

SAR Test Report

Report No.: AGC01035180606FH01

FCC ID : 2ANKUSV-PRI

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION : BODY-WORN CAMERA

BRAND NAME : Safety Vision

MODEL NAME : SV-PRIMAELITE64

CLIENT : Safety Vision LLC

DATE OF ISSUE : Aug. 20,2018

STANDARD(S) : IEEE Std. 1528:2013
FCC 47CFR § 2.1093
IEEE/ANSI C95.1:2005;

REPORT VERSION : V1.0

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

CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 20,2018	Valid	Initial Release

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Test Report

Applicant Name	Safety Vision LLC
Applicant Address	6100 West Sam Houston Parkway North Houston, Texas 77041-5113, USA
Manufacturer Name	Safety Vision LLC
Manufacturer Address	6100 West Sam Houston Parkway North Houston, Texas 77041-5113, USA
Product Designation	BODY-WORN CAMERA
Brand Name	Safety Vision
Model Name	SV-PRIMAELITE64
EUT Voltage	DC3.7V by battery
Applicable Standard	IEEE Std. 1528:2013 FCC 47CFR § 2.1093 IEEE/ANSI C95.1:2005
Test Date	Aug. 03,2018 to Aug. 04,2018
Report Template	AGCRT-US-5G/SAR (2018-01-01)

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

Eric Zhou

Tested By

Eric Zhou(Zhou Yongkang)

Aug. 04,2018

Angela Li

Checked By

Angela Li(Li Jiao)

Aug. 20,2018

Forrest Lei

Authorized By

Forrest Lei(Lei Yonggang)
Authorized Officer

Aug. 20,2018

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

TABLE OF CONTENTS

1. SUMMARY OF MAXIMUM SAR VALUE	5
2. GENERAL INFORMATION.....	6
2.1. EUT DESCRIPTION.....	6
3. SAR MEASUREMENT SYSTEM.....	7
3.1. THE SATIMO SYSTEM USED FOR PERFORMING COMPLIANCE TESTS CONSISTS OF FOLLOWING ITEMS	7
3.2. COMOSAR E-FIELD PROBE	8
3.3. ROBOT.....	8
3.4. VIDEO POSITIONING SYSTEM	9
3.5. DEVICE HOLDER	9
3.6. SAM TWIN PHANTOM.....	10
4. SAR MEASUREMENT PROCEDURE.....	11
4.1. SPECIFIC ABSORPTION RATE (SAR).....	11
4.2. SAR MEASUREMENT PROCEDURE	12
4.3. RF EXPOSURE CONDITIONS	14
5. TISSUE SIMULATING LIQUID.....	15
5.1. THE COMPOSITION OF THE TISSUE SIMULATING LIQUID.....	15
5.2. TISSUE DIELECTRIC PARAMETERS FOR HEAD AND BODY PHANTOMS	15
5.3. TISSUE CALIBRATION RESULT	16
6. SAR SYSTEM CHECK PROCEDURE	17
6.1. SAR SYSTEM CHECK PROCEDURES	17
6.2. SAR SYSTEM CHECK.....	18
7. EUT TEST POSITION.....	20
7.1. TEST POSITION.....	20
8. SAR EXPOSURE LIMITS	21
9. TEST FACILITY	22
10. TEST EQUIPMENT LIST	23
11. MEASUREMENT UNCERTAINTY	24
12. CONDUCTED POWER MEASUREMENT.....	27
13. TEST RESULTS.....	28
13.1. SAR TEST RESULTS SUMMARY.....	28
APPENDIX A. SAR SYSTEM CHECK DATA	31
APPENDIX B. SAR MEASUREMENT DATA.....	39
APPENDIX C. TEST SETUP PHOTOGRAPHS.....	47
APPENDIX D. CALIBRATION DATA	49

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

1. SUMMARY OF MAXIMUM SAR VALUE

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

Frequency Band	Highest Reported 1g-SAR(W/Kg)		SAR Test Limit (W/Kg)
	Body-worn(with 0mm separation)		
	Head Liquid	Body Liquid	
2.4 GHz WIFI	0.086	0.091	1.6
5.8 GHz WIFI	0.082	0.120	
SAR Test Result	PASS		

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

- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 648474 D04 Handset SAR v01r03
- KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r04
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	BODY-WORN CAMERA
Test Model	SV-PRIMAEELITE64
Hardware Version	V1.0
Software Version	V1.0
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
2.4GHz WIFI	
WIFI Specification	<input type="checkbox"/> 802.11a <input checked="" type="checkbox"/> 802.11b <input checked="" type="checkbox"/> 802.11g <input checked="" type="checkbox"/> 802.11n(20) <input type="checkbox"/> 802.11n(40)
Operation Frequency	2.412 GHz~2.462GHz
EIRP	11b:14.03dBm,11g:12.91dBm,11n(20):12.84dBm
Antenna Gain	3dBi
5.8GHz WIFI	
WIFI Specification	<input checked="" type="checkbox"/> 802.11a <input checked="" type="checkbox"/> 802.11n20 <input checked="" type="checkbox"/> 802.11ac20 <input checked="" type="checkbox"/> 802.11n40 <input checked="" type="checkbox"/> 802.11ac40 <input checked="" type="checkbox"/> 802.11ac80
Operation Frequency	5.725 GHz~5.825GHz
Type of modulation	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM,OFDM
EIRP	802.11a20:12.45dBm; 802.11n20:11.72dBm; 802.11n40:10.85dBm 802.11ac20:11.27dBm; 802.11ac40:9.82dBm; 802.11ac80:9.06dBm
Antenna Gain	3dBi
Power Supply	DC 3.7V by battery or DC 5V by charging box with adapter

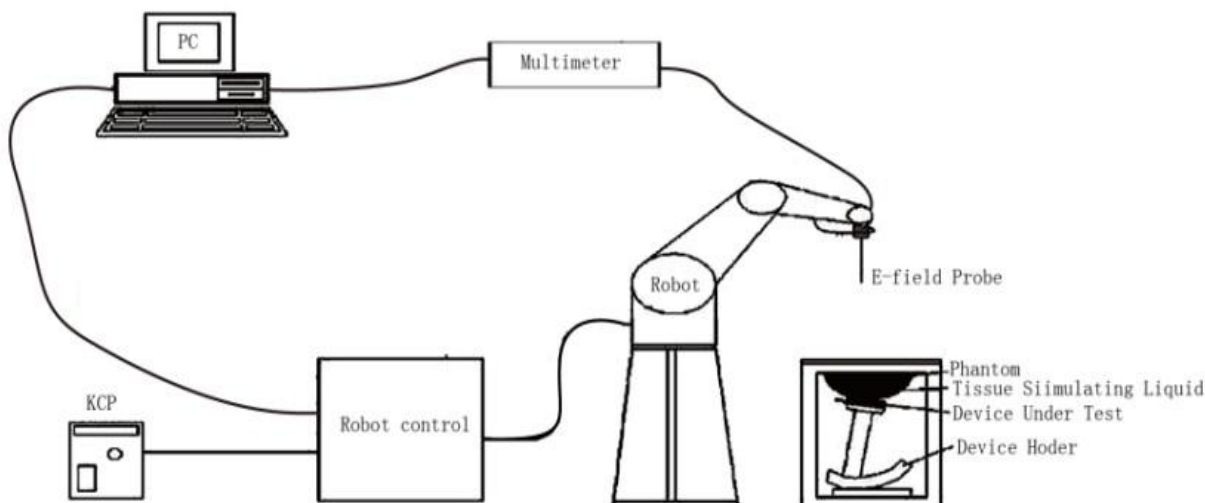
Note: The sample used for testing is end product.

Product	Type
	<input checked="" type="checkbox"/> Production unit <input type="checkbox"/> Identical Prototype

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

3. SAR MEASUREMENT SYSTEM

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



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


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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

3.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g. IEEE1528 etc.) Under ISO17025. The calibration data are in Appendix D.

Isotropic E-Field Probe Specification

Model	SSE2	
Manufacture	MVG	
Identification No.	SN 08/16 EPGO282	
Frequency	0.7GHz-6GHz Linearity:±0.06dB(700MHz-6GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity:±0.06dB	
Dimensions	Overall length:330mm Length of individual dipoles:2mm Maximum external diameter:8mm Probe Tip external diameter:2.5mm Distance between dipoles/ probe extremity:1mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

3.3. Robot

The COMOSAR system uses the KUKA robot from SATIMO SA (France). For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used.

The XL robot series have many features that are important for our application:

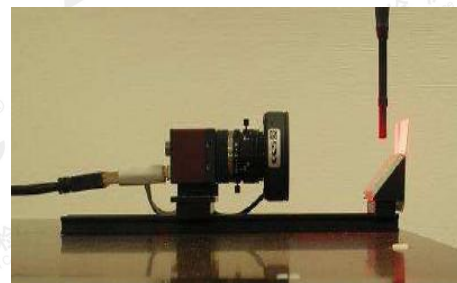
- ☐ High precision (repeatability 0.02 mm)
- ☐ High reliability (industrial design)
- ☐ Jerk-free straight movements
- ☐ Low ELF interference (the closed metallic construction shields against motor control fields)
- ☐ 6-axis controller



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

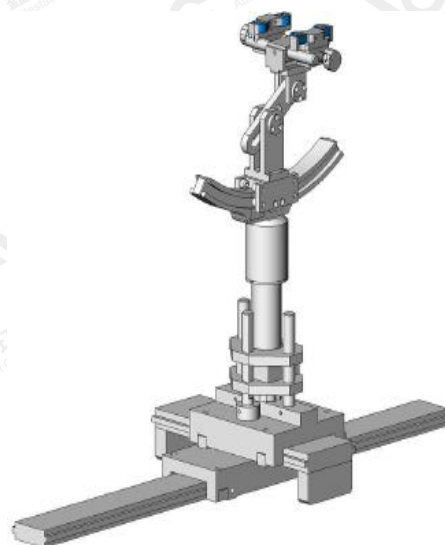
3.4. Video Positioning System

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



3.5. Device Holder

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



3.6. SAM Twin Phantom

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

- ☐ Left head
- ☐ Right head
- ☐ Flat phantom



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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

4. SAR MEASUREMENT PROCEDURE

4.1. Specific Absorption Rate (SAR)

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

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

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

SAR is expressed in units of Watts per kilogram (W/Kg)

SAR can be obtained using either of the following equations:

