

## FCC 2.1093 SAR Test Report

for

**Life Tehcnologies Holdings Pte Ltd**

**Blk 33, Marsiling Industrial Estate Road 3, #07-06,  
Singapore 739256**

**Product Name : 802.11ac/a/b/g/n USB Dongle**  
**Model Name : 100097489**  
**Brand : Thermo Fisher Scientific**  
**FCC ID : 2ADEZWUBT236ACN**

**Prepared by: : AUDIX Technology Corporation,  
EMC Department**



The test report is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.  
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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## TEST REPORT

Applicant : Life Tehcnologies Holdings Pte Ltd  
Manufacturer : SparkLAN Communications, Inc.  
EUT Description  
(1) Product : 802.11ac/a/b/g/n USB Dongle  
(2) Model : 100097489  
(3) Brand : Thermo Fisher Scientific  
(4) Power Supply: DC 5V

Applicable Standards:

Title 47 FCC CFR, Part 2(§2.1093)  
IEEE 1528-2013

**Audix Technology Corp.** tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

**Audix Technology Corp.** does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2020. 10. 22

Reviewed by:

Sabrina Wang

(Sabrina Wang/Administrator)

Approved by:

Johnny Hsueh

(Johnny Hsueh/Section Manager)

## 1. REVISION RECORD OF TEST REPORT

Edition No	Issued Date	Revision Summary	Report Number
0	2020. 10. 22	Original Report	EM-SR200019

## 2. SUMMARY OF TEST RESULTS

Equipment Class - Highest Reported SAR (W/kg)													
RF Exposure conditions		Test Position			DTS			NII			DSS		
Body		Up (A)			0.414			0.399			0.006		
		Back (D)			0.101			0.464			0.007		
		Down (B)			0.358			0.213			0.013		
		Front (C)			0.124			0.425			0.003		
RF Exposure conditions	DTS			NII			DSS	$\Sigma$ 1-g SAR (W/kg)					
	SISO	MIMO		SISO	MIMO		SISO	2+3	1+7	4+7	5+6	5+6+7	
	1	2	3	4	5	6	7						
	Chain 0	Chain 0	Chain 1	Chain 0	Chain 0	Chain 1	Chain 1						
Body		0.414	0.346	0.189	0.389	0.464	0.336	0.013	0.535	0.427	0.402	0.800	0.813
Highest Simultaneous Transmission SAR								Reported Body SAR <sub>1g</sub>			SPLSR		
WLAN 2.4G ANT Chain 0 + WLAN 2.4G ANT Chain 1								0.535 (W/kg)			Not required		
WLAN 2.4G ANT Chain 0 + BT ANT Chain 1								0.427 (W/kg)			Not required		
WLAN 5G ANT Chain 0+ BT ANT Chain 1								0.402 (W/kg)			Not required		
WLAN 5G ANT Chain 0+ WLAN 5 ANT Chain 1								0.800 (W/kg)			Not required		
WLAN 5G ANT Chain 0+ WLAN 5 ANT Chain 1 + BT ANT Chain 1								0.813 (W/kg)			Not required		
Note: 1. The SAR limit (SAR <sub>1g</sub> 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093). 2. It is calculated from scaled SAR. 3. The simultaneous SAR less than 1.6 W/kg so don't need estimate SPLSR.													

### 3. GENERAL INFORMATION

#### 3.1. Description of Application

Applicant	Life Tehcnologies Holdings Pte Ltd Blk 33, Marsiling Industrial Estate Road 3, #07-06, Singapore 739256
Manufacturer	SparkLAN Communications, Inc. 8F., No.257, Sec. 2, Tiding Blvd., Neihu District, Taipei City 11493, Taiwan (R.O.C.)
Product	802.11ac/a/b/g/n USB Dongle
Model	100097489
Brand	Thermo Fisher Scientific

### 3.2. Description of EUT

Test Model	100097489		
Serial Number	20960Y1050004		
Power Rating	DC 5V		
RF Features	WLAN:802.11 a/b/g/n/ac Bluetooth: BT and BLE		
Transmit Type	2.4 GHz		
	802.11b		1T1R
	802.11g		1T1R
	802.11n-HT20		2T2R
	802.11n-HT40		2T2R
	BT/BLE		1T1R
	UNII Bands		
	802.11a		1T1R
	802.11n-HT20/802.11ac-VHT20		2T2R
	802.11n-HT40/802.11ac-VHT40		2T2R
	802.11ac-VHT80		2T2R
	Test Sample	Sample No.	Test Item
-02		SAR	N/A
Sample Status	Production		
Date of Receipt	2020. 09. 18		
Date of Test	2020. 10. 14 ~ 21		
Interface Ports of EUT	<ul style="list-style-type: none"> <li>One USB Port</li> </ul>		
Accessories Supplied	<ul style="list-style-type: none"> <li>None</li> </ul>		

### 3.3. Reference Test Guidance

- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 447498 D02 SAR Procedures for Dongle Xmtr v02r01
- KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r04
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02

### 3.4. Antenna Information

No.	Antenna No.	Brand Name	Model Name	Antenna Type	Frequency (MHz)	Max Gain(dBi)
1.	ANT 0 (Chain 0)	N/A	N/A	PCB	2400	2.5
					2450	3.2
					2500	2.8
					5150	3.3
					5500	3.7
					5825	4.2
2.	ANT 1 (Chain 1)	N/A	N/A	PCB	2400	3.2
					2450	2.9
					2500	2.7
					5150	3.1
					5500	3.5
					5825	4.0

### 3.5. EUT Specifications Assessed in Current Report

2.4GHz		
Mode	Fundamental Range (MHz)	Channel Number
802.11b	2412-2462	11
802.11g		11
802.11n-HT20		11
802.11n-HT40	2422-2452	7
Bluetooth	2402-2480	79
BLE	2402-2480	40

5GHz			
Mode	Band	Fundamental Range (MHz)	Channel Number
802.11a	NII-I	5180-5240	4
	NII-2A	5260-5320	4
	NII-2C	5500-5700	11
	NII-III	5745-5825	5
802.11n-HT20/ 802.11ac-VHT20	NII-I	5180-5240	4
	NII-2A	5260-5320	4
	NII-2C	5500-5700	11
	NII-III	5745-5825	5
802.11n-HT40/ 802.11ac-VHT40	NII-I	5190-5230	2
	NII-2A	5270-5310	2
	NII-2C	5510-5670	5
	NII-III	5755-5795	2
802.11ac-VHT80	NII-I	5210	1
	NII-2A	5290	1
	NII-2C	5530-5610	2
	NII-III	5775	1
Remark: Band NII-2A and NII-2C (DFS Function, Slave/no In service monitor, no Ad-Hoc mode)			

Mode	Modulation	Data Rate (Mbps)
802.11b	DSSS (DBPSK/DQPSK/CCK)	Up to 11
802.11g	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11a	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 144.4
802.11n-HT40		Up to 300
802.11ac-VHT20	OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)	Up to 173.3
802.11ac-VHT40		Up to 400
802.11ac-VHT80		Up to 866.7
Bluetooth	FHSS (GFSK, $\pi/4$ DQPSK, 8-DPSK)	1/2/3
BLE	GFSK	1

### 3.6. Description of Key Components

None

### 3.7. Test Environment

Ambient conditions in the laboratory:

Item	Require	Actual
Temperature (°C)	18-25	22 ± 2
Humidity (%RH)	30-70	48 ± 2

### 3.8. Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2017 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is : TW1724 (1) SAR Room

### 3.9. Measurement Uncertainty

<b>DASY5 Uncertainty</b>								
According to IEEE 1528-2013 and IEC 62209-1/2016 (0.3 - 6 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(ci) 1g	(ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(vi) v <sub>eff</sub>
<b>Measurement System</b>								
Probe Calibration	±6.0%	N	1	1	1	±6.0%	±6.0%	∞
Axial Isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Max. SAR Eval.	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
<b>Test Sample Related</b>								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
<b>Phantom and Setup</b>								
Phantom Uncertainty	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Liquid Conductivity (target)	±5.0%	R	$\sqrt{3}$	0.64	0.43	±1.8%	±1.2%	∞
Liquid Conductivity (meas.)	±2.5%	N	1	0.64	0.43	±1.6%	±1.1%	∞
Liquid Permittivity (target)	±5.0%	R	$\sqrt{3}$	0.6	0.49	±1.7%	±1.4%	∞
Liquid Permittivity (meas.)	±2.5%	N	1	0.6	0.49	±1.5%	±1.2%	∞
<b>Combined Std. Uncertainty</b>						±11%	±10.8%	387
<b>Expanded STD Uncertainty</b>						±22%	±21.5%	

<b>DASY5 Uncertainty</b> According to IEC 62209-2/2010 (30 MHz - 6 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(ci) 1g	(ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(vi) v <sub>eff</sub>
<b>Measurement System</b>								
Probe Calibration	±6.0%	N	1	1	1	±6.0%	±6.0%	∞
Axial Isotropy	±4.7%	R	√3	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	√3	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	√3	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	√3	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	√3	1	1	±0.6%	±0.6%	∞
Readout Electronic	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	√3	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	√3	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	√3	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	√3	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	√3	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	√3	1	1	±1.7%	±1.7%	∞
Modulation Response	±2.5%	R	√3	1	1	±1.45 %	±1.45 %	∞
Post-processing	±3.8%	R	√3	1	1	±2.2%	±2.2%	∞
<b>Test Sample Related</b>								
Test Sample Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	√3	1	1	±2.9%	±2.9%	∞
Power Scaling	±0.0%	R	√3	1	1	±0.0%	±0.0%	∞
<b>Phantom and Setup</b>								
Phantom Uncertainty	±4.5%	R	√3	1	1	±2.4%	±2.4%	∞
SAR correction	±1.9%	R	√3	1	0.84	±1.9%	±1.9%	∞
Liquid Conductivity (target)	±5.0%	R	√3	0.64	0.43	±1.8%	±1.2%	∞
Liquid Conductivity (mea.)DAK	±2.5%	R	√3	0.64	0.43	±0.9%	±0.6%	∞
Liquid Permittivity (target)	±5.0%	R	√3	0.6	0.49	±1.7%	±1.4%	∞
Liquid Permittivity(meas.)DAK	±2.5%	R	√3	0.6	0.49	±0.9%	±0.7%	∞
<b>Combined Std. Uncertainty</b>						±11.0%	±10.9%	387
<b>Expanded STD Uncertainty</b>						±22.1%	±21.8%	

#### 4. MEASUREMENT EQUIPMENT LIST

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Stäubli Robot TX90 XL	Stäubli	TX90	F12/5K9SA1/A101	N/A	N/A
2.	Controller	SPEAG	CS8c	N/A	N/A	N/A
3.	SAM Twin Phantom	SPEAG	N/A	1706	N/A	N/A
4.	ELI5 Phantom	SPEAG	N/A	1170	N/A	N/A
5.	Device Holder	SPEAG	N/A	N/A	N/A	N/A
6.	SAR Software	SPEAG	DASY52	V.52.8.8.1222	N/A	N/A
7.	Data Acquisition Electronic	SPEAG	DAE4	679	2020.05.06	1 Year
8.	E-Field Probe	SPEAG	EX3DV4	3855	2020.09.23	1 Year
9.	ENA Network Analyzer	Agilent	E5071C-285	MY46215502	2020.04.09	1 Year
10.	Signal Generator	Aglient	N5181A	MY50143917	2020.09.15	1 Year
11.	Power Meter	Aglient	ML2487A	MY52180007	2020.09.17	1 Year
12.	Power Sensor	Aglient	N8481H	MY52080006	2020.09.17	1 Year
13.	Dipole Antenna	SPEAG	D2450V2	888	2018.09.27	3 Years
14.	Dipole Antenna	SPEAG	D5GHzV2	1124	2018.09.27	3 Years

