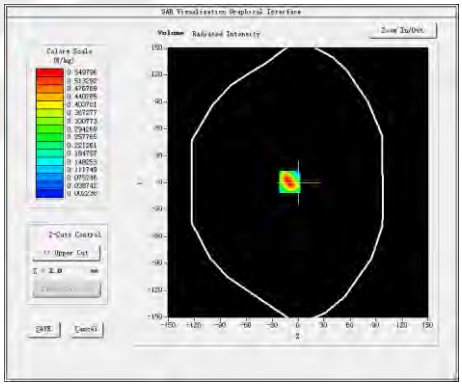
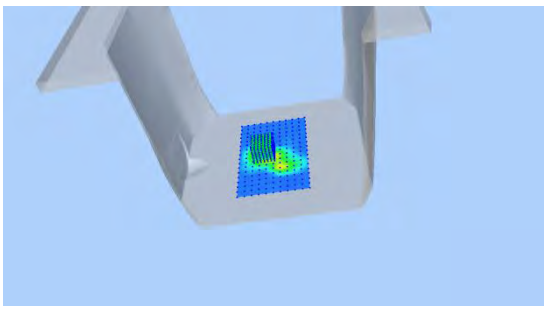
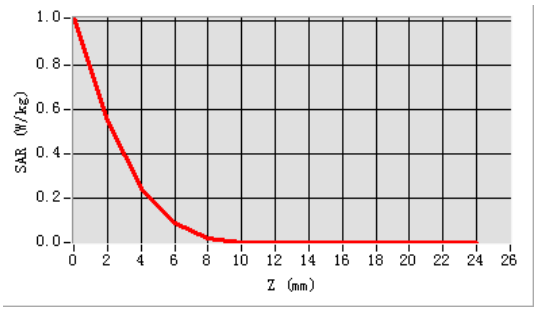
SURFACE SAR	VOLUME SAR
	
3D	**Z Axis Scan**
	

Plot 20: DUT: Rugged Tablet PC; EUT Model: M101P-BH

Test Date	2020-03-16
Probe	SN 41/18 EPGO334
ConvF	2.16
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Back Side
Band	IEEE 802.11n ISM
Antenna	B
Signal	IEEE802.n (Crest factor: 1.0)
Frequency (MHz)	5785
Relative permittivity (real part)	48.95
Conductivity (S/m)	6.14
Variation (%)	2.73

Maximum location: X=-10.00, Y=1.00
SAR Peak: 1.07 W/kg

SAR 10g (W/Kg)	0.109506
SAR 1g (W/Kg)	0.311701

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※※※※※