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

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

Where

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

4.2. SAR Measurement Procedure

Step 1: Power Reference Measurement

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

Step 2: Area Scan

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

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

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

Step 3: Zoom Scan

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

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

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

Step 4: Power Drift Measurement

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

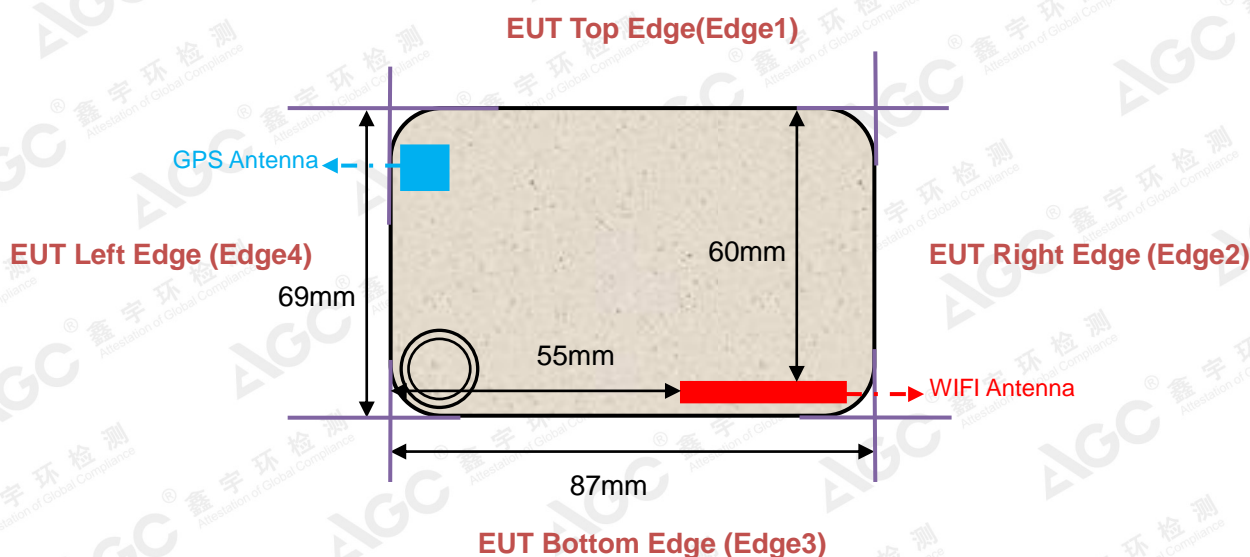
4.3. RF Exposure Conditions

Test Configuration and setting:

The device is a police portable BWC equipment, which support 2.4GHz & 5.8G Wifi.

For SAR testing, the EUT is configured with the WLAN continuous TX tool through software.

Antenna Location: (the front view)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

5. TISSUE SIMULATING LIQUID

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15cm. For head SAR testing the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in 5.2

5.1. The composition of the tissue simulating liquid

Frequency (MHz)	Ingredient (% Weight)	Water	NaCl	Polysorbate 20	DGBE	1,2- Propanediol	Triton X-100	Diethylen glycol monohex ylether
2450 Head		71.88	0.16	0.0	7.99	0.0	19.97	0.0
2450 Body		70	1	0.0	9	0.0	20	0.0
5000 Head		65.52	0.0	0.0	0.0	0.0	17.24	17.24
5000 Body		80	0.0	0.0	10	0.0	10	0.0

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE 1528 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 IEEE 1528 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 IEEE 1528.

Target Frequency (MHz)	head		body	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
300	45.3	0.87	45.3	0.87
450	43.5	0.87	43.5	0.87
835	41.5	0.90	41.5	0.90
900	41.5	0.97	41.5	0.97
1450	40.5	1.20	40.5	1.20
1800 – 2000	40.0	1.40	40.0	1.40
2450	39.2	1.80	39.2	1.80
3000	38.5	2.40	38.5	2.40
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5600	35.5	5.07	48.5	5.77
5800	35.3	5.27	48.2	6.00

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

5.3. Tissue Calibration Result

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

Tissue Stimulant Measurement for 2450MHz					
	Fr. (MHz)	Dielectric Parameters ($\pm 5\%$)		Tissue Temp [°C]	Test time
		ϵ_r	$\delta[s/m]$		
Head		39.2(37.24-41.16)	1.80(1.71-1.89)	21.3	Aug. 03,2018
	2412	40.01	1.75		
	2437	39.43	1.78		
	2450	38.81	1.82		
	2462	38.19	1.84		
Tissue Stimulant Measurement for 2450MHz					
	Fr. (MHz)	Dielectric Parameters ($\pm 5\%$)		Tissue Temp [°C]	Test time
		ϵ_r	$\delta[s/m]$		
Body		52.7(50.065-55.335)	1.95(1.8525-2.0475)	21.5	Aug. 03,2018
	2412	54.06	1.88		
	2437	53.47	1.90		
	2450	52.94	1.92		
	2462	52.25	1.95		

Tissue Stimulant Measurement for 5800MHz					
	Fr. (MHz)	Dielectric Parameters ($\pm 5\%$)		Tissue Temp [°C]	Test time
		ϵ_r	$\delta[s/m]$		
Head		35.3(33.535-37.065)	5.27(5.0065-5.5335)	21.3	Aug. 04,2018
	5745	36.35	5.12		
	5785	36.18	5.20		
	5800	35.62	5.25		
	5825	35.07	5.31		
Tissue Stimulant Measurement for 5800MHz					
	Fr. (MHz)	Dielectric Parameters ($\pm 5\%$)		Tissue Temp [°C]	Test time
		ϵ_r	$\delta[s/m]$		
Body		48.2 (45.79-50.610)	6.00 (5.70-6.30)	21.5	Aug. 04,2018
	5745	49.71	5.86		
	5785	49.53	5.95		
	5800	48.96	6.01		
	5825	48.22	6.08		

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

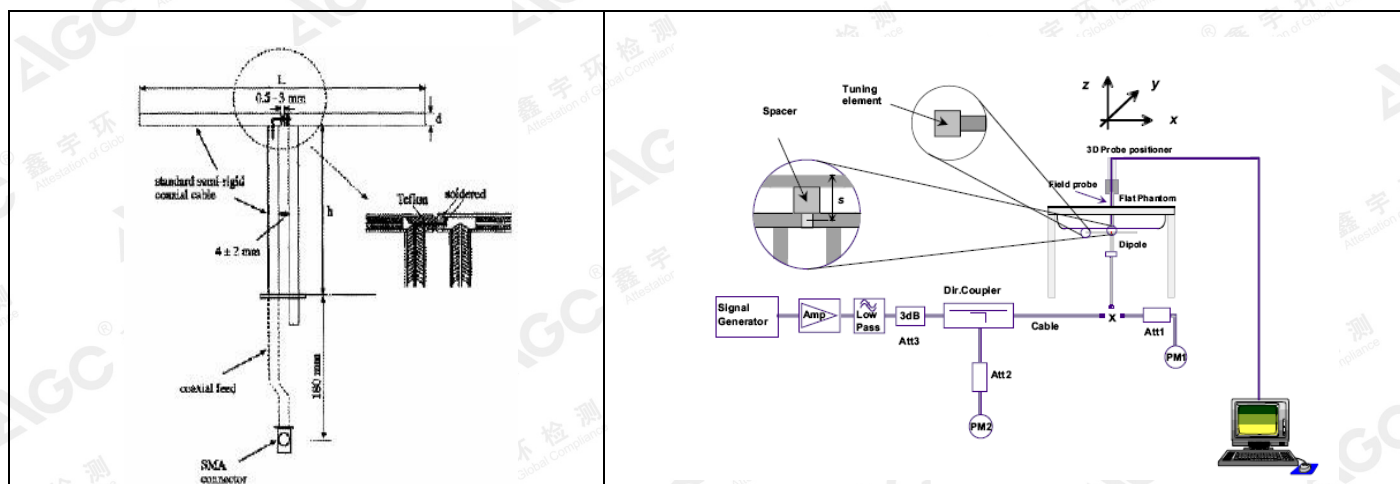
6. SAR SYSTEM CHECK PROCEDURE

6.1. SAR System Check Procedures

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

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

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



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

6.2. SAR System Check

6.2.1. Dipoles

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

Frequency	L (mm)	h (mm)	d (mm)
2450MHz	51.5	30.4	3.6

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

6.2.2. System Check Result

System Performance Check at 2450MHz &5000MHz for Head								
Validation Kit:SN29/15 DIP 2G450-393 &SN 15/15 WGA 36								
Frequency [MHz]	Target Value(W/Kg)		Reference Result ($\pm 10\%$)		Normalized to 1W(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
2450	54.53	24.30	49.077-59.983	21.87-26.73	51.62	23.22	21.3	Aug. 03,2018
5800	180.38	61.46	162.342-198.418	55.314-67.606	173.04	59.93	21.3	Aug. 04,2018
System Performance Check at 2450MHz &5000MHz for Body								
Frequency [MHz]	Target Value(W/Kg)		Reference Result ($\pm 10\%$)		Normalized to 1W(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
2450	49.92	23.16	44.928-54.912	20.844-25.476	47.92	21.07	21.5	Aug. 03,2018
5800	176.30	61.30	158.67-193.93	55.17-67.43	175.22	60.88	21.5	Aug. 04,2018

Note:

(1) We use a CW signal of 18dBm(2.4GHz),15dBm(5.8GHz) for system check, and then all SAR values are normalized to 1W forward power. The result must be within $\pm 10\%$ of target value.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

7. EUT TEST POSITION

This EUT was tested in **Body back**

7.1. Test Position

- (1) To position the EUT parallel to the phantom surface.
- (2) To adjust the EUT parallel to the flat phantom.
- (3) To adjust the distance between the EUT surface and the flat phantom to **0mm**.

The SAR test procedure has been defined by FCC via KDB.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

8. SAR EXPOSURE LIMITS

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

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

9. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2F., Bldg.2, No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District B112-B113, Shenzhen 518012
NVLAP Lab Code	600153-0
Designation Number	CN5028
Test Firm Registration Number	682566
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by National Voluntary Laboratory Accreditation program, NVLAP Code 600153-0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

10. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Current calibration date	Next calibration date
SAR Probe	MVG	SN 08/16 EPGO282	Aug. 08,2017	Aug. 07,2018
Phantom	SATIMO	SN_4511_SAM90	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	-	Validated. No cal required.	Validated. No cal required.
Multimeter	Keithley 2000	1188656	Mar. 01,2018	Feb. 28,2019
Dipole	SATIMO SID2450	SN29/15 DIP 2G450-393	Jul. 05,2016	Jul. 04,2019
Wave guide	SWG5500	SN 15/15 WGA 36	Jul. 05,2016	Jul. 04,2019
Signal Generator	Agilent-E4438C	US41461365	Mar. 01,2018	Feb. 28,2019
Vector Analyzer	Agilent / E4440A	US41421290	Mar. 01,2018	Feb. 28,2019
Network Analyzer	Rhode & Schwarz ZVL6	SN100132	Mar. 01,2018	Feb. 28,2019
Attenuator	Warison /WATT-6SR1211	N/A	N/A	N/A
Attenuator	Mini-circuits / VAT-10+	N/A	N/A	N/A
Amplifier	EM30180	SN060552	Mar. 01,2018	Feb. 28,2019
Directional Couple	Werlatone/ C5571-10	SN99463	Jun. 12,2018	Jun. 11,2019
Directional Couple	Werlatone/ C6026-10	SN99482	Jun. 12,2018	Jun. 11,2019
Power Sensor	NRP-Z21	1137.6000.02	Oct. 12,2017	Oct. 11,2018
Power Sensor	NRP-Z23	US38261498	Mar. 01,2018	Feb. 28,2019
Power Viewer	R&S	V2.3.1.0	N/A	N/A

Note: Per KDB 865664 Dipole SAR Validation, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