## 5. SAR MEASUREMENT SYSTEM

### 5.1. 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 ( $\rho$ ). The equation description is as below:

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

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

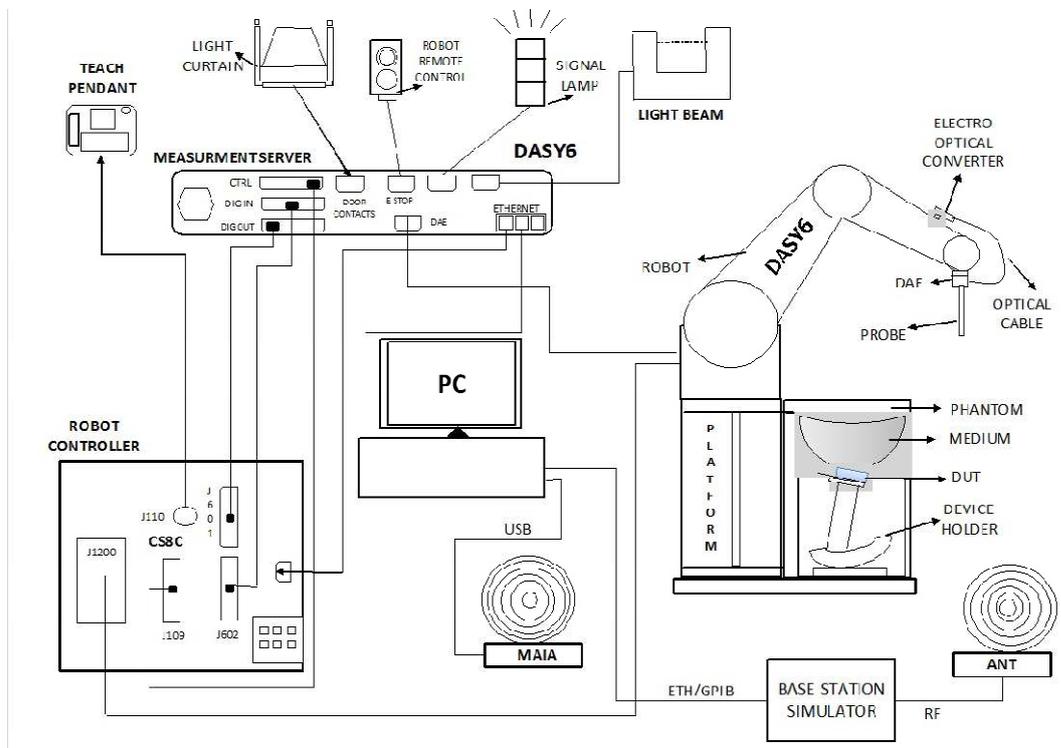
SAR measurement can be related to the electrical field in the tissue by

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

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and E is the RMS electrical field strength.

### 5.2. SPEAG DASY System

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.



**Fig-3.1 DASY System Setup**

### 5.2.1. Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (CS8e) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability  $\pm 0.035$  mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)



### 5.2.2. Probes

Model	Ex3DV4	
Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 6 GHz Linearity: $\pm 0.2$ dB	
Directivity	$\pm 0.3$ dB in HSL (rotation around probe axis) $\pm 0.5$ dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 $\mu$ W/g to 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically $< 1$ $\mu$ W/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

### 5.2.3. Data Acquisition Electronics (DAE)

Model	DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	$< 5\mu$ V (with auto zero)	
Input Bias Current	$< 50$ fA	
Dimensions	60 x 60 x 68 mm	

### 5.2.4. Phantom

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinyl ester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinyl ester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

### 5.2.5. Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

### 5.2.6. Reference Dipole

Model	System Validation Dipoles	
Construction	Symmetrical dipole with 1/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

### 5.2.7. Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-5.1.



The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528 and FCC OET 65 Supplement C Appendix C. For the body tissue simulating liquids, the dielectric properties are defined in FCC OET 65 Supplement C Appendix C. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using an Agilent 85070D Dielectric Probe Kit and an Agilent Network Analyzer.

**Table-5.1 Targets of Tissue Simulating Liquid**

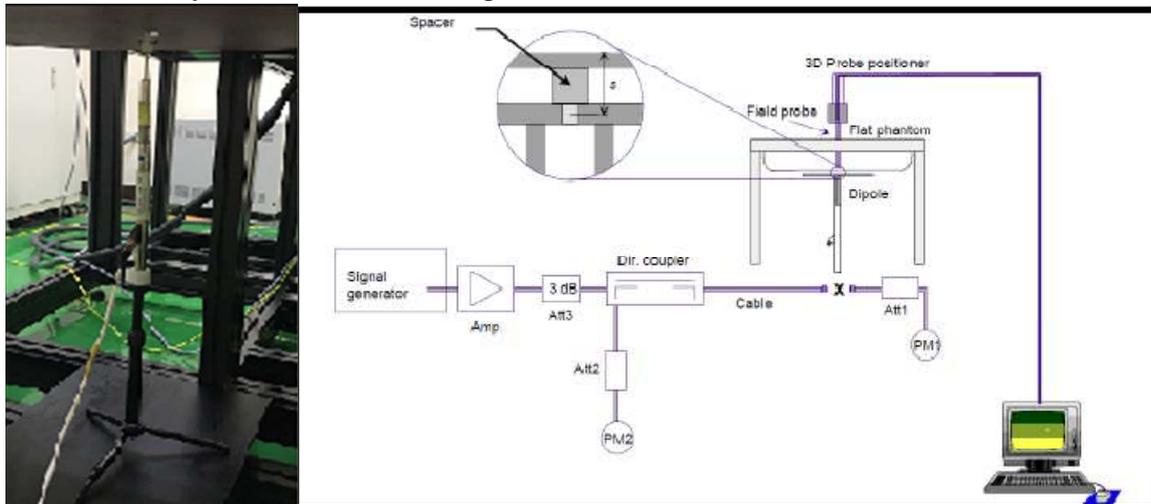
Target Frequency [MHz]	Target Permittivity ( $\epsilon_r$ )	Range of $\pm 5\%$	Target Conductivity $\sigma$ [s/m]	Range of $\pm 5\%$
For Head				
750	41.9	39.8 ~ 44.0	0.89	0.85 ~ 0.93
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
900	41.5	39.4 ~ 43.6	0.97	0.92 ~ 1.02
1450	40.5	38.5 ~ 42.5	1.20	1.14 ~ 1.26
1640	40.3	38.3 ~ 42.3	1.29	1.23 ~ 1.35
1750	40.1	38.1 ~ 42.1	1.37	1.30 ~ 1.44
1800	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2000	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2300	39.5	37.5 ~ 41.5	1.67	1.59 ~ 1.75
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
2600	39.0	37.1 ~ 41.0	1.96	1.86 ~ 2.06
3500	37.9	36.0 ~ 39.8	2.91	2.76 ~ 3.06
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5500	35.6	33.8 ~ 37.4	4.96	4.71 ~ 5.21
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53
For Body				
750	55.5	52.7 ~ 58.3	0.96	0.91 ~ 1.01
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
900	55.0	52.3 ~ 57.8	1.05	1.00 ~ 1.10
1450	54.0	51.3 ~ 56.7	1.30	1.24 ~ 1.37
1640	53.8	51.1 ~ 56.5	1.40	1.33 ~ 1.47
1750	53.4	50.7 ~ 56.1	1.49	1.42 ~ 1.56
1800	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2000	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2300	52.9	50.3 ~ 55.5	1.81	1.72 ~ 1.90
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
2600	52.5	49.9 ~ 55.1	2.16	2.05 ~ 2.27
3500	51.3	48.7 ~ 53.9	3.31	3.14 ~ 3.48
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5500	48.6	46.2 ~ 51.0	5.65	5.37 ~ 5.93
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

**Table-5.2 Recipes of Tissue Simulating Liquid**

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
For Head								
H750	0.2	-	0.2	1.5	56.0	-	42.1	-
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H900	0.2	-	0.2	1.4	58.0	-	40.2	-
H1450	-	43.3	-	0.6	-	-	56.1	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	47.0	-	0.4	-	-	52.6	-
H1800	-	44.5	-	0.3	-	-	55.2	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2000	-	44.5	-	0.1	-	-	55.4	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.5	17.3
For Body								
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	31.0	-	0.2	-	-	68.8	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

### 5.3. SAR System Verification

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



The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The power meter PM1 measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter PM2 is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

### 5.3.1. SAR System Verification Result

System Performance Check at WLAN				
Dipole Kit: D2450V2(Body)				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Liquid Temp. [°C]
2450MHz	Reference result	51.5	24.2	N/A
	± 10% window	46.350 to 56.650	21.780 to 26.620	
	2020. 10. 21	53.6	24.8	22.6
Note: All SAR values are normalized to 1W forward power.				

System Performance Check at WLAN				
Dipole Kit: D5GHzV2 (Body)				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Liquid Temp. [°C]
5200MHz	Reference result	80.1	22.9	N/A
	± 10% window	72.090 to 88.110	20.610 to 25.190	
	2020. 10. 14	86.2	24.4	22.4
Note: All SAR values are normalized to 1W forward power.				

System Performance Check at WLAN				
Dipole Kit: D5GHzV2 (Body)				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Liquid Temp. [°C]
5500MHz	Reference result	83.9	23.9	N/A
	± 10% window	75.510 to 92.290	21.510 to 26.290	
	2020. 10. 14	89.3	25.3	22.4
Note: All SAR values are normalized to 1W forward power.				

System Performance Check at WLAN				
Dipole Kit: D5GHzV2 (Body)				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Liquid Temp. [°C]
5800MHz	Reference result	79.6	22.8	N/A
	± 10% window	71.640 to 87.560	20.520 to 25.080	
	2020. 10. 15	84.2	24.3	22.4
Note: All SAR values are normalized to 1W forward power.				