11. MEASUREMENT UNCERTAINTY

Measurement uncertainty for Dipole averaged over 1 gram / 10 gram.									
a	b	c	d	e f(d,k)	f	g	h cxf/e	i cxg/e	k
Uncertainty Component	Sec.	Tol (± %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (±%)	10g Ui (±%)	vi
Measurement System									
Probe calibration	E.2.1	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	0.695	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.28	0.28	∞
Hemispherical Isotropy	E.2.2	1.045	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.43	0.43	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	0.685	R	$\sqrt{3}$	1	1	0.40	0.40	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E.2.5	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related									
Test sample positioning	E.4.2	2.6	N	1	1	1	2.6	2.6	∞
Device holder uncertainty	E.4.1	3	N	1	1	1	3	3	∞
Output power variation—SAR drift measurement	E.2.9	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	E.6.5	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				9.79	9.59	
Expanded Uncertainty (95% Confidence interval)			K=2				19.58	19.18	

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

System check uncertainty for Dipole averaged over 1 gram / 10 gram.									
a	b	c	d	^e f(d,k)	f	g	^h cx _f /e	ⁱ cx _g /e	k
Uncertainty Component	Sec.	Tol (± %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g U _i (±%)	10g U _i (±%)	v _i
Measurement System									
Probe calibration drift	E.2.1.3	0.5	N	1	1	1	0.50	0.50	∞
Axial Isotropy	E.2.2	0.695	R	√3	0	0	0.00	0.00	∞
Hemispherical Isotropy	E.2.2	1.045	R	√3	0	0	0.00	0.00	∞
Boundary effect	E.2.3	1.0	R	√3	0	0	0.00	0.00	∞
Linearity	E.2.4	0.685	R	√3	0	0	0.00	0.00	∞
System detection limits	E.2.4	1.0	R	√3	0	0	0.00	0.00	∞
Modulation response	E.2.5	3.0	R	√3	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	0	0	0.00	0.00	∞
Response Time	E.2.7	0	R	√3	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	√3	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	√3	0	0	0.00	0.00	∞
RF ambient conditions-reflections	E.6.1	3.0	R	√3	0	0	0.00	0.00	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	√3	0	0	0.00	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	2	N	1	1	1	2	2	∞
Input power and SAR drift measurement	8,6.6.4	5	R	√3	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2	R	√3	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	√3	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	√3	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				5.564	5.205	
Expanded Uncertainty (95% Confidence interval)			K=2				11.128	10.410	

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

System Validation uncertainty for Dipole averaged over 1 gram / 10 gram.									
a	b	c	d	^e f(d,k)	f	g	^h cx _f /e	ⁱ cx _g /e	k
Uncertainty Component	Sec.	Tol (±%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g U _i (±%)	10g U _i (±%)	v _i
Measurement System									
Probe calibration	E.2.1	5.831	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	0.695	R	√3	1	1	0.40	0.40	∞
Hemispherical Isotropy	E.2.2	1.045	R	√3	0	0	0.00	0.00	∞
Boundary effect	E.2.3	1.0	R	√3	1	1	0.58	0.58	∞
Linearity	E.2.4	0.685	R	√3	1	1	0.40	0.40	∞
System detection limits	E.2.4	1.0	R	√3	1	1	0.58	0.58	∞
Modulation response	E.2.5	3.0	R	√3	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0.0	R	√3	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	√3	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	√3	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	√3	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	√3	1	1	1.33	1.33	∞
System check source (dipole)									
Deviation of experimental dipole from numerical dipole	E.6.4	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	8,6.6.4	5.0	R	√3	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2.0	R	√3	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4.0	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4.0	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity measurement	E.3.3	5.0	N	1	0.23	0.26	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	√3	0.78	0.71	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	R	√3	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty			RSS				9.718	9.517	
Expanded Uncertainty (95% Confidence interval)			K=2				19.437	19.035	

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

12. CONDUCTED POWER MEASUREMENT

2.4GHz WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Average Power (dBm)
802.11b	1	1	2412	14.03
		6	2437	13.96
		11	2462	13.64
802.11g	6	1	2412	12.76
		6	2437	12.91
		11	2462	12.59
802.11n20	6.5	1	2412	12.06
		6	2437	12.71
		11	2462	12.84

5GHz WIFI

Band	Mode	Channel	Frequency (MHz)	EIRP (dBm)
5800	802.11a	149	5745	12.45
		153	5765	12.33
		157	5785	12.31
		161	5805	12.28
		165	5825	12.44
	802.11n20	149	5745	11.53
		153	5765	11.42
		157	5785	11.48
		161	5805	11.39
		165	5825	11.72
	802.11n40	151	5755	10.85
		159	5795	10.36
	802.11ac20	149	5745	11.27
		153	5765	11.12
		157	5785	11.09
		161	5805	11.03
	802.11ac40	165	5825	10.84
		151	5755	9.17
		159	5795	9.82
	802.11ac80	155	5775	9.06

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

13. TEST RESULTS

13.1. SAR Test Results Summary

13.1.1. Test position and configuration

1. The EUT is a police portable BWC equipment.
2. According to FCC PAG, Lab use the head liquid with a separation of 0mm at flat phantom to test, and use the body liquid with a separation of 0mm at flat phantom to test;
3. For SAR testing, the device was controlled by software to test at reference fixed frequency points.

13.1.2. Operation Mode

1. Per KDB 447498 D01 v06 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
2. Per KDB 865664 D01 v01r04,for each frequency band, if the measured SAR is ≥ 0.8 W/Kg, testing for repeated SAR measurement is required , that the highest measured SAR is only to be tested. When the SAR results are near the limit, the following procedures are required for each device to verify these types of SAR measurement related variation concerns by repeating the highest measured SAR configuration in each frequency band.
 - (1) When the original highest measured SAR is ≥ 0.8 W/Kg, repeat that measurement once.
 - (2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is >1.20 or when the original or repeated measurement is ≥ 1.45 W/Kg.
 - (3) Perform a third repeated measurement only if the original, first and second repeated measurement is ≥ 1.5 W/Kg and ratio of largest to smallest SAR for the original, first and second measurement is ≥ 1.20 .
3. Per KDB 248227 D01 v02r02 Chapter 5.2.2,when SAR measurement is required for 2.4GHz 802.11g/n OFDM configurations, the measurement and test reducing procedures for OFDM are applied. SAR is not required for the following 2.4 GHz OFDM conditions.
 - (1) When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
 - (2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/Kg,
4. Per KDB 248227 D01 v02r02 Chapter 5.3.4, SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, the procedures in 5.3.2 are applied to determine the test configuration. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.
 - (1) When SAR test exclusion provisions of KDB Publication 447498 D01 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
 - (2) When the highest reported SAR for the initial test configuration (when applicable, include subsequent

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is $\leq 1.2 \text{ W/kg}$, SAR is not required for that subsequent test configuration.

- (3) When the specified maximum output power is same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the report SAR for UNII 2A is $< 1.2 \text{ W/Kg}$, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- (4) When the specified maximum output power different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is $\leq 1.2 \text{ W/Kg}$, testing for the band with the lower specified output power is not required; otherwise test is remaining separately for SAR;
5. Maximum Scaling SAR in order to calculate the Maximum SAR values to test under the standard Peak Power, Calculation method is as follows:
Maximum Scaling SAR = tested SAR (Max.) \times [maximum turn-up power (mw)/ maximum measurement output power(mw)]

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

13.1.3. SAR Test Results Summary

SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 64.9				
Product: BODY-WORN CAMERA									
Test Mode: 2.4GHz 802.11b									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit W/kg
Head Lipuid									
Body Back	DTS	1	2412	0.02	0.077	14.50	14.03	0.086	1.6
Body Lipuid									
Body Back	DTS	1	2412	0.05	0.082	14.50	14.03	0.091	1.6

Note:

- When the 1-g SAR is $\leq 0.8\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table is 0mm.

SAR MEASUREMENT								
Depth of Liquid (cm):>15					Relative Humidity (%): 60.7			
Product: BODY-WORN CAMERA								
Test Mode: 5.8GHz 802.11a20								
Position	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (1g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
Head Lipuid								
Body Back	149	5745	0.07	0.081	12.50	12.45	0.082	1.6
Body Lipuid								
Body Back	149	5745	0.10	0.119	12.50	12.45	0.120	1.6

Note:

- When the 1-g SAR is $\leq 0.8\text{W/kg}$, testing for low and high channel is optional.
- The test separation of all above table is 0mm.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab

Date: Aug. 03,2018

System Check Head 2450 MHz

DUT: Dipole 2450 MHz Type: SID 2450

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=2.52

Frequency: 2450 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 38.81$; $\rho = 1000$ kg/m³ ;

Phantom section: Flat Section; Input Power=18dBm

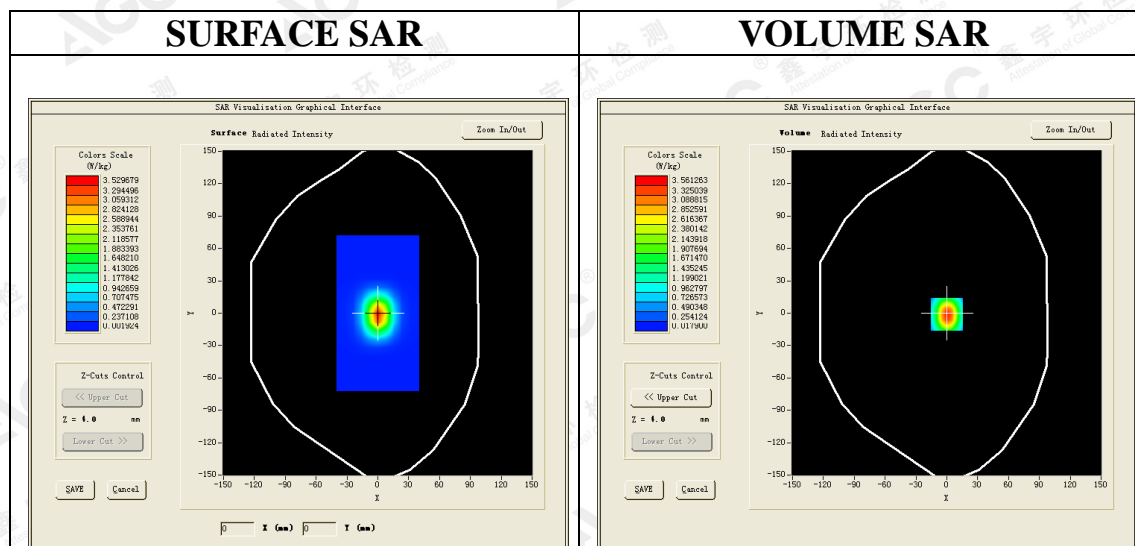
Ambient temperature (°C): 21.9, Liquid temperature (°C): 21.3

SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08,2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_32

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

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

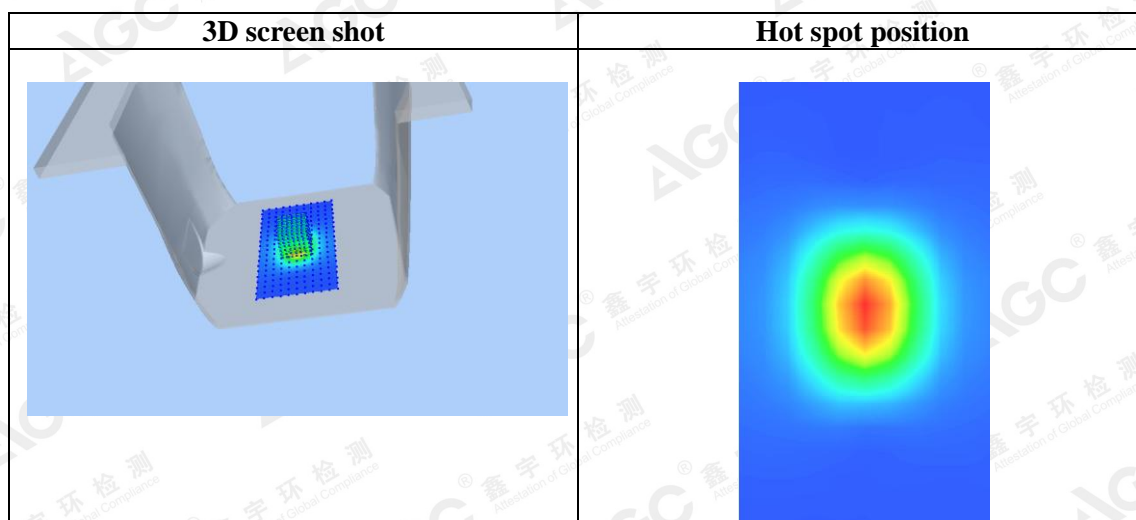
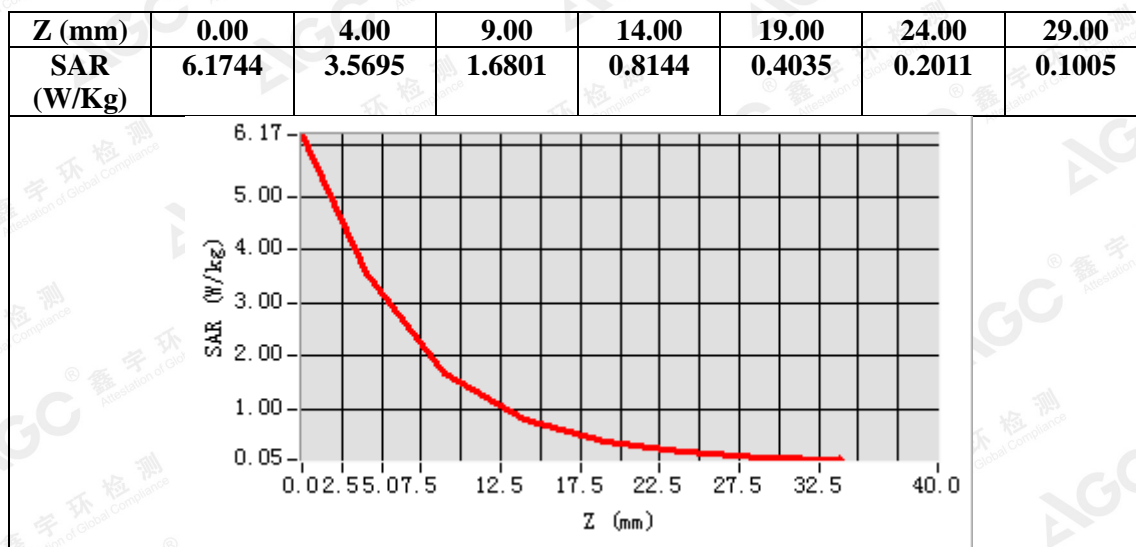


Maximum location: X=0.00, Y=-0.00

SAR Peak: 6.17 W/kg

SAR 10g (W/Kg)	1.465371
SAR 1g (W/Kg)	3.257154

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Test Laboratory: AGC Lab

Date: Aug. 03,2018

System Check Body 2450 MHz

DUT: Dipole 2450 MHz Type: SID 2450

Communication System CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=2.58

Frequency: 2450 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 52.94$; $\rho = 1000$ kg/m³ ;

Phantom section: Flat Section; Input Power=18dBm

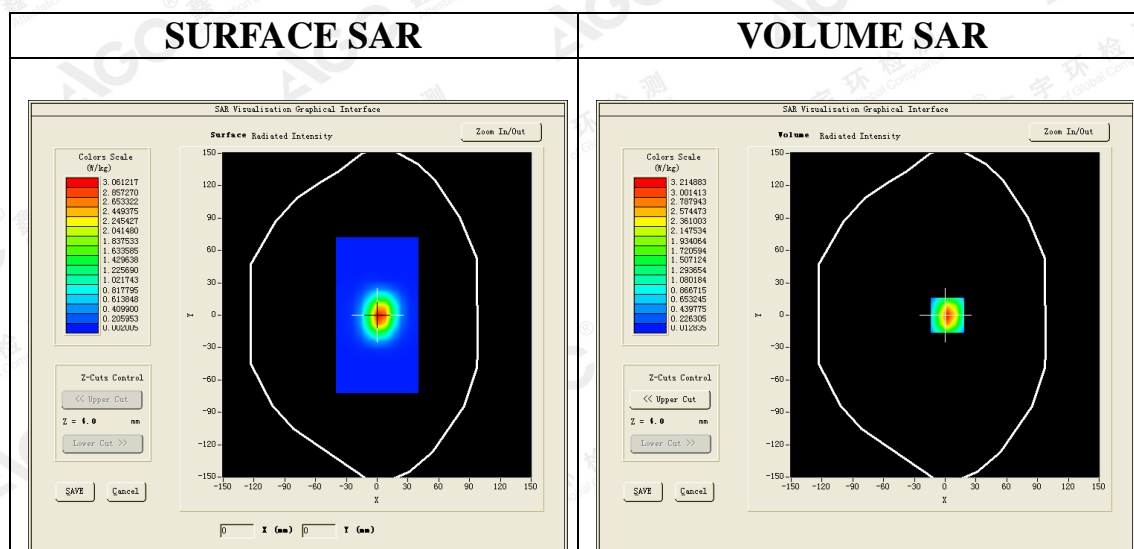
Ambient temperature (°C):21.9, Liquid temperature (°C): 21.5

SATIMO Configuration

- Probe: SSE2; Calibrated: Aug. 08,2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 2450MHz Body/Area Scan: Measurement grid: dx=8mm, dy=8mm

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

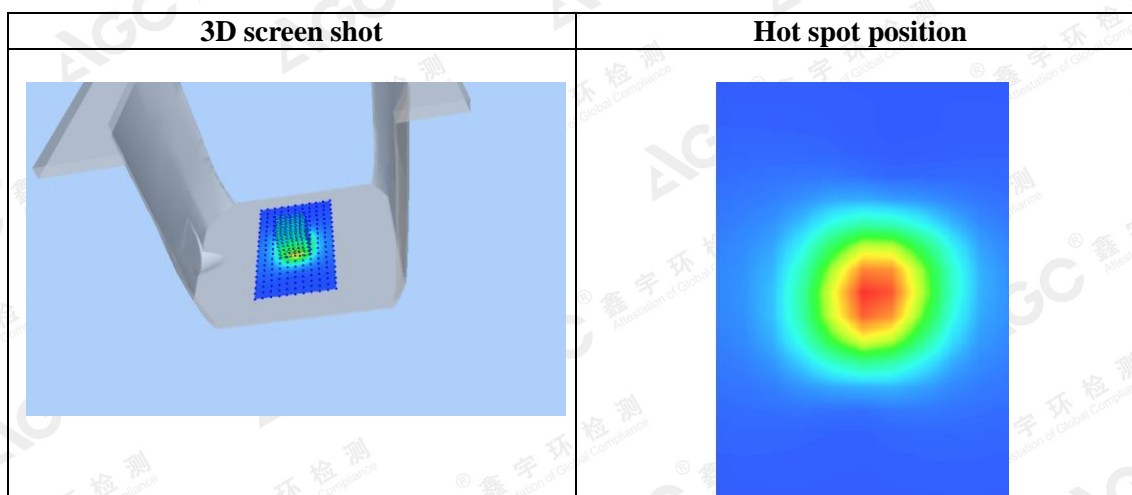
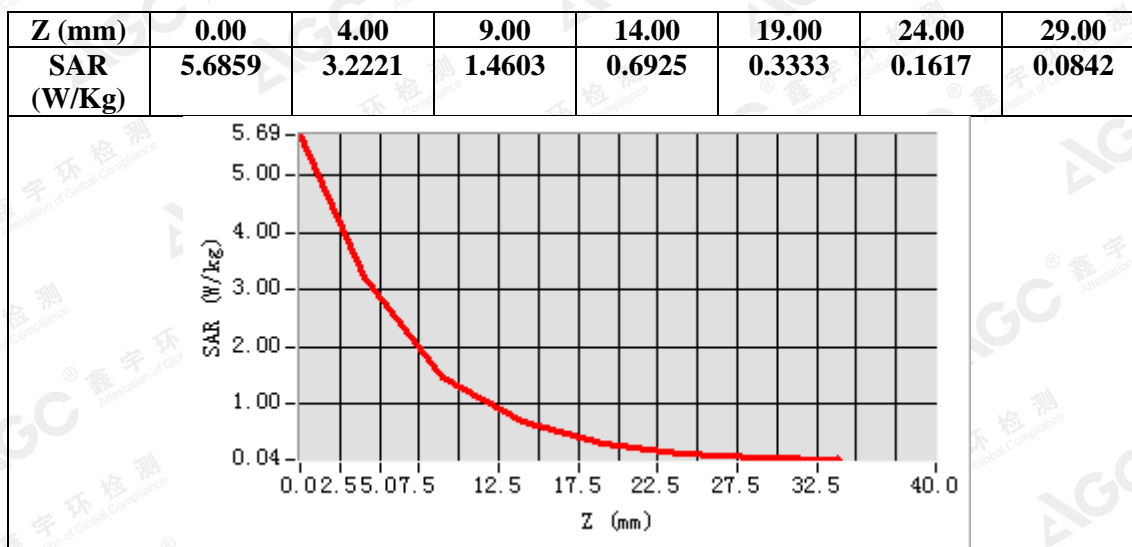


Maximum location: X=2.00, Y=0.00

SAR Peak: 5.69 W/kg

SAR 10g (W/Kg)	1.329134
SAR 1g (W/Kg)	3.023741

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Test Laboratory: AGC Lab

Date: Aug. 04, 2018

System Check Head 5800 MHz

DUT: Dipole 5000MHz Type: SWG5500

Communication System: CW; Communication System Band: D5000 (5000.0 MHz); Duty Cycle: 1:1; Conv.F=2.46

Frequency: 5800 MHz; Medium parameters used: $f = 5800$ MHz; $\sigma = 5.25$ mho/m; $\epsilon_r = 35.62$; $\rho = 1000$ kg/m³ ;