### 5.3.2. SAR System Check Data

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Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

#### System Check\_H2450

DUT: D2450V2 - SN888

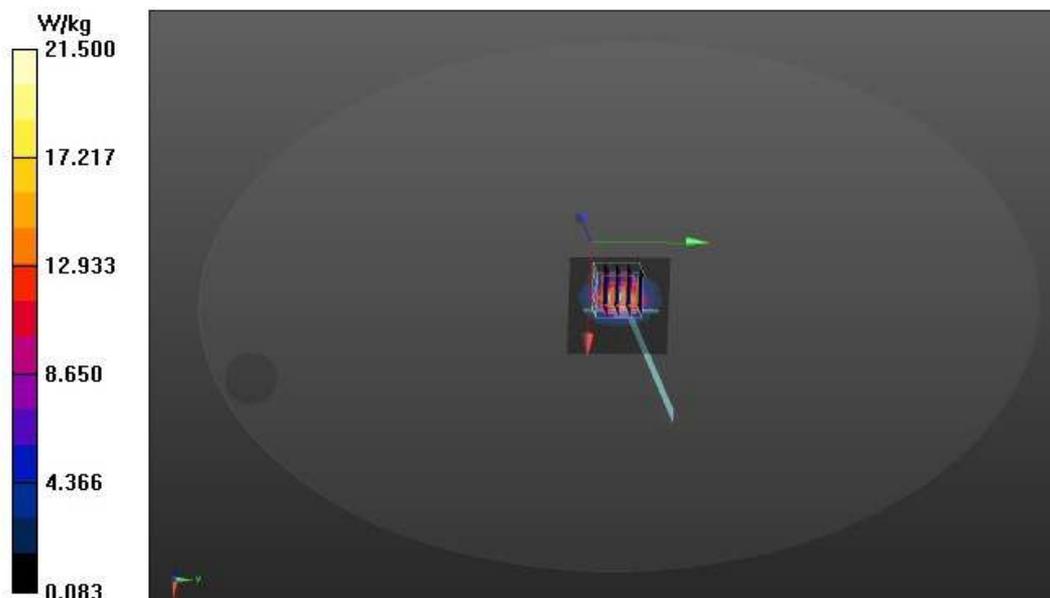
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 2450$  MHz,  $\sigma = 1.86$  S/m;  $\epsilon_r = 38.645$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2450 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (8x8x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm  
Maximum value of SAR (measured) = 28.8 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 89.55 V/m; Power Drift = 0.18 dB  
Peak SAR (extrapolated) = 48.2 W/kg  
**SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.19 W/kg**  
Smallest distance from peaks to all points 3 dB below = 8 mm  
Ratio of SAR at M2 to SAR at M1 = 42.9%  
Maximum value of SAR (measured) = 21.5 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**System Check\_H5200**

DUT: D5GHzV2 - SN1124

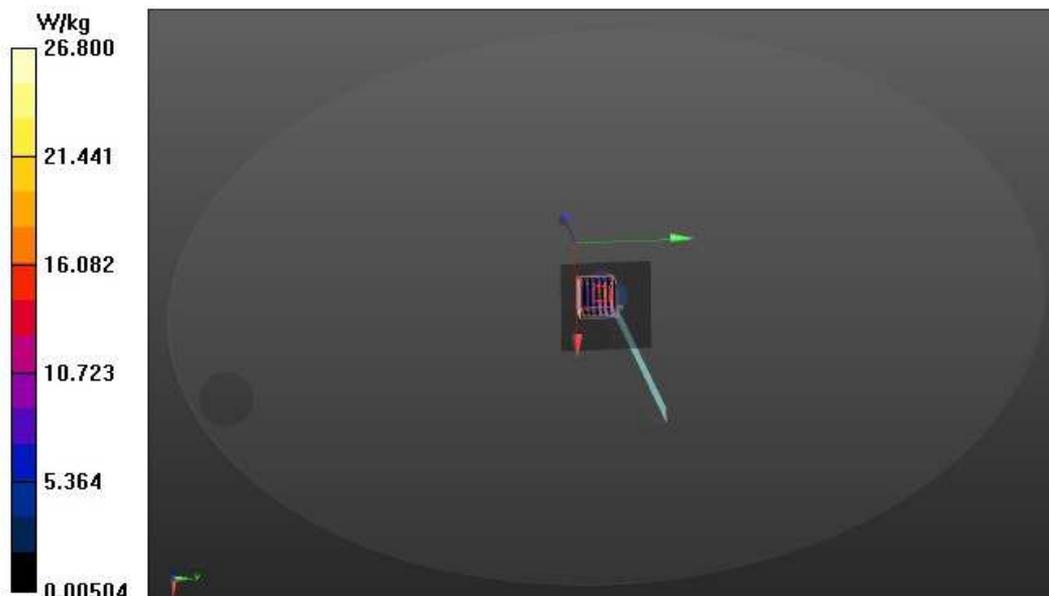
Communication System: UID 0, CW (0); Frequency: 5300 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.025$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (7x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm  
Maximum value of SAR (measured) = 21.9 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm  
Reference Value = 35.92 V/m; Power Drift = 0.28 dB  
Peak SAR (extrapolated) = 82.3 W/kg  
**SAR(1 g) = 8.62 W/kg; SAR(10 g) = 2.44 W/kg**  
Smallest distance from peaks to all points 3 dB below = 5.8 mm  
Ratio of SAR at M2 to SAR at M1 = 46.1%  
Maximum value of SAR (measured) = 26.8 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**System Check\_H5500**

DUT: D5GHzV2 - SN1124

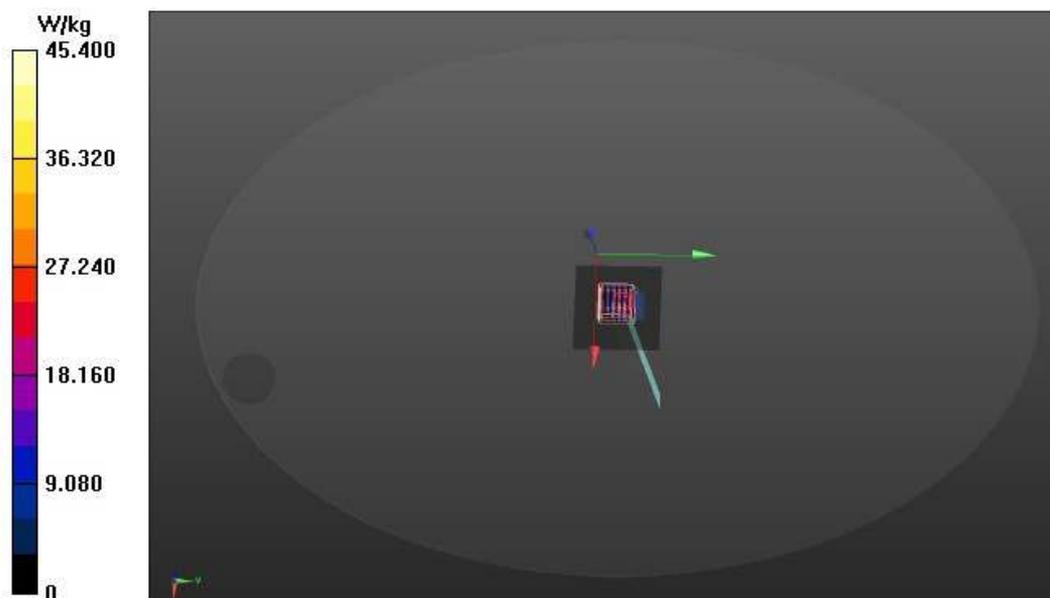
Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5600$  MHz,  $\sigma = 4.923$  S/m,  $\epsilon_r = 35.339$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.83, 4.83, 4.83) @ 5600 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (7x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm  
Maximum value of SAR (measured) = 26.2 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm  
Reference Value = 41.52 V/m; Power Drift = 0.79 dB  
Peak SAR (extrapolated) = 268 W/kg  
**SAR(1 g) = 8.93 W/kg; SAR(10 g) = 2.53 W/kg**  
Smallest distance from peaks to all points 3 dB below = 5.6 mm  
Ratio of SAR at M2 to SAR at M1 = 45.2%  
Maximum value of SAR (measured) = 45.4 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

**System Check\_H5800**

DUT: D5GHzV2 - SN1124

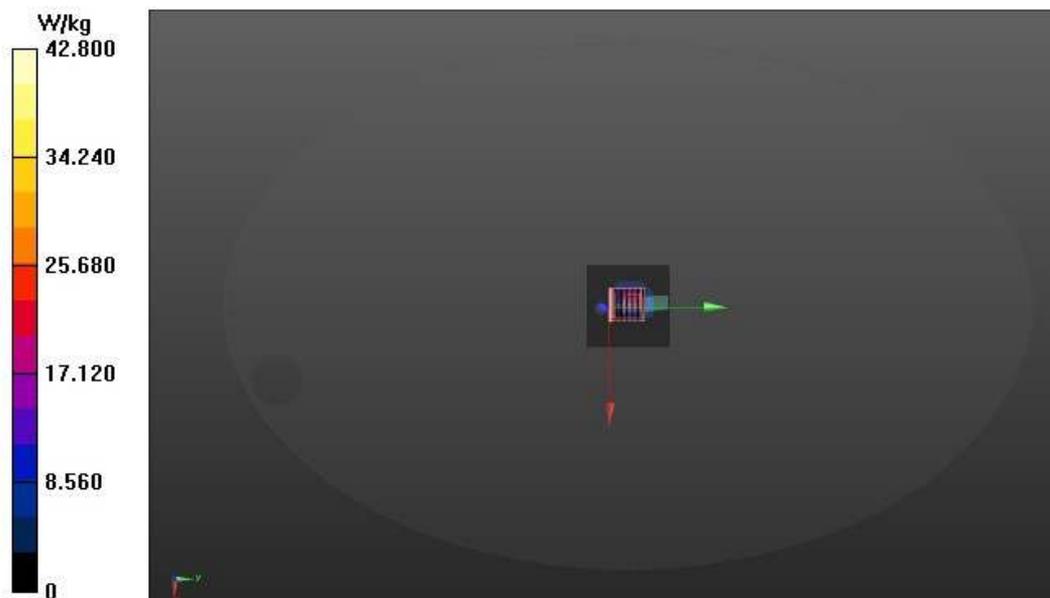
Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5800$  MHz,  $\sigma = 5.203$  S/m,  $\epsilon_r = 35.108$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5800 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (7x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm  
Maximum value of SAR (measured) = 25.0 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm  
Reference Value = 40.57 V/m; Power Drift = 0.77 dB  
Peak SAR (extrapolated) = 237 W/kg  
**SAR(1 g) = 8.42 W/kg; SAR(10 g) = 2.43 W/kg**  
Smallest distance from peaks to all points 3 dB below = 5.6 mm  
Ratio of SAR at M2 to SAR at M1 = 46.1%  
Maximum value of SAR (measured) = 42.8 W/kg



## 5.4. SAR Measurement Procedure

According to the SAR test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

- (a) Make EUT to transmit maximum output power
- (b) Measure conducted output power through RF cable
- (c) Place the EUT in the specific position of phantom
- (d) Perform SAR testing steps on the DASY system
- (e) Record the SAR value

### 5.4.1. Area & Zoom Scan Procedure

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. According to KDB 865664D01v01r03, the resolution for Area and Zoom scan is specified in the table below.

Items	$\leq 2$ GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan ( $\Delta x, \Delta y$ )	$\leq 15$ mm	$\leq 12$ mm	$\leq 12$ mm	$\leq 10$ mm	$\leq 10$ mm
Zoom Scan ( $\Delta x, \Delta y$ )	$\leq 8$ mm	$\leq 5$ mm	$\leq 5$ mm	$\leq 4$ mm	$\leq 4$ mm
Zoom Scan ( $\Delta z$ )	$\leq 5$ mm	$\leq 5$ mm	$\leq 4$ mm	$\leq 3$ mm	$\leq 2$ mm
Zoom Scan Volume	$\geq 30$ mm	$\geq 30$ mm	$\geq 28$ mm	$\geq 25$ mm	$\geq 22$ mm

Note:

When zoom scan is required and report SAR is  $\leq 1.4$  W/kg, the zoom scan resolution of  $\Delta x / \Delta y$  (2-3GHz:  $\leq 8$  mm, 3-4GHz:  $\leq 7$  mm, 4-6GHz:  $\leq 5$  mm) may be applied.

#### 5.4.2. Volume Scan Procedure

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

#### 5.4.3. Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

#### 5.4.4. Spatial Peak SAR Evaluation

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

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

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

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

#### 5.4.5. SAR Averaged Methods

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

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

## 6. SAR MEASUREMENT EVALUATION

### 6.1. EUT Configuration and Setting

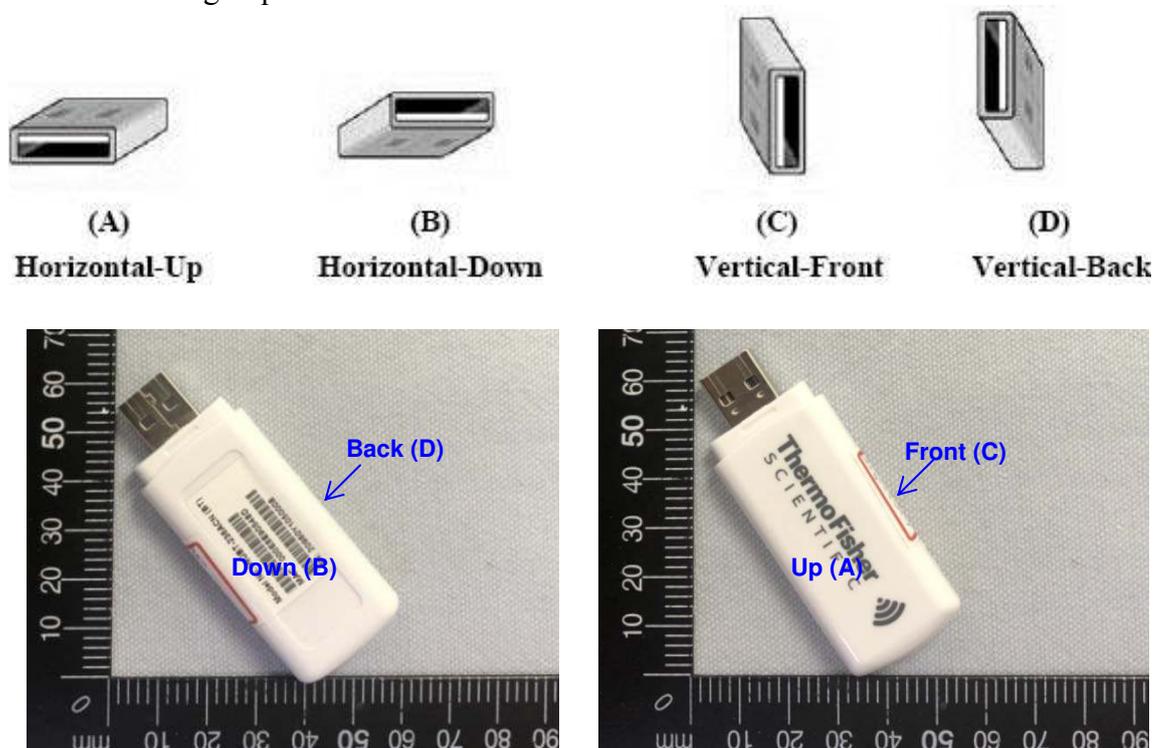
The EUT is set to transmit continuously at the power level according to power table with Low, Mid and High channel settings via “Win7\_MP\_Kit\_RTL11ac\_8822BU\_USB\_v6.01” tools.

Test all USB orientations [see figure 1 below: (A) Horizontal-Up, (B) Horizontal-Down, (C) Vertical-Front, and (D) Vertical-Back] with a device-to-phantom separation distance of 5 mm or less, according to KDB Publication 447498 D01 requirements. These test orientations are intended for the exposure conditions found in typical laptop/notebook/netbook or tablet computers with either horizontal or vertical USB connector configurations at various locations in the keyboard section of the computer. Current generation portable host computers should be used to establish the required SAR measurement separation distance.

The same test separation distance must be used to test all frequency bands and modes in each USB orientation. The typical Horizontal-Up USB connection (A), found in the majority of host computers, must be tested using an appropriate host computer. A host computer with either Vertical-Front (C) or Vertical-Back (D) USB connection should be used to test one of the vertical USB orientations. If a suitable host computer is not available for testing the Horizontal-Down (B) or the remaining Vertical USB orientation, a high quality USB cable, 12 inches or less, may be used for testing these other orientations. It must be documented that the USB cable does not influence the radiating characteristics and output power of the transmitter.

## 6.2. EUT Testing Position

The SAR testing required mode is listed as below.



Note: Per KDB 447498 D01

- a) For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:  
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)]  $\cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR,30 where
  - $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- b) For 100 MHz to 6 GHz and test separation distances  $> 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):<sup>32</sup>
  - 1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)  $\cdot (f(\text{MHz})/150)$ ]} mW, for 100 MHz to 1500 MHz
  - 2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)  $\cdot 10$ ]} mW, for  $> 1500$  MHz and  $\leq 6$  GHz

### 6.3. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using Agilent Dielectric Probe Kit and Agilent E5071C Vector Network Analyzer.

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		$\epsilon_r$	$\sigma$ [s/m]	
2450MHz	Reference result ± 5% window	39.2	1.8	N/A
		37.240 to 41.160	1.710 to 1.890	
	2020. 10. 21	38.645	1.860	22.6

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		$\epsilon_r$	$\sigma$ [s/m]	
5200MHz	Reference result ± 5% window	34.4	4.5	N/A
		32.680 to 36.120	4.275 to 4.725	
	2020. 10. 14	36.070	4.718	22.4

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		$\epsilon_r$	$\sigma$ [s/m]	
5500MHz	Reference result ± 5% window	34.0	4.79	N/A
		32.300 to 35.700	4.551 to 5.030	
	2020. 10. 14	35.339	4.923	22.4

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		$\epsilon_r$	$\sigma$ [s/m]	
5800MHz	Reference result ± 5% window	33.6	5.09	N/A
		31.920 to 35.280	4.836 to 5.345	
	2020. 10. 14	35.241	5.232	22.4

## 6.4. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

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

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or body)	1.60 W/kg
Spatial Average SAR (whole body)	0.08 W/kg
Spatial Peak SAR (10g for hands, feet, ankles and wrist)	4.00 W/kg

## 6.5. Conducted Power Measurement

### Note:

1. Per KDB 447498 D01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.  
Scale Factor = tune-up limit power (mW)/EUT Conducted power (mW), where tune-up limit is the maximum rated power among all production units.  
Scale SAR(W/kg)= Measured SAR(W/kg)\* Scaling Factor
2. Per KDB 447498 D01, for each exposure position, if the highest output channel reported SAR  $\leq 0.8$ W/kg, other channels SAR testing is not necessary.
3. Per KDB 248227 D01, for OFDM transmission configuration in the 2.4G and 5G bands. An initial test configuration is determined by the highest maximum output power including tune-up tolerance. When multiple transmission modes(802.11 a/g/n/ac/ax) have same maximum power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected.( i.e. a, g, n, ac then ax)
4. Per KDB 248227 D01, when the highest reported SAR for the initial test configuration (when applicable, include subsequent 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  $\leq 1.2$  W/kg, SAR is not required for that subsequent test configuration.
5. Per KDB 248227 D01, U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band.
6. Per KDB 248227 D01, When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested.
7. Per KDB 248227 D01, 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  $\leq 1.2$  W/kg.
8. Pursuant section 2.8.1(2) KDB 865664 D01, when the original highest measured SAR is  $\geq 0.80$  W/kg, repeat that measurement once.
9. Pursuant section 2.8.1(3) KDB 865664 D01, 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  $\geq 1.45$  W/kg (~ 10% from the 1-g SAR limit)

6.5.1. For WLAN Function

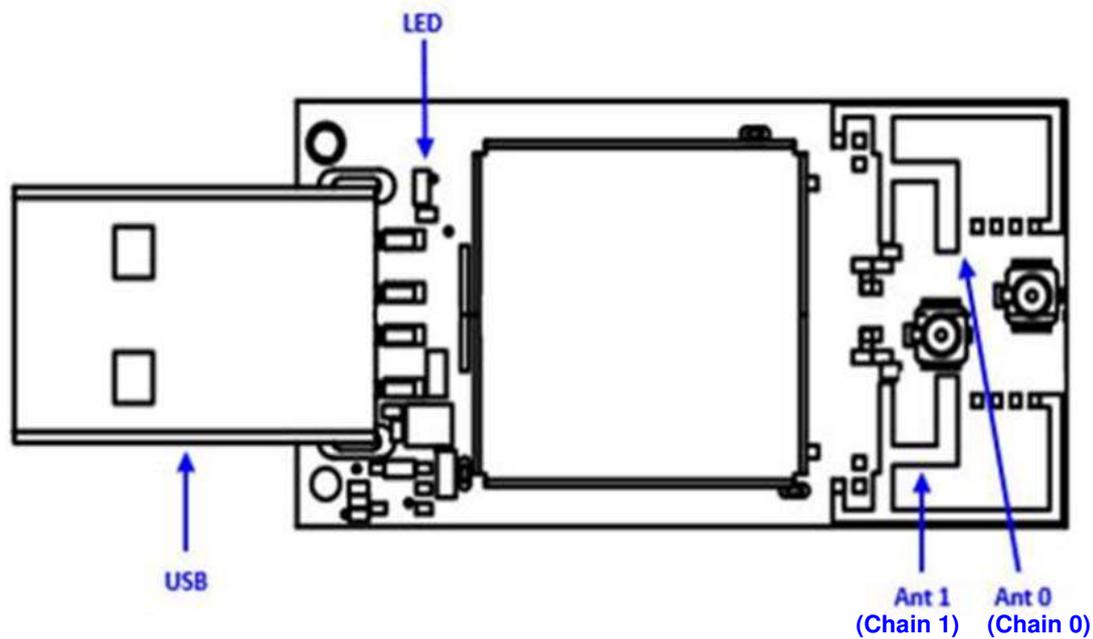
Type of Network	Channel	Frequency (MHz)	Output Power (dBm)						SAR Test
			Chain 0			Chain 1			
			Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11b	CH 1	2412	16.62	17.0	1.17	---	---	---	Yes
	CH 6	2437	16.43	16.5	---	---	---	---	No <sup>NOTE2</sup>
	CH 11	2462	16.51	17.0	---	---	---	---	
802.11g	CH 1	2412	13.01	13.5	---	---	---	---	No <sup>NOTE6</sup>
	CH 6	2437	15.61	16.0	---	---	---	---	
	CH 11	2462	13.48	13.5	---	---	---	---	
802.11n-HT20	CH 1	2412	10.72	11.0	---	11.45	11.5	---	No <sup>NOTE4-3</sup>
	CH 6	2437	14.55	15.0	1.11	14.33	14.5	1.04	Yes
	CH 11	2462	8.14	8.5	---	7.89	8.0	---	No <sup>NOTE4-3</sup>
802.11n-HT40	CH 3	2422	8.67	9.0	---	8.84	9.0	---	No <sup>NOTE4-3</sup>
	CH 6	2437	11.23	11.5	---	10.78	11.0	---	
	CH 9	2452	6.22	6.5	---	5.88	6.0	---	