Phantom section: Flat Section; Input Power=15dBm

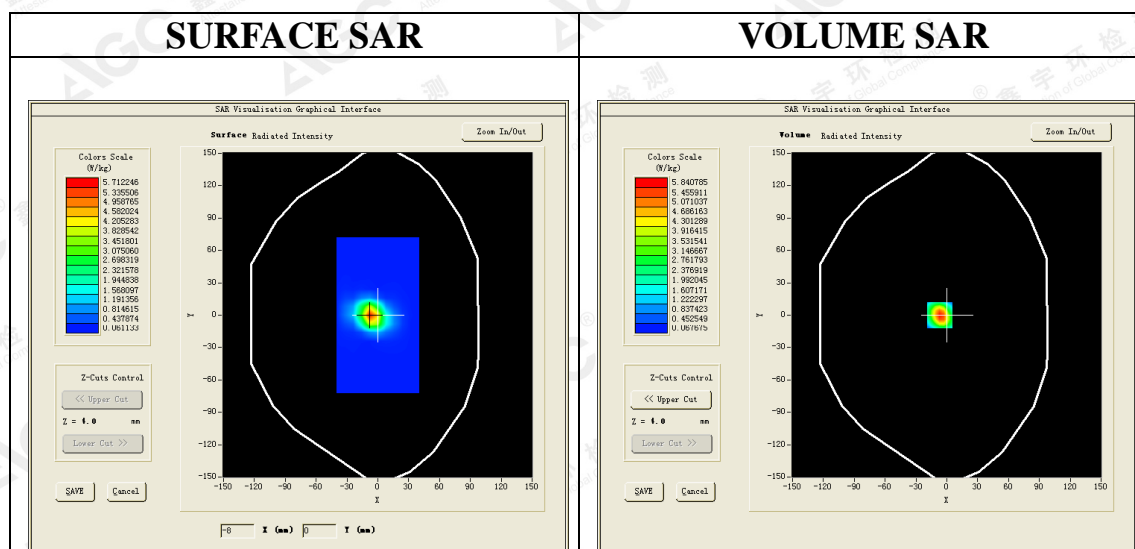
Ambient temperature (°C): 22.0, Liquid temperature (°C): 21.3

SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08, 2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 5800 MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/System Check 5800 MHz Head/Zoom Scan: Measurement grid: dx=4mm, dy=4mm, dz=2mm



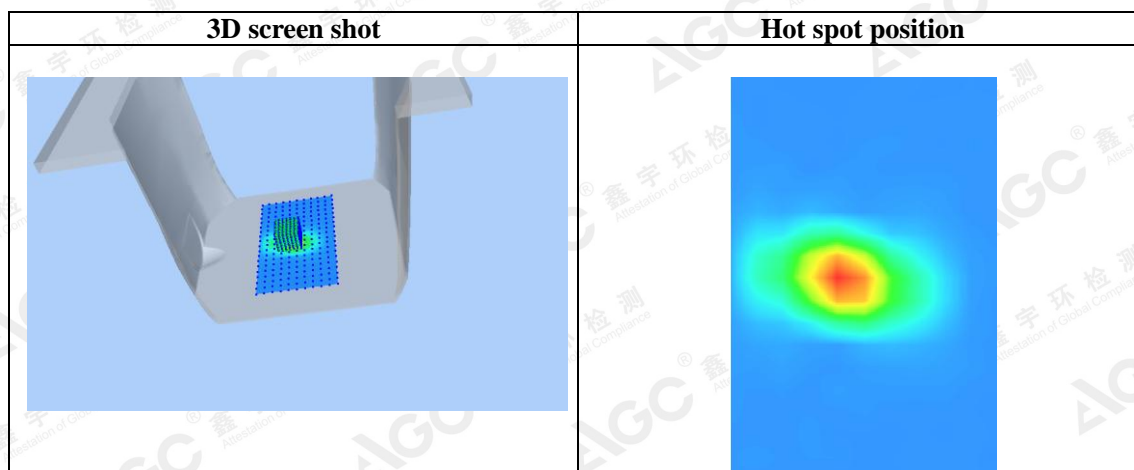
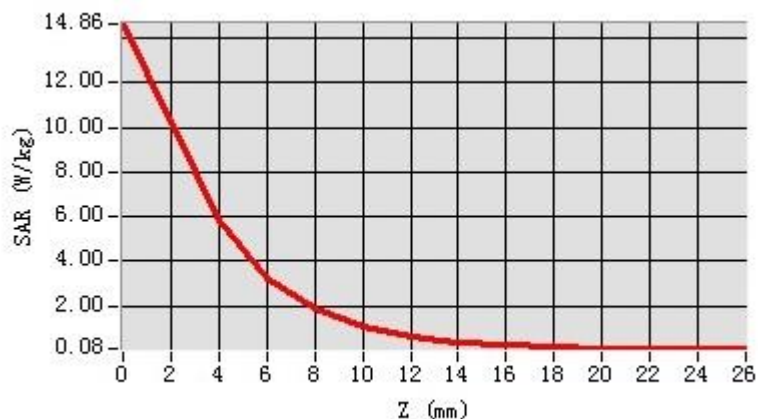
Maximum location: X=-8.00, Y=0.00

SAR Peak: 14.86 W/kg

SAR 10g (W/Kg)	1.895310
SAR 1g (W/Kg)	5.471854

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Z (mm)	0.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0
SAR (W/Kg)	14.8 569	5.80 23	3.26 02	1.83 31	1.04 71	0.60 21	0.36 22	0.21 59	0.15 37	0.11 08	0.10 00	0.08 50



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Test Laboratory: AGC Lab

Date: Aug. 04, 2018

System Check Body 5800 MHz

DUT: Dipole 5000MHz Type: SWG5500

Communication System: CW; Communication System Band: D5000 (5000.0 MHz); Duty Cycle: 1:1; Conv.F=2.53

Frequency: 5800 MHz; Medium parameters used: $f = 5800$ MHz; $\sigma = 6.01$ mho/m; $\epsilon_r = 48.96$; $\rho = 1000$ kg/m³ ;

Phantom section: Flat Section; Input Power=15dBm

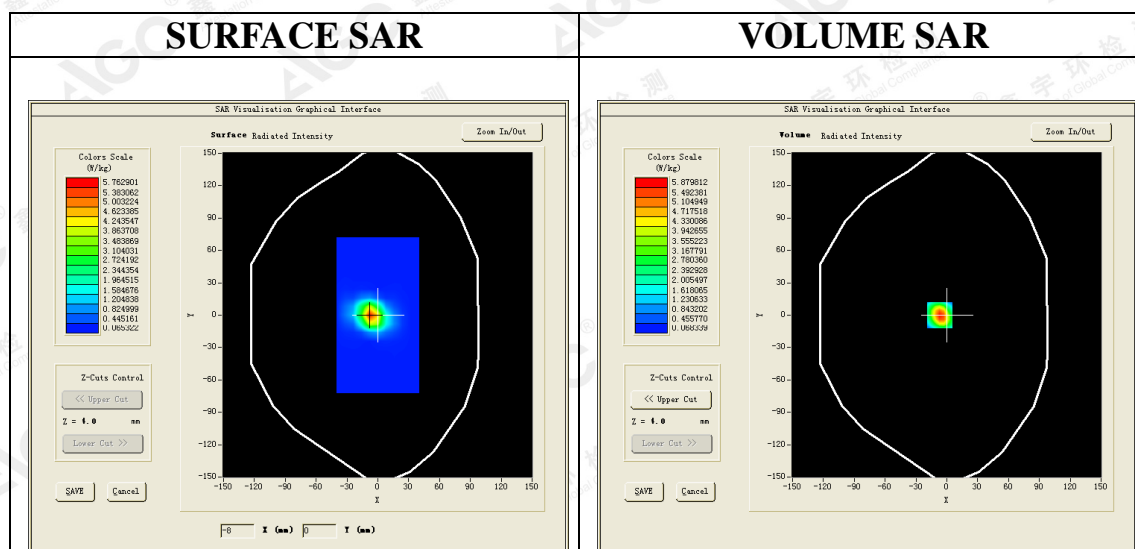
Ambient temperature (°C): 22.0, Liquid temperature (°C): 21.5

SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08, 2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/System Check 5800 MHz Body/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/System Check 5800 MHz Body/Zoom Scan: Measurement grid: dx=4mm, dy=4mm, dz=2mm

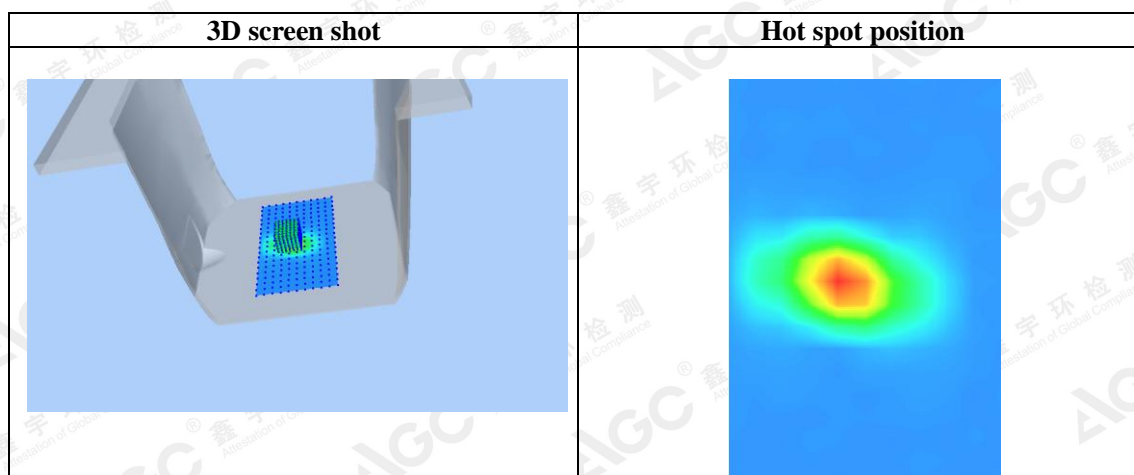
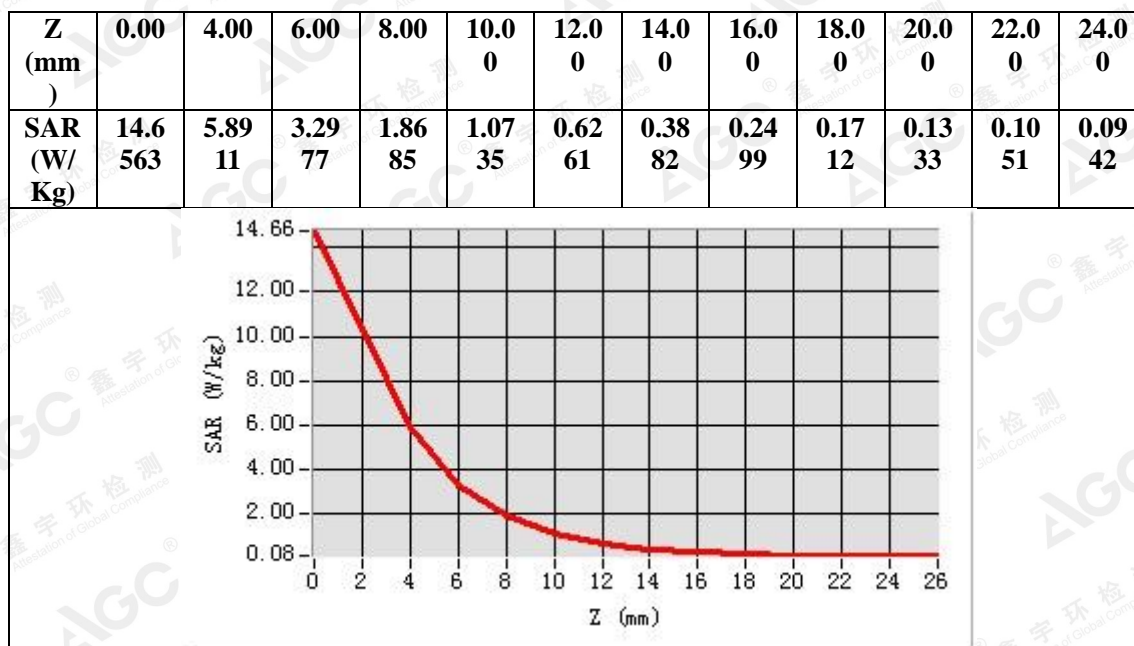