Type of Network	Channel	Frequency (MHz)	Output Power (dBm)						SAR Test	
			Chain 0			Chain 1				
			Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor		
802.11a	NII-I	CH 36	14.87	15.0	---	---	---	---	No <sup>NOTE5-3</sup>	
		CH 40	14.77	15.0	---	---	---	---		
		CH 48	14.91	15.0	---	---	---	---		
	NII-2A	CH 52	14.85	15.0	---	---	---	---	No <sup>NOTE2</sup>	
		CH 60	14.87	15.0	---	---	---	---		
		CH 64	14.92	15.0	1.02	---	---	---		Yes
	NII-2C	CH 100	14.68	15.0	---	---	---	---	No <sup>NOTE2</sup>	
		CH 116	14.81	15.0	1.04	---	---	---		Yes
		CH 140	14.66	15.0	---	---	---	---		
	NII-III	CH 149	14.44	14.5	---	---	---	---	No <sup>NOTE2</sup>	
CH 157		14.36	14.5	---	---	---	---			
CH 165		14.79	15.0	1.05	---	---	---	Yes		
802.11n-HT20	NII-I	CH 36	11.34	11.5	---	10.56	11.0	---	No <sup>NOTE4-3</sup>	
		CH 40	10.72	11.0	---	10.81	11.0	---		
		CH 48	11.12	11.5	---	10.73	11.0	---		
	NII-2A	CH 52	13.79	14.5	---	13.63	14.5	---	No <sup>NOTE4-3</sup>	
		CH 60	13.88	14.5	1.03	13.76	14.5	1.06		Yes
		CH 64	13.82	14.5	---	13.67	14.5	---		No <sup>NOTE4-3</sup>
	NII-2C	CH 100	13.87	14.5	1.03	13.88	14.5	1.03	Yes	
		CH 116	13.95	14.5	---	13.72	14.5	---		
		CH 140	13.46	13.5	---	13.79	14.5	---		No <sup>NOTE4-3</sup>
	NII-III	CH 149	13.72	14.5	---	13.86	14.5	---	No <sup>NOTE4-3</sup>	
CH 157		13.82	14.5	1.04	13.88	14.5	1.03	Yes		
CH 165		13.58	14.5	---	13.78	14.5	---	No <sup>NOTE4-3</sup>		
802.11n-HT40	NII-I	CH 38	11.95	12.0	---	11.44	11.5	---	No <sup>NOTE4-3</sup>	
		CH 46	13.78	14.0	---	13.69	14.0	---		
	NII-2A	CH 54	13.81	14.0	---	13.76	14.0	---		
		CH 62	10.00	10.5	---	10.02	10.5	---		
	NII-2C	CH 102	10.75	11.0	---	10.99	11.0	---		
		CH 110	13.79	14.0	---	13.81	14.0	---		
	NII-III	CH 134	13.74	14.0	---	13.94	14.0	---		
		CH 151	13.52	14.0	---	13.52	14.0	---		
802.11ac-VHT80	NII-I	CH 52	9.04	9.5	---	8.93	9.0	---	No <sup>NOTE4-3</sup>	
		CH 58	7.13	7.5	---	7.05	7.5	---		
	NII-2A	CH 106	10.58	11.0	---	10.26	10.5	---		
		CH 122	10.47	10.5	---	10.56	11.0	---		
	NII-III	CH 155	10.69	11.0	---	10.91	11.0	---		

### 6.5.2. For BT Function

Type of Network	Channel	Frequency (MHz)	Average Power (dBm)	Tune-Up Limit	Scale Factor	SAR Test
Bluetooth-GFSK	CH 0	2402	0.07	0.5	---	No
	CH 39	2441	-0.23	0.0	---	No
	CH 78	2480	0.42	0.5	---	No
Bluetooth-8-DPSK	CH 0	2402	-0.63	0.0	---	No
	CH 39	2441	-1.01	-1.0	---	No
	CH 78	2480	-0.46	0.0	1.11	Yes
BLE	CH 37	2402	0.19	0.5	---	No
	CH 17	2440	0.91	1.0	---	No
	CH 39	2480	1.19	1.5	1.07	Yes

## 6.6. Exposure Positions Consideration



Ant\_0(Chain 0): RF Antenna for WiFi 2.4GHz/5GHz

Ant\_1(Chain 1): RF Antenna for WiFi 2.4GHz/5GHz & Bluetooth

### 6.7. SAR Pretest Test Result

Test Date	2020. 10. 14 ~ 15	Temp./Hum.	23°C/57~58%
Test Voltage	DC 5V (Via Notebook PC)	Tested by	Brian Hsieh

Liquid Temperature : 22.4°C				Depth of Liquid: > 15cm			
<b>Test Mode: 5GHz</b>							
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	SAR 1g (W/kg)	Limit (W/kg)
802.11n-HT20							
Antenna: Chain 0							
22	Up (A)	Fixed	0.5	5500	13.87	0.218	1.60
Antenna: Chain 1							
23	Up (A)	Fixed	0.5	5500	13.88	0.346	1.60
802.11n-HT40							
Antenna: Chain 0							
16	Up (A)	Fixed	0.5	5795	13.55	0.124	1.60
Antenna: Chain 1							
15	Up (A)	Fixed	0.5	5795	13.67	0.091	1.60
802.11ac-VHT80							
Antenna: Chain 0							
17	Up (A)	Fixed	0.5	5775	10.69	0.026	1.60
Antenna: Chain 1							
18	Up (A)	Fixed	0.5	5775	10.91	0.047	1.60

Note: We pretested all bandwidth configurations at horizontal-up side and pick up worst configuration (802.11n-HT20) to test other sides.

### 6.8. SAR Test Result

Test Date	2020. 10. 21	Temp./Hum.	23°C/53%
Test Voltage	DC 5V (Via Notebook PC)	Tested by	Brian Hsieh

Liquid Temperature : 22.6°C							Depth of Liquid: > 15cm			
<b>Test Mode: 2.4GHz</b>										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Scale SAR	Limit (W/kg)
802.11b										
Antenna: Chain 0										
54	Up (A)	Fixed	0.5	2412	16.32	17.0	0.354	1.17	0.414	1.60
61	Back (D)	Fixed	0.5	2412	16.32	17.0	0.027	1.17	0.032	1.60
62	Down (B)	Fixed	0.5	2412	16.32	17.0	0.306	1.17	0.358	1.60
66	Front (C)	Fixed	0.5	2412	16.32	17.0	0.027	1.17	0.032	1.60

Liquid Temperature : 22.6°C							Depth of Liquid: > 15cm			
<b>Test Mode: 2.4GHz</b>										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Scale SAR	Limit (W/kg)
802.11n-HT20										
Antenna: Chain 0										
55	Up (A)	Fixed	0.5	2437	14.55	15.0	0.312	1.11	0.346	1.60
59	Back (D)	Fixed	0.5	2437	14.55	15.0	0.018	1.11	0.020	1.60
64	Down (B)	Fixed	0.5	2437	14.55	15.0	0.179	1.11	0.199	1.60
68	Front (C)	Fixed	0.5	2437	14.55	15.0	0.021	1.11	0.023	1.60
Antenna: Chain 1										
56	Up (A)	Fixed	0.5	2437	14.33	14.5	0.182	1.04	0.189	1.60
60	Back (D)	Fixed	0.5	2437	14.33	14.5	0.097	1.04	0.101	1.60
65	Down (B)	Fixed	0.5	2437	14.33	14.5	0.130	1.04	0.135	1.60
69	Front (C)	Fixed	0.5	2437	14.33	14.5	0.119	1.04	0.124	1.60

Test Date	2020. 10. 21	Temp./Hum.	23°C/53%
Test Voltage	DC 5V (Via Notebook PC)	Tested by	Brian Hsieh

Liquid Temperature : 22.6°C						Depth of Liquid: > 15cm				
<b>Test Mode: BT</b>										
8DPSK										
Antenna: Chain 1										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Scale SAR	Limit (W/kg)
70	Up (A)	Fixed	0.5	2480	-0.46	0.0	0.00113	1.11	0.001	1.60
76	Back (D)	Fixed	0.5	2480	-0.46	0.0	0.00429	1.11	0.005	1.60
74	Down (B)	Fixed	0.5	2480	-0.46	0.0	0.012	1.11	0.013	1.60
72	Front (C)	Fixed	0.5	2480	-0.46	0.0	0.0025	1.11	0.003	1.60

Liquid Temperature : 22.6°C						Depth of Liquid: > 15cm				
<b>Test Mode: BLE</b>										
BLE										
Antenna: Chain 1										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Scale SAR	Limit (W/kg)
71	Up (A)	Fixed	0.5	2480	1.19	1.5	0.00532	1.07	0.006	1.60
77	Back (D)	Fixed	0.5	2480	1.19	1.5	0.00674	1.07	0.007	1.60
75	Down (B)	Fixed	0.5	2480	1.19	1.5	0.00657	1.07	0.007	1.60
73	Front (C)	Fixed	0.5	2480	1.19	1.5	0.00291	1.07	0.003	1.60

Test Date	2020. 10. 14 ~ 15	Temp./Hum.	23°C/57~58%
Test Voltage	DC 5V (Via Notebook PC)	Tested by	Brian Hsieh

Liquid Temperature : 22.4°C						Depth of Liquid: > 15cm				
<b>Test Mode: 5GHz</b>										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Scale SAR	Limit (W/kg)
802.11a										
Antenna: Chain 0										
1	Up (A)	Fixed	0.5	5320	14.92	15.0	0.211	1.02	0.215	1.60
44	Back (D)	Fixed	0.5	5320	14.92	15.0	0.032	1.02	0.033	1.60
35	Down (B)	Fixed	0.5	5320	14.92	15.0	0.179	1.02	0.182	1.60
26	Front (C)	Fixed	0.5	5320	14.92	15.0	0.232	1.02	0.236	1.60
2	Up (A)	Fixed	0.5	5580	14.81	15.0	0.236	1.04	0.247	1.60
45	Back (D)	Fixed	0.5	5580	14.81	15.0	0.032	1.04	0.033	1.60
36	Down (B)	Fixed	0.5	5580	14.81	15.0	0.196	1.04	0.205	1.60
27	Front (C)	Fixed	0.5	5580	14.81	15.0	0.372	1.04	0.389	1.60
3	Up (A)	Fixed	0.5	5825	14.79	15.0	0.126	1.05	0.132	1.60
46	Back (D)	Fixed	0.5	5825	14.79	15.0	0.0022	1.05	0.002	1.60
37	Down (B)	Fixed	0.5	5825	14.79	15.0	0.140	1.05	0.147	1.60
28	Front (C)	Fixed	0.5	5825	14.79	15.0	0.337	1.05	0.354	1.60

Test Date	2020. 10. 14 ~ 15	Temp./Hum.	23°C/57~58%
Test Voltage	DC 5V (Via Notebook PC)	Tested by	Brian Hsieh

Liquid Temperature : 22.4°C							Depth of Liquid: > 15cm			
<b>Test Mode: 5GHz</b>										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Scale SAR	Limit (W/kg)
802.11n-HT20										
Antenna: Chain 0										
20	Up (A)	Fixed	0.5	5300	13.88	14.5	0.185	1.15	0.213	1.60
47	Back (D)	Fixed	0.5	5300	13.88	14.5	0.033	1.15	0.038	1.60
38	Down (B)	Fixed	0.5	5300	13.88	14.5	0.117	1.15	0.135	1.60
29	Front (C)	Fixed	0.5	5300	13.88	14.5	0.227	1.15	0.262	1.60
22	Up (A)	Fixed	0.5	5500	13.87	14.5	0.218	1.16	0.252	1.60
49	Back (D)	Fixed	0.5	5500	13.87	14.5	0.031	1.16	0.036	1.60
40	Down (B)	Fixed	0.5	5500	13.87	14.5	0.128	1.16	0.148	1.60
31	Front (C)	Fixed	0.5	5500	13.87	14.5	0.291	1.16	0.336	1.60
24	Up (A)	Fixed	0.5	5785	13.82	14.5	0.228	1.17	0.267	1.60
51	Back (D)	Fixed	0.5	5785	13.82	14.5	0.021	1.17	0.025	1.60
42	Down (B)	Fixed	0.5	5785	13.82	14.5	0.091	1.17	0.106	1.60
33	Front (C)	Fixed	0.5	5785	13.82	14.5	0.363	1.17	0.425	1.60
Antenna: Chain 1										
21	Up (A)	Fixed	0.5	5300	13.76	14.5	0.182	1.19	0.216	1.60
48	Back (D)	Fixed	0.5	5300	13.76	14.5	0.194	1.19	0.230	1.60
39	Down (B)	Fixed	0.5	5300	13.76	14.5	0.098	1.19	0.116	1.60
30	Front (C)	Fixed	0.5	5300	13.76	14.5	0.053	1.19	0.063	1.60
23	Up (A)	Fixed	0.5	5500	13.88	14.5	0.346	1.15	0.399	1.60
50	Back (D)	Fixed	0.5	5500	13.88	14.5	0.402	1.15	0.464	1.60
41	Down (B)	Fixed	0.5	5500	13.88	14.5	0.185	1.15	0.213	1.60
32	Front (C)	Fixed	0.5	5500	13.88	14.5	0.108	1.15	0.125	1.60
25	Up (A)	Fixed	0.5	5785	13.88	14.5	0.159	1.15	0.183	1.60
52	Back (D)	Fixed	0.5	5785	13.88	14.5	0.274	1.15	0.316	1.60
43	Down (B)	Fixed	0.5	5785	13.88	14.5	0.082	1.15	0.095	1.60
34	Front (C)	Fixed	0.5	5785	13.88	14.5	0.018	1.15	0.021	1.60



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*APPENDIX A*

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# APPENDIX A

## GRAPH RESULT

(Model:100097489)

## A.1. SAR Pretest Test Result

Page 1 of 1

Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P22 802.11n-HT20 CH60 5500MHz antA Up**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz;  $\sigma = 4.954$  S/m;  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

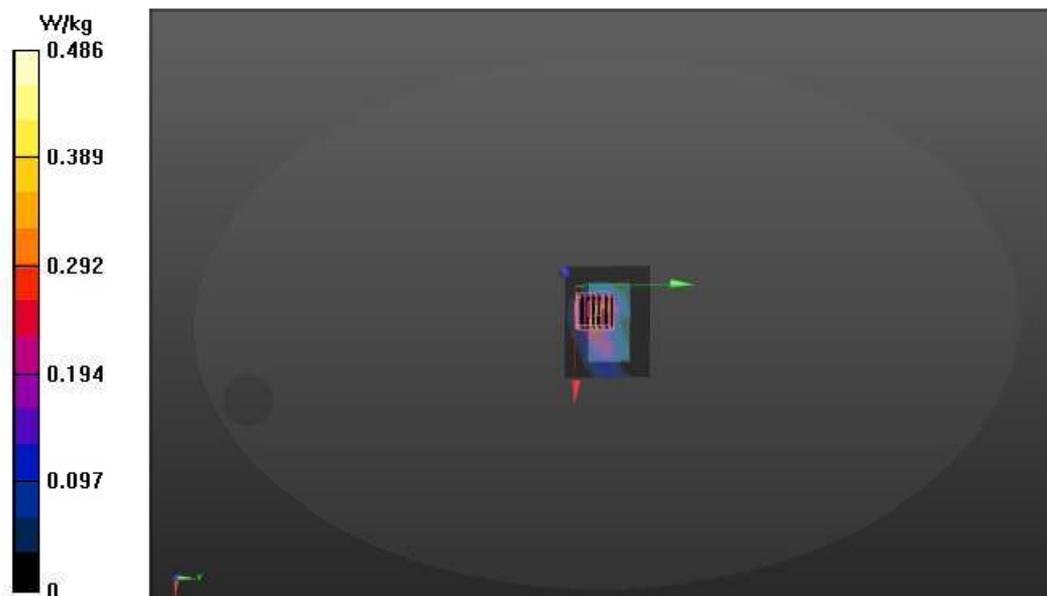
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm  
Maximum value of SAR (measured) = 0.426 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm  
Reference Value = 6.860 V/m; Power Drift = -0.28 dB  
Peak SAR (extrapolated) = 1.03 W/kg  
SAR(1 g) = 0.218 W/kg; SAR(10 g) = 0.072 W/kg  
Smallest distance from peaks to all points 3 dB below = 7.9 mm  
Ratio of SAR at M2 to SAR at M1 = 32.1%  
Maximum value of SAR (measured) = 0.486 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P23 802.11n-HT20 CH60 5500MHz antB Up**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz;  $\sigma = 4.954$  S/m;  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.706 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 6.792 V/m; Power Drift = 1.10 dB

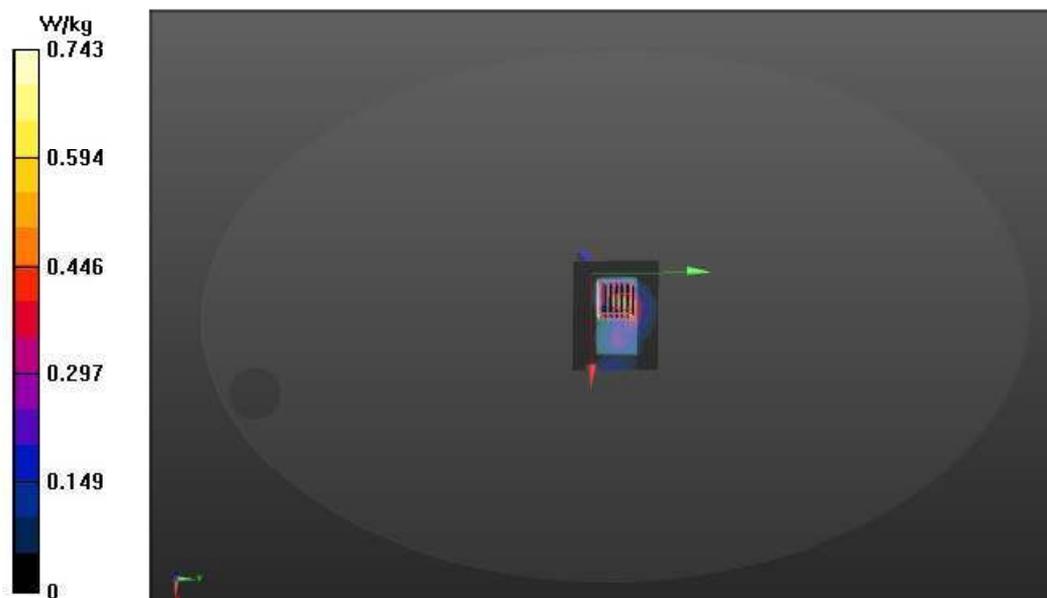
Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 0.346 W/kg; SAR(10 g) = 0.102 W/kg

Smallest distance from peaks to all points 3 dB below = 7.5 mm

Ratio of SAR at M2 to SAR at M1 = 39.2%

Maximum value of SAR (measured) = 0.743 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P16 802.11n40 CH159 5795MHz antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_40 (0); Frequency: 5795 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5795$  MHz;  $\sigma = 5.173$  S/m;  $\epsilon_r = 35.865$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5795 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.234 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 4.810 V/m; Power Drift = 0.79 dB

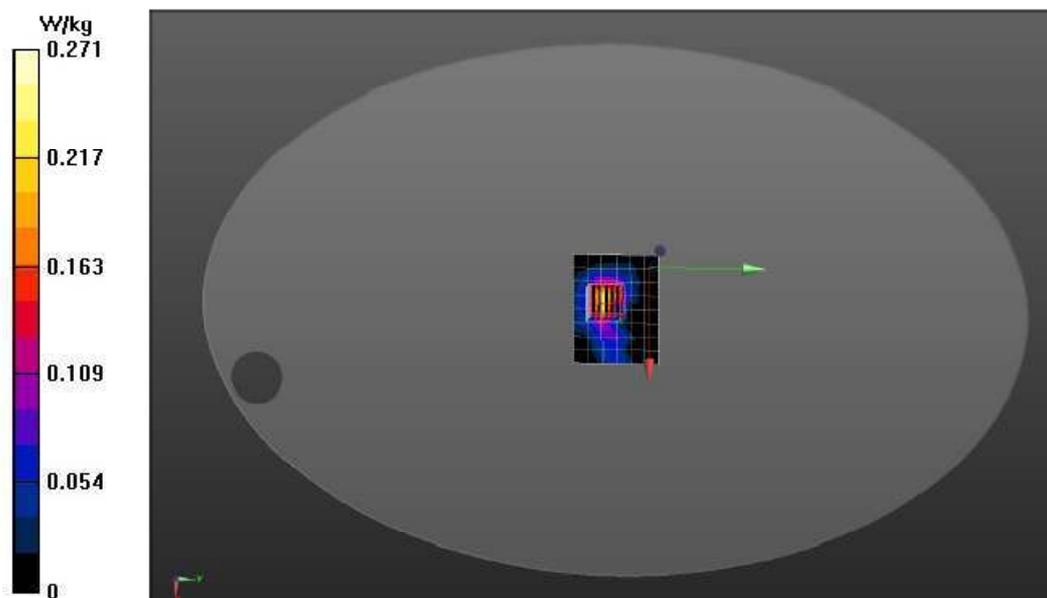
Peak SAR (extrapolated) = 0.556 W/kg

SAR(1 g) = 0.124 W/kg; SAR(10 g) = 0.041 W/kg

Smallest distance from peaks to all points 3 dB below = 8.7 mm

Ratio of SAR at M2 to SAR at M1 = 38.2%

Maximum value of SAR (measured) = 0.271 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P15 802.11n40 CH159 5795MHz antB**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_40 (0); Frequency: 5795 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5795$  MHz;  $\sigma = 5.173$  S/m;  $\epsilon_r = 35.865$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5795 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.163 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 2.237 V/m; Power Drift = 1.80 dB

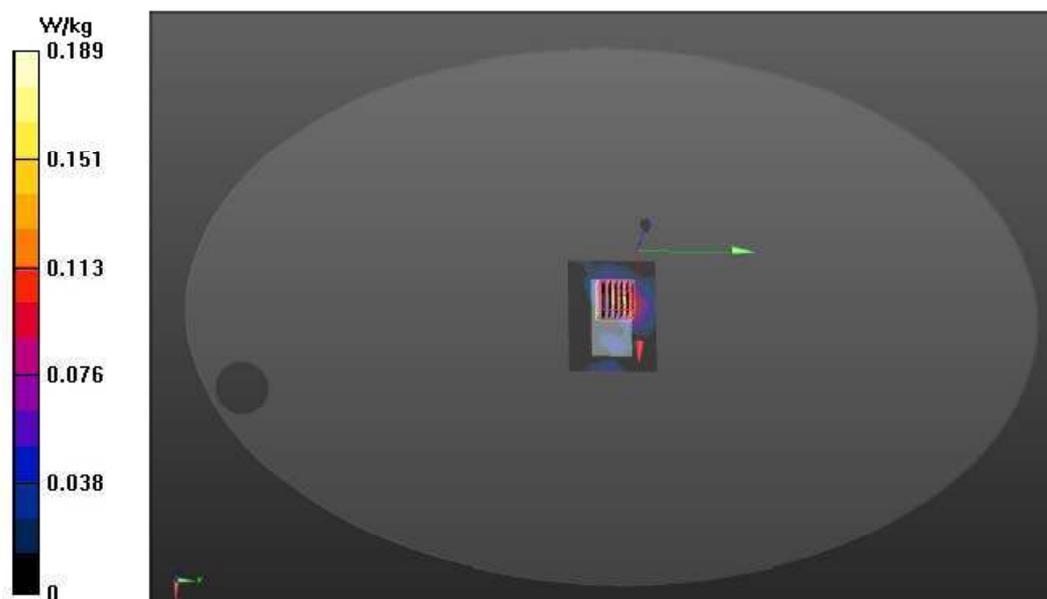
Peak SAR (extrapolated) = 0.423 W/kg

SAR(1 g) = 0.091 W/kg; SAR(10 g) = 0.028 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 31.7%