Maximum location: X=-8.00, Y=0.00

SAR Peak: 14.66 W/kg

SAR 10g (W/Kg)	1.925120
SAR 1g (W/Kg)	5.541004

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

APPENDIX B. SAR MEASUREMENT DATA

2.4GHz 802.11b -Head liquid

Test Laboratory: AGC Lab

802.11b Low- Body-Worn-Back

DUT: BODY-WORN CAMERA; Type: SV-PRIMAEELITE64

Date: Aug. 03,2018

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=2.52;
Frequency: 2412 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.75$ mho/m; $\epsilon_r = 40.01$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21.9, Liquid temperature (°C): 21.3

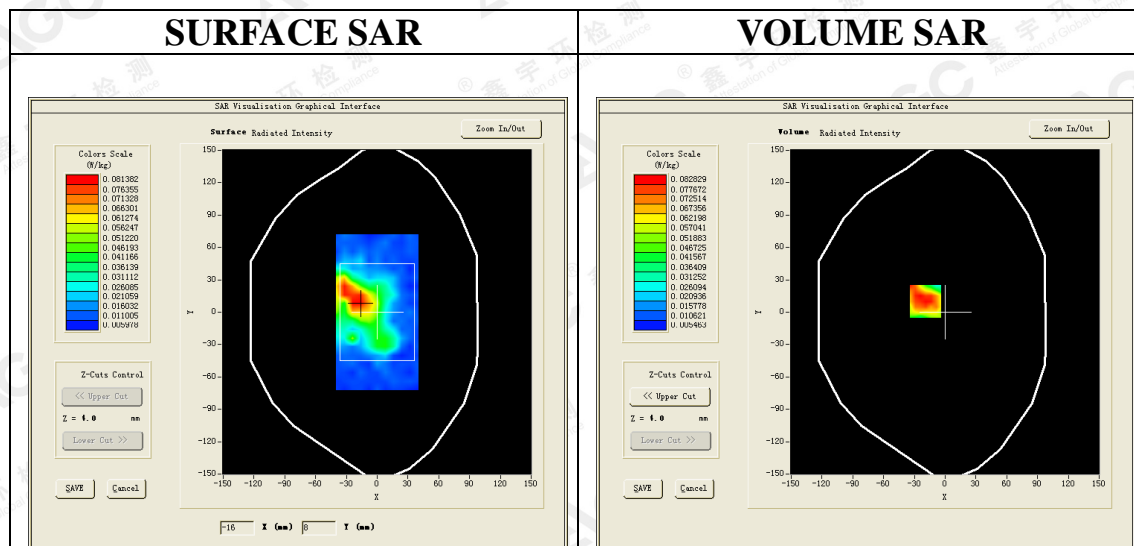
SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08,2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_32

Configuration/802.11b Low- Body-Worn-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b Low- Body-Worn-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Body back
Band	2450MHz
Channels	Low
Signal	Crest factor: 1.0

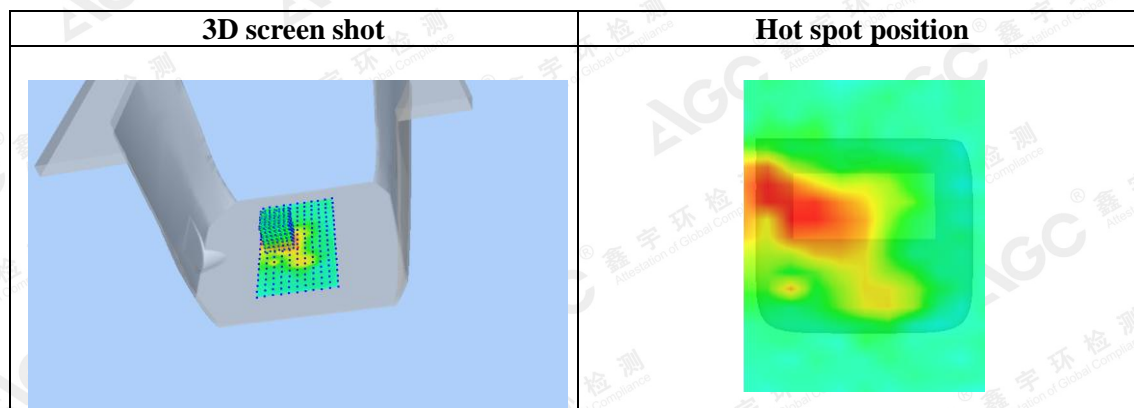
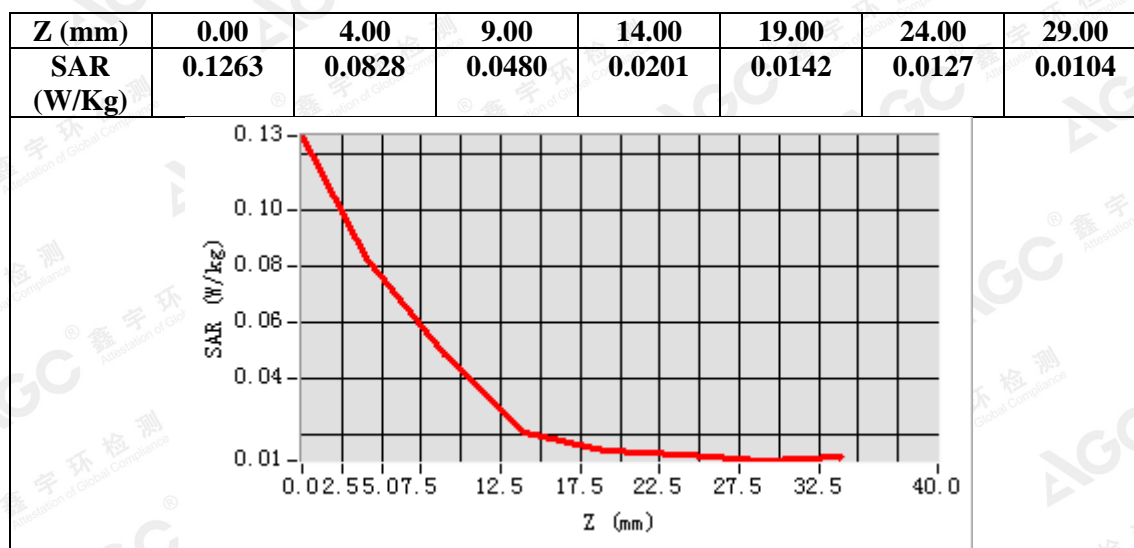


Maximum location: X=-19.00, Y=10.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.043056
SAR 1g (W/Kg)	0.077487

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

2.4GHz 802.11b -Body liquid

Test Laboratory: AGC Lab

Date: Aug. 03,2018

802.11b Low- Body-Worn-Back

DUT: BODY-WORN CAMERA; Type: SV-PRIMAEELITE64

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=2.58;
Frequency: 2412 MHz; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 54.06$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section
Ambient temperature (°C):21.9, Liquid temperature (°C): 21.5

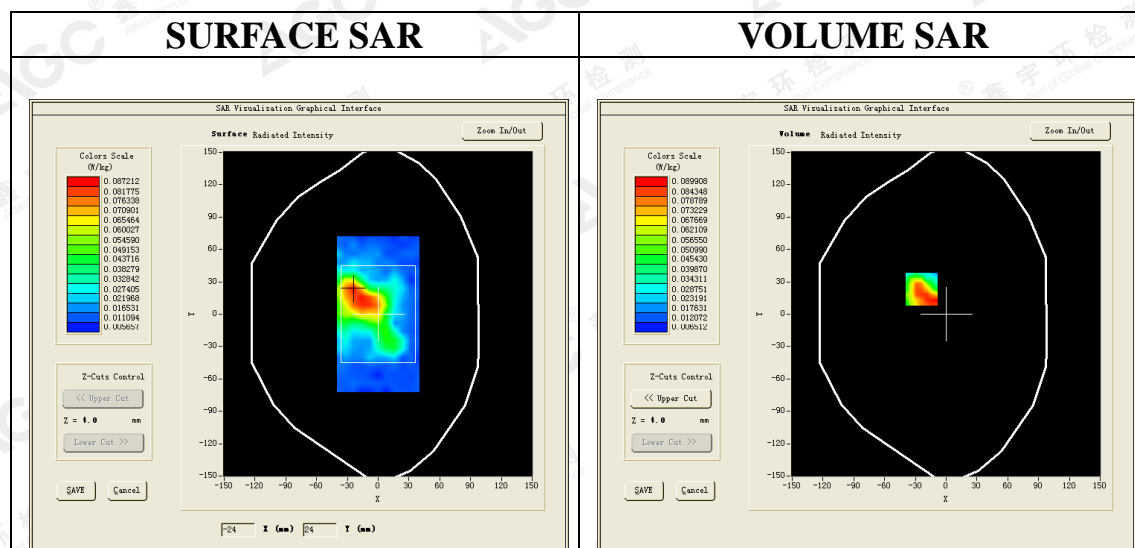
SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08,2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_32

Configuration/802.11b Low- Body-Worn-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b Low- Body-Worn-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Body back
Band	2450MHz
Channels	Low
Signal	Crest factor: 1.0