Maximum value of SAR (measured) = 0.189 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P18 802.11ac-VHT80 CH155 5775MHz antB**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11VHT\_80 (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5775$  MHz;  $\sigma = 5.095$  S/m;  $\epsilon_r = 36.183$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5775 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0678 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 0.8220 V/m; Power Drift = 0.11 dB

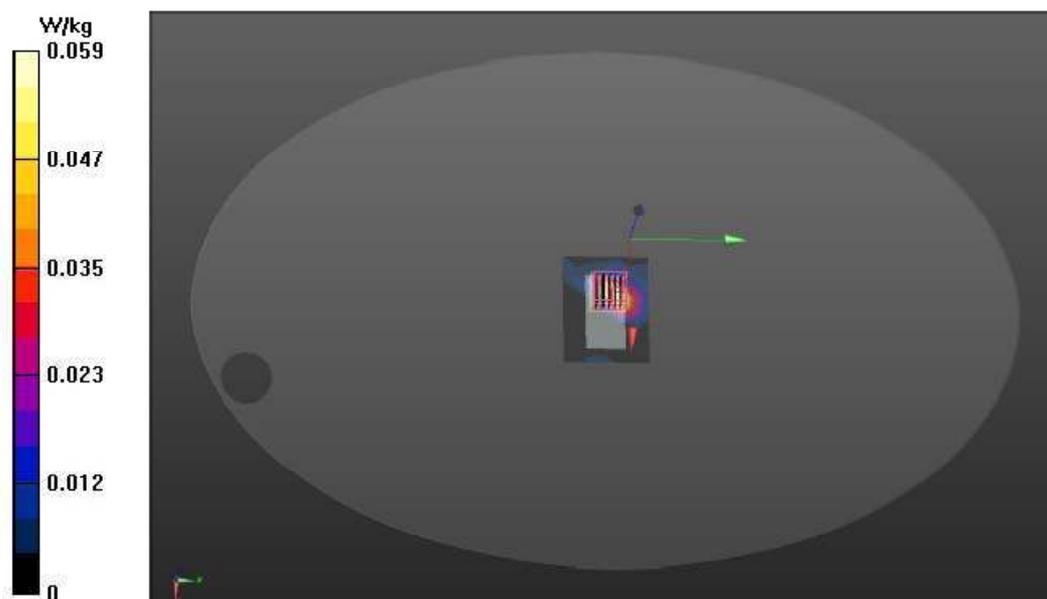
Peak SAR (extrapolated) = 0.180 W/kg

SAR(1 g) = 0.026 W/kg; SAR(10 g) = 0.00746 W/kg

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 37.3%

Maximum value of SAR (measured) = 0.0587 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P17 802.11ac-VHT80 CH155 5775MHz antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11VHT\_80 (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5775$  MHz;  $\sigma = 5.095$  S/m;  $\epsilon_r = 36.183$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5775 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0955 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 2.796 V/m; Power Drift = 0.96 dB

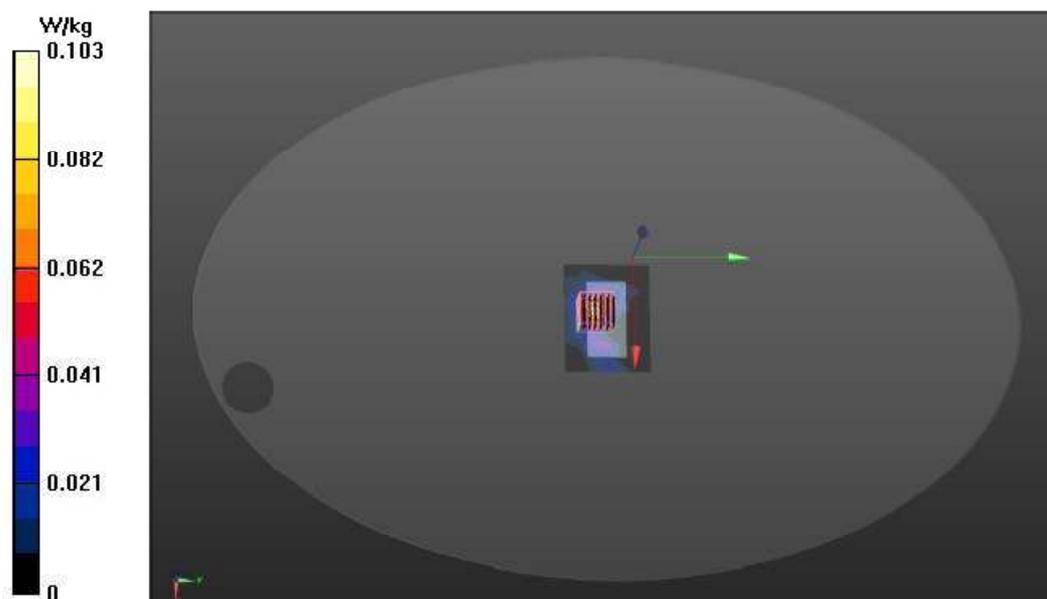
Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.014 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 36.5%

Maximum value of SAR (measured) = 0.103 W/kg



## A.2. SAR Test Result

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Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P54 802.11b CH1 2412MHz Up antA

DUT: 100097489

Communication System: UID 0, WIFI 2.4G 802.11B (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2412$  MHz,  $\sigma = 1.815$  S/m,  $\epsilon_r = 38.678$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2412 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.286 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 14.06 V/m; Power Drift = -0.98 dB

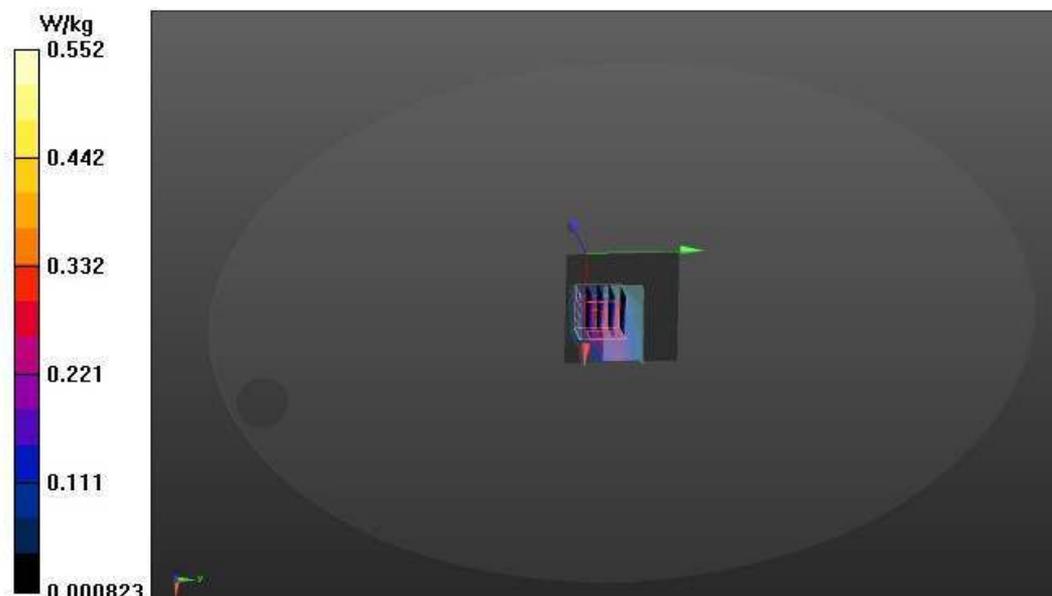
Peak SAR (extrapolated) = 0.804 W/kg

**SAR(1 g) = 0.354 W/kg; SAR(10 g) = 0.155 W/kg**

Smallest distance from peaks to all points 3 dB below = 8.6 mm

Ratio of SAR at M2 to SAR at M1 = 44.6%

Maximum value of SAR (measured) = 0.552 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P61 802.11b CH1 2412MHz Back antA

DUT: 100097489

Communication System: UID 0, WIFI 2.4G 802.11B (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2412$  MHz,  $\sigma = 1.815$  S/m,  $\epsilon_r = 38.678$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2412 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.0353 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.224 V/m; Power Drift = 1.20 dB

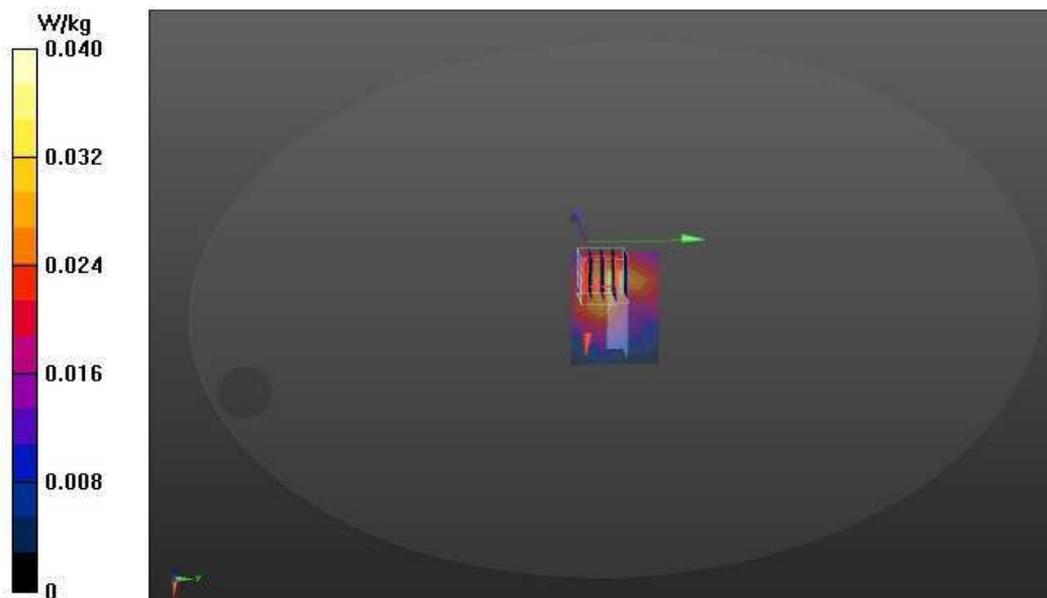
Peak SAR (extrapolated) = 0.0570 W/kg

**SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.014 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 41.7%

Maximum value of SAR (measured) = 0.0400 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P62 802.11b CH1 2412MHz Down antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11B (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2412$  MHz,  $\sigma = 1.815$  S/m,  $\epsilon_r = 38.678$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2412 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.358 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 17.73 V/m; Power Drift = -1.54 dB

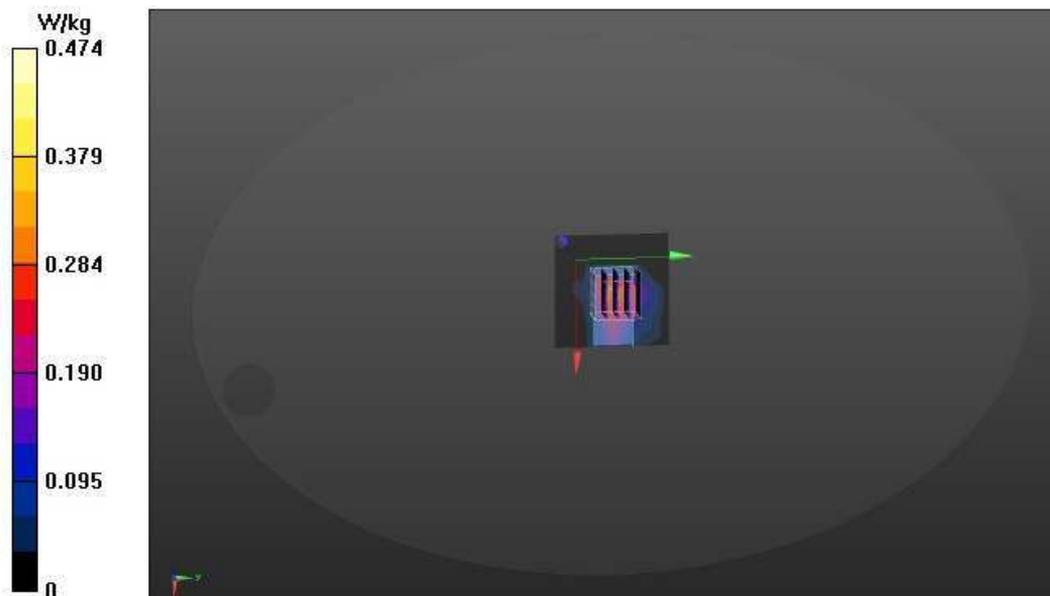
Peak SAR (extrapolated) = 0.653 W/kg

**SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.141 W/kg**

Smallest distance from peaks to all points 3 dB below = 10.2 mm

Ratio of SAR at M2 to SAR at M1 = 46.5%

Maximum value of SAR (measured) = 0.474 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P66 802.11b CH1 2412MHz Front antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11B (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2412$  MHz,  $\sigma = 1.815$  S/m,  $\epsilon_r = 38.678$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2412 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.0387 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 3.409 V/m; Power Drift = 1.25 dB

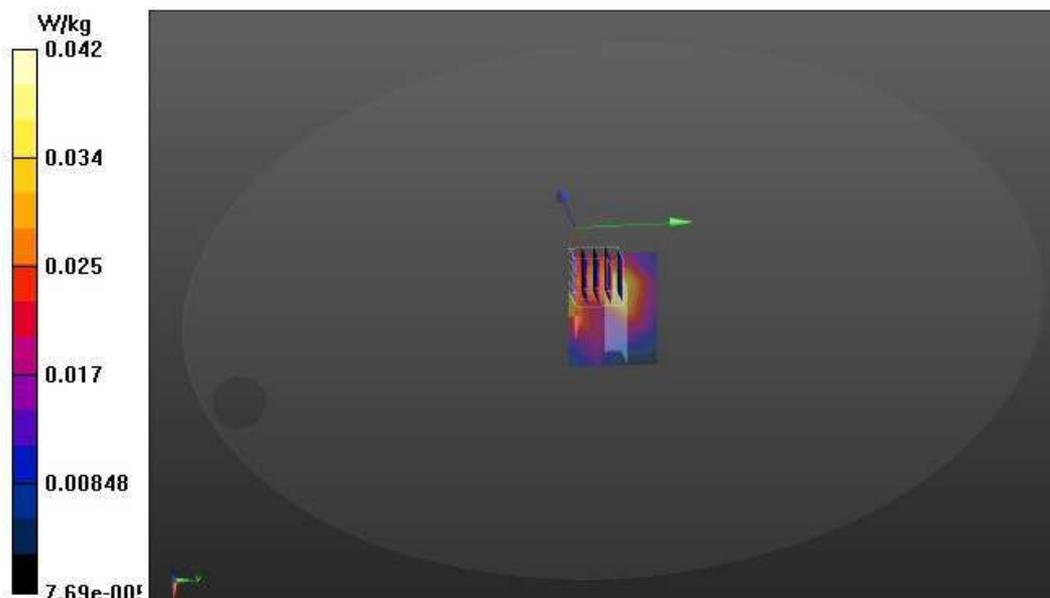
Peak SAR (extrapolated) = 0.153 W/kg

**SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.015 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 46.2%

Maximum value of SAR (measured) = 0.0421 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P55 802.11n-HT20 CH6 2437MHz Up antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.383 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 15.02 V/m; Power Drift = -0.17 dB

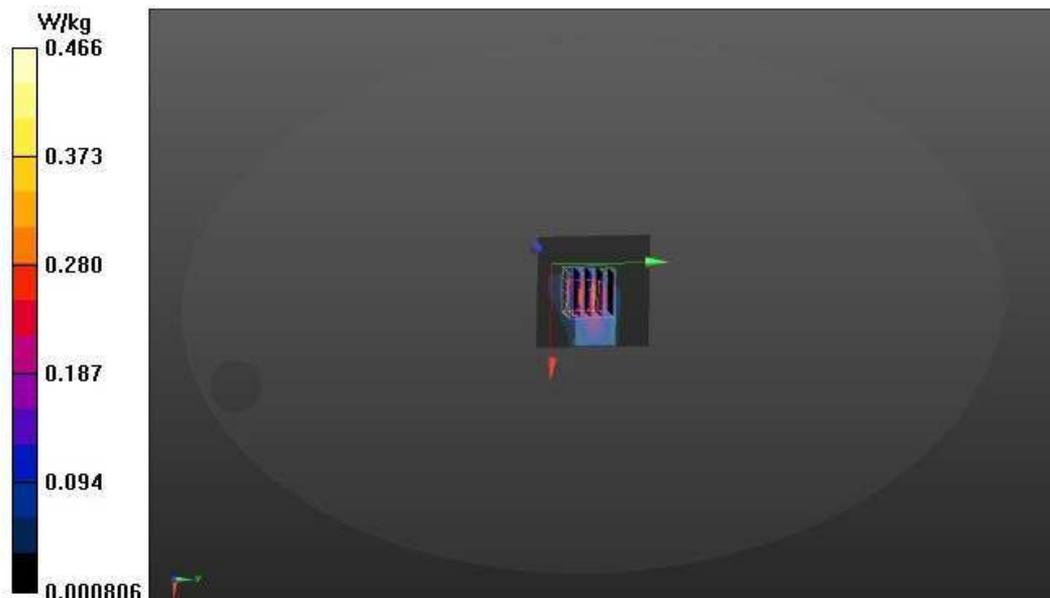
Peak SAR (extrapolated) = 0.719 W/kg

**SAR(1 g) = 0.312 W/kg; SAR(10 g) = 0.133 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.3 mm

Ratio of SAR at M2 to SAR at M1 = 44.8%

Maximum value of SAR (measured) = 0.466 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P59 802.11n-HT20 CH6 2437MHz Back antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.0243 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 0.8090 V/m; Power Drift = 0.69 dB

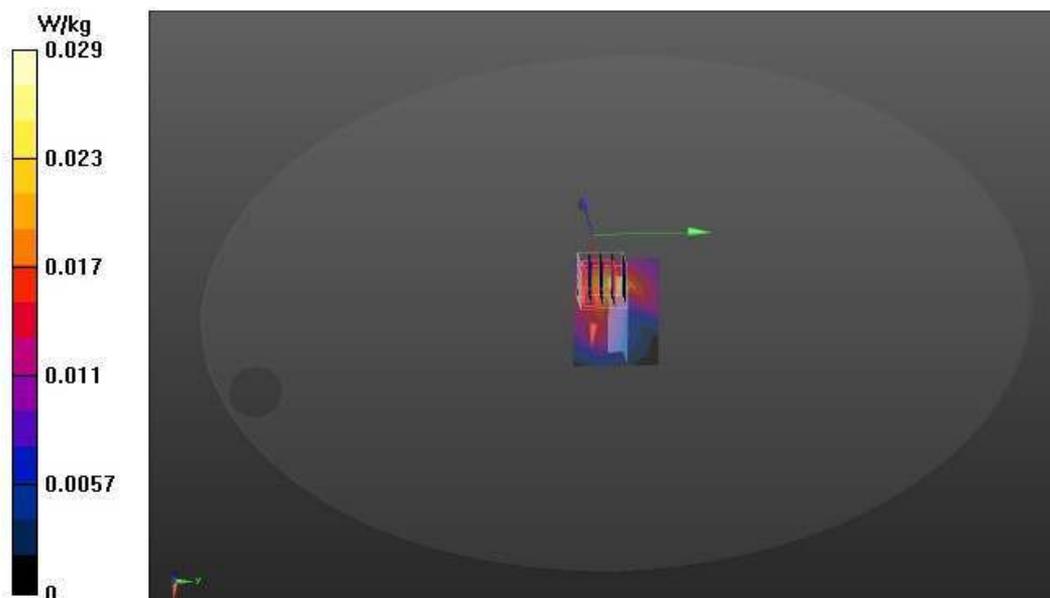
Peak SAR (extrapolated) = 0.0370 W/kg

**SAR(1 g) = 0.018 W/kg; SAR(10 g) = 0.00903 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 47.1%

Maximum value of SAR (measured) = 0.0285 W/kg



0.02

Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P64 802.11n-HT20 CH6 2437MHz Down antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.179 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 11.61 V/m; Power Drift = 0.11 dB

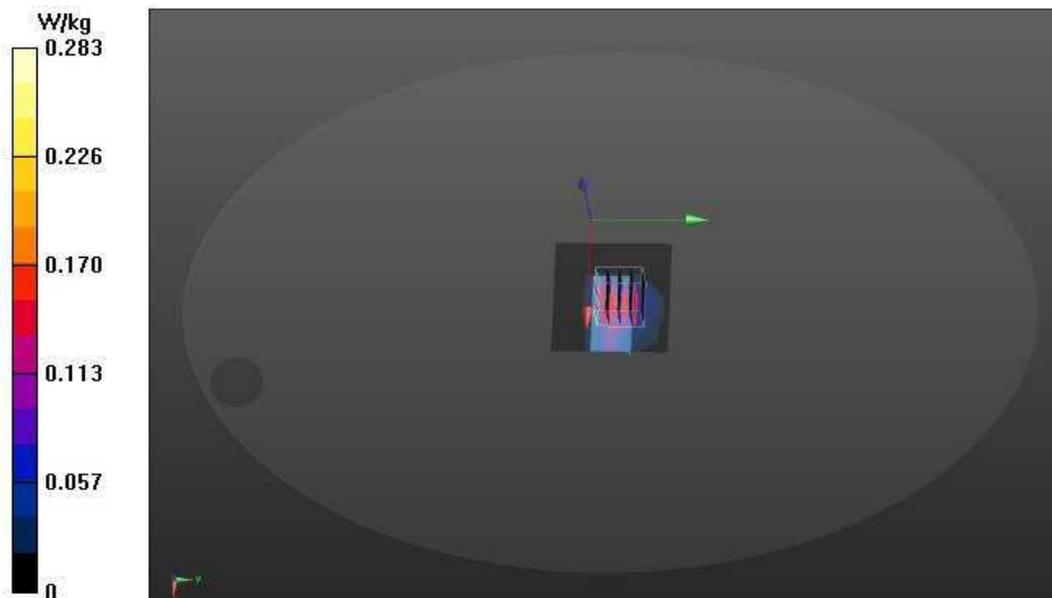
Peak SAR (extrapolated) = 0.395 W/kg

**SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.081 W/kg**

Smallest distance from peaks to all points 3 dB below = 10.1 mm

Ratio of SAR at M2 to SAR at M1 = 45.4%

Maximum value of SAR (measured) = 0.283 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P68 802.11n-HT20 CH6 2437MHz Front antA**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.0242 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 1.789 V/m; Power Drift = 0.77 dB