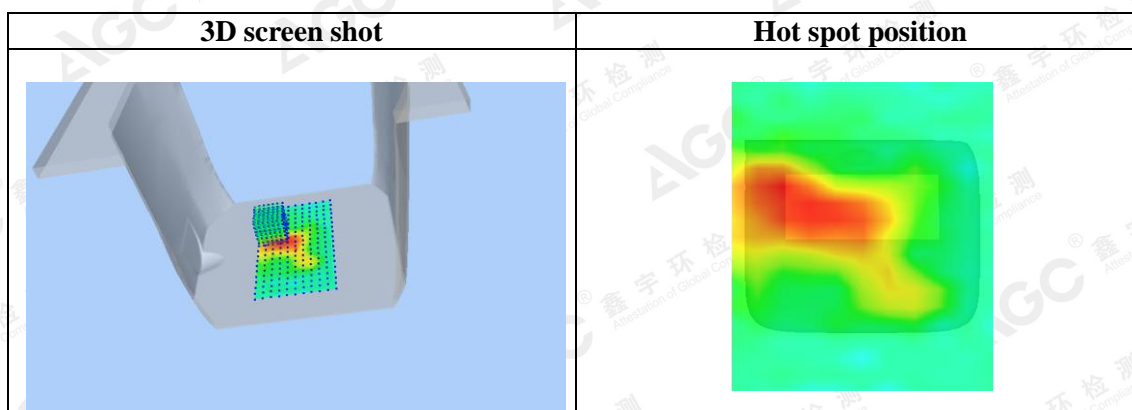
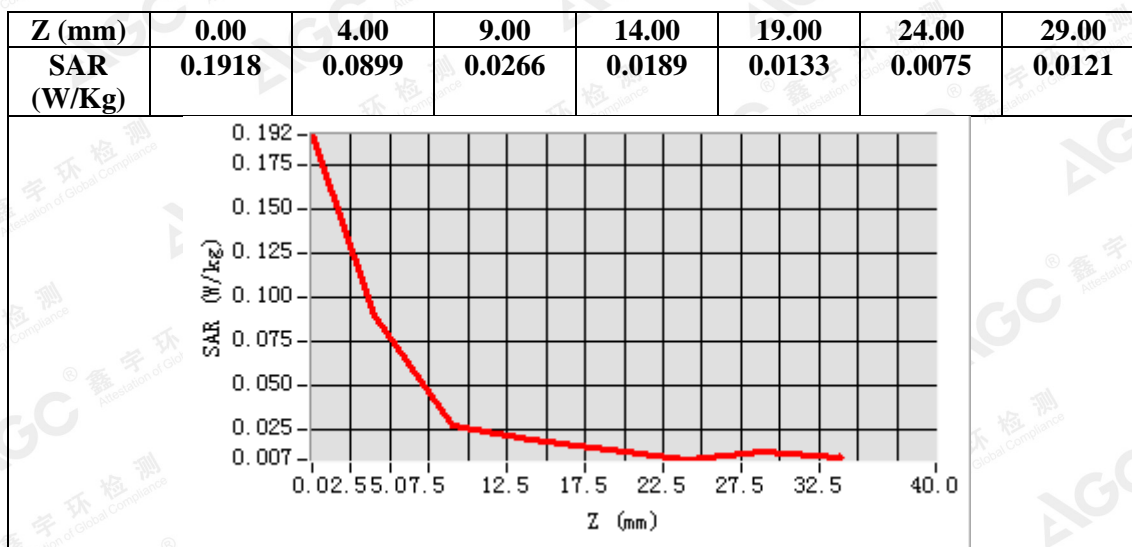


Maximum location: X=-24.00, Y=23.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.043412
SAR 1g (W/Kg)	0.082444

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

5.8GHz 802.11a20-Head liquid

Test Laboratory: AGC Lab

Date: Aug. 04,2018

802.11a20 Low-Body-Worn-Back

DUT: BODY-WORN CAMERA; Type: SV-PRIMAEELITE64

Communication System: Wi-Fi; Communication System Band: 802.11a20; Duty Cycle: 1:1; Conv.F=2.46;
Frequency: 5745MHz; Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 5.12 \text{ mho/m}$; $\epsilon_r = 36.35$; $\rho = 1000 \text{ kg/m}^3$;
Phantom section: Flat Section
Ambient temperature (°C): 22.0, Liquid temperature (°C): 21.3

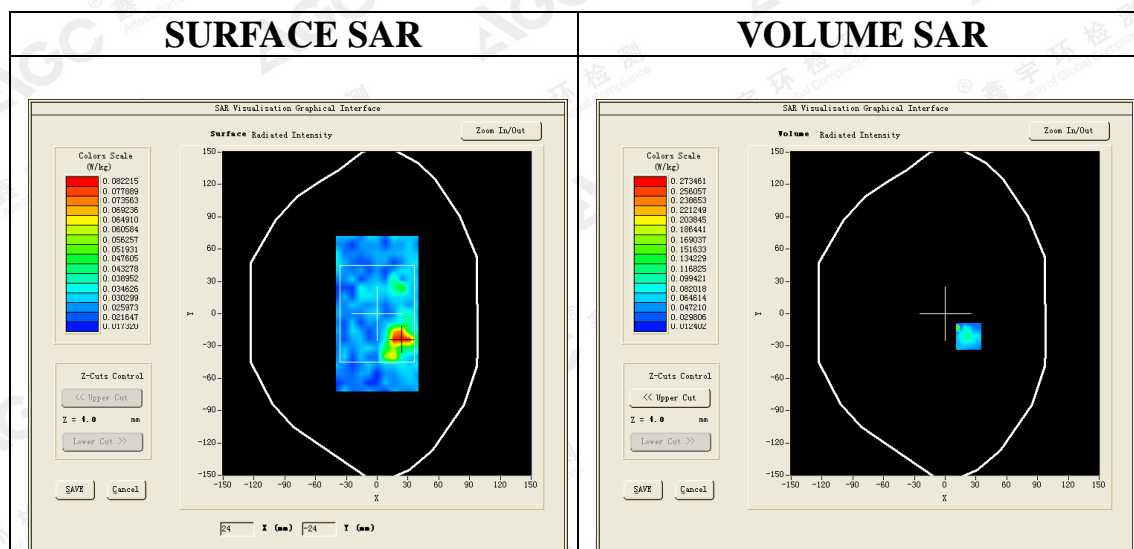
SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08,2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ 802.11a20 Low- Body-Worn-Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/ 802.11a20 Low- Body-Worn-Back /Zoom Scan: Measurement grid: dx=4mm,dy=4mm, dz=2mm

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	8x8x13 dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Body back
Band	5800MHz
Channels	Low
Signal	Crest factor: 1.0

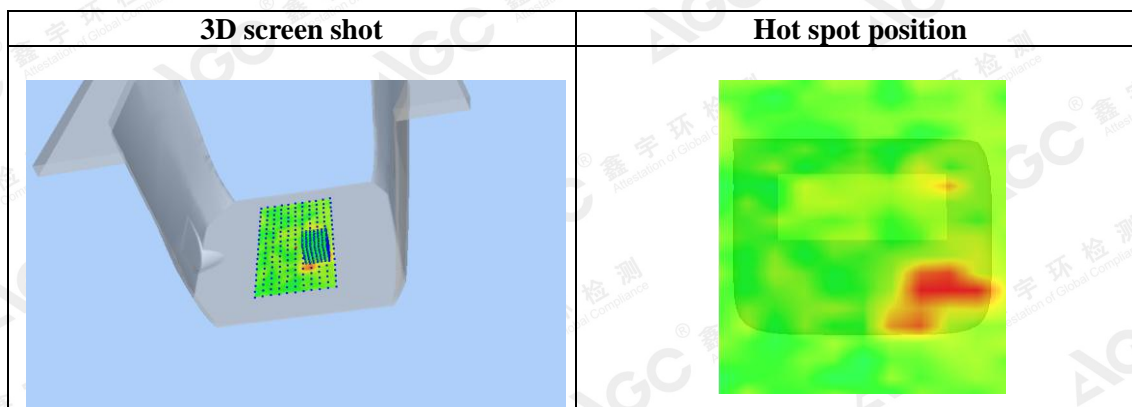
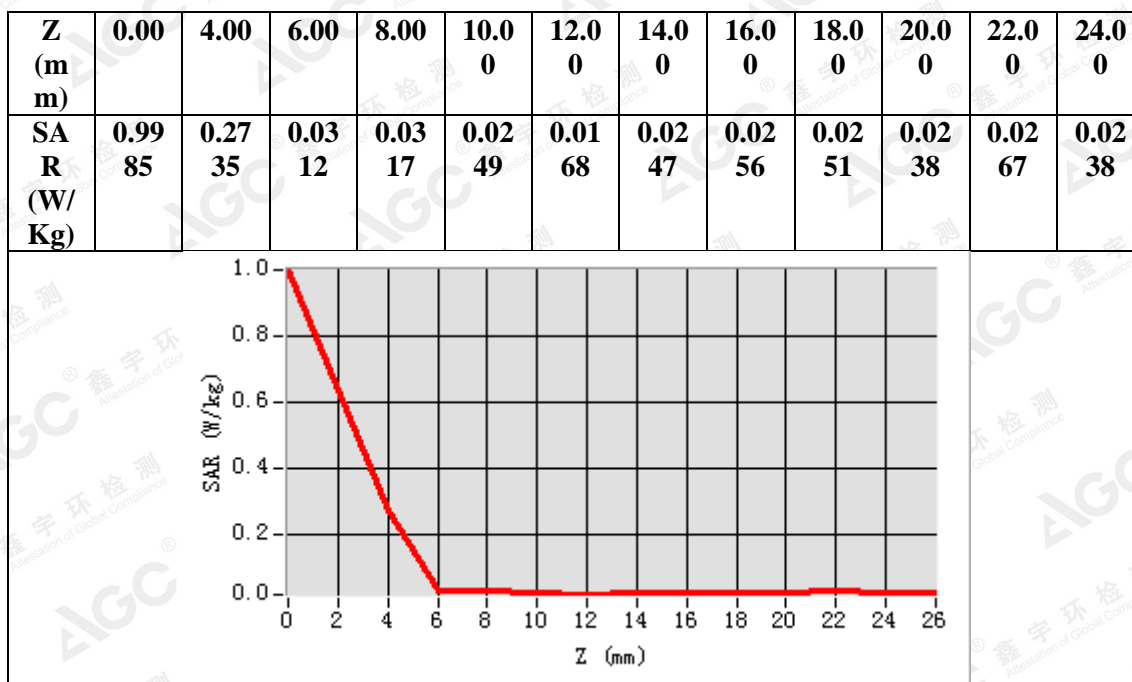


Maximum location: X=23.00, Y=-21.00

SAR Peak: 0.95 W/kg

SAR 10g (W/Kg)	0.048977
SAR 1g (W/Kg)	0.081429

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

5.8GHz 802.11a20-Body liquid

Test Laboratory: AGC Lab

Date: Aug. 04,2018

802.11a20 Low-Body-Worn-Back

DUT: BODY-WORN CAMERA; Type: SV-PRIMAEELITE64

Communication System: Wi-Fi; Communication System Band: 802.11a20; Duty Cycle: 1:1; Conv.F=2.53;
Frequency: 5745MHz; Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 5.86 \text{ mho/m}$; $\epsilon_r = 49.71$; $\rho = 1000 \text{ kg/m}^3$;
Phantom section: Flat Section
Ambient temperature (°C): 22.0, Liquid temperature (°C): 21.5

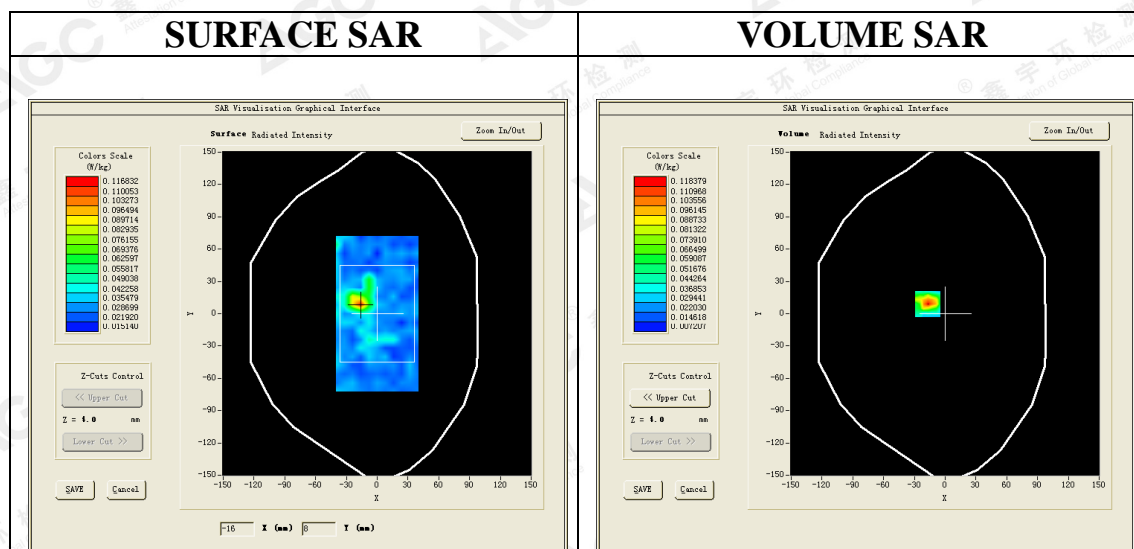
SATIMO Configuration:

- Probe: SSE2; Calibrated: Aug. 08,2017; Serial No.: SN 08/16 EPGO282
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ 802.11a20 Low- Body-Worn-Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/ 802.11a20 Low- Body-Worn-Back /Zoom Scan: Measurement grid: dx=4mm,dy=4mm, dz=2mm

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	8x8x13 dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Body back
Band	5800MHz
Channels	Low
Signal	Crest factor: 1.0

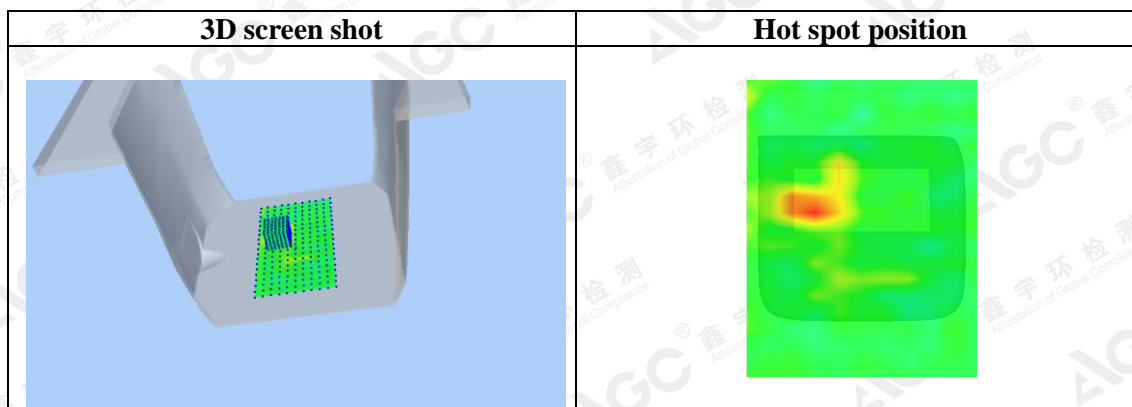
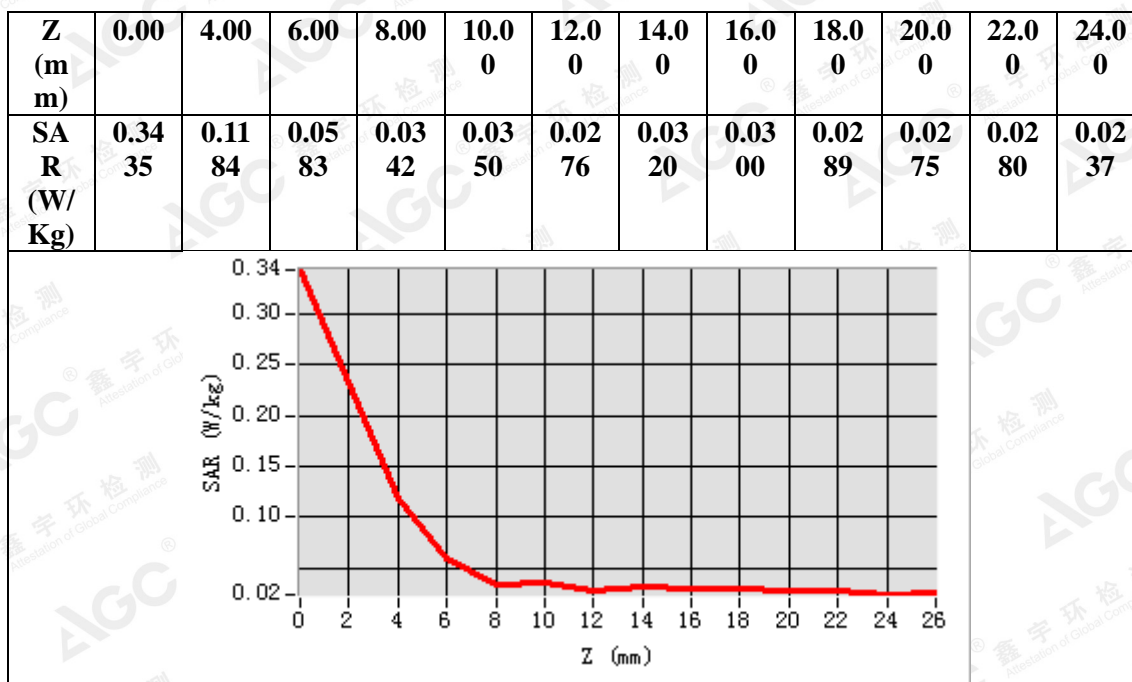


Maximum location: X=-17.00, Y=9.00

SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.053408
SAR 1g (W/Kg)	0.119074

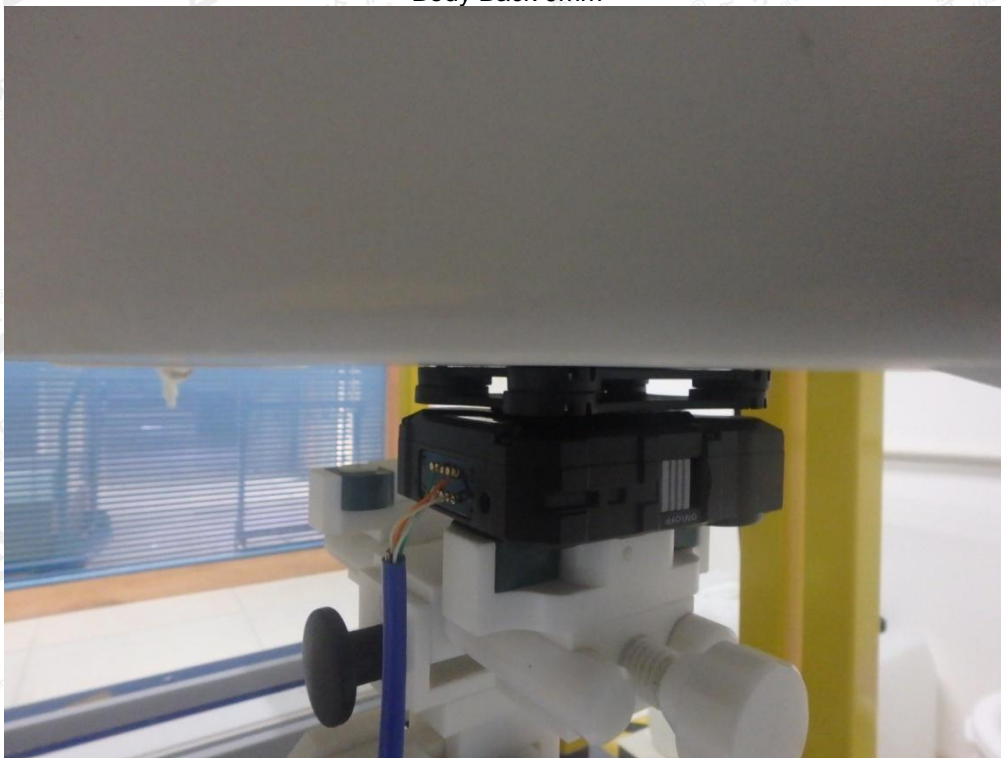
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

APPENDIX C. TEST SETUP PHOTOGRAPHS

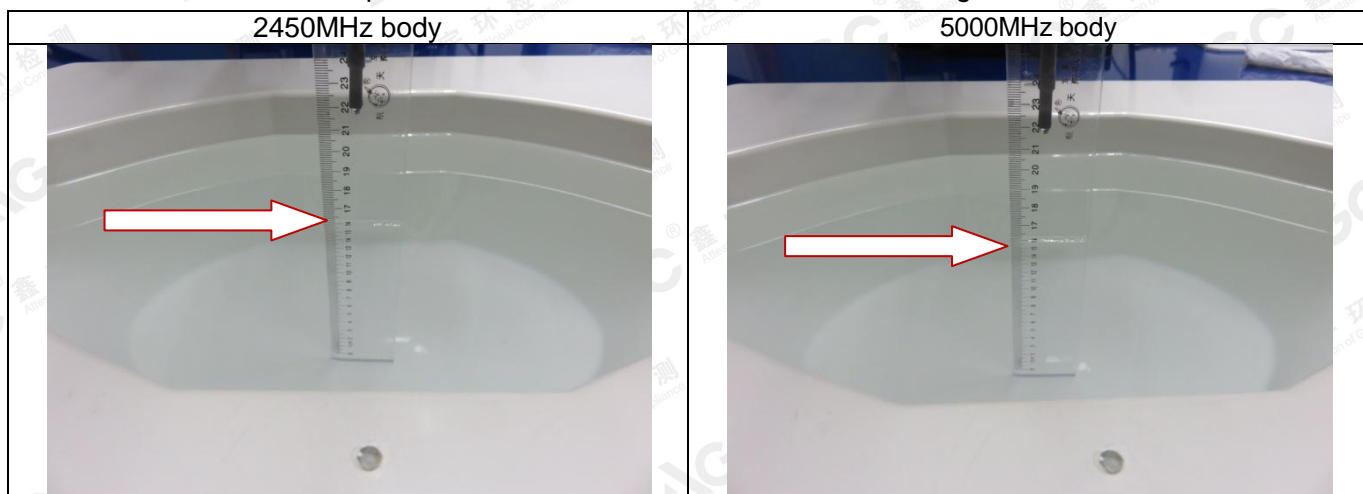
Body Back 0mm



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

DEPTH OF THE LIQUID IN THE PHANTOM—ZOOM IN

Note : The position used in the measurement were according to EN62209-2



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

APPENDIX D. CALIBRATION DATA

Refer to Attached files.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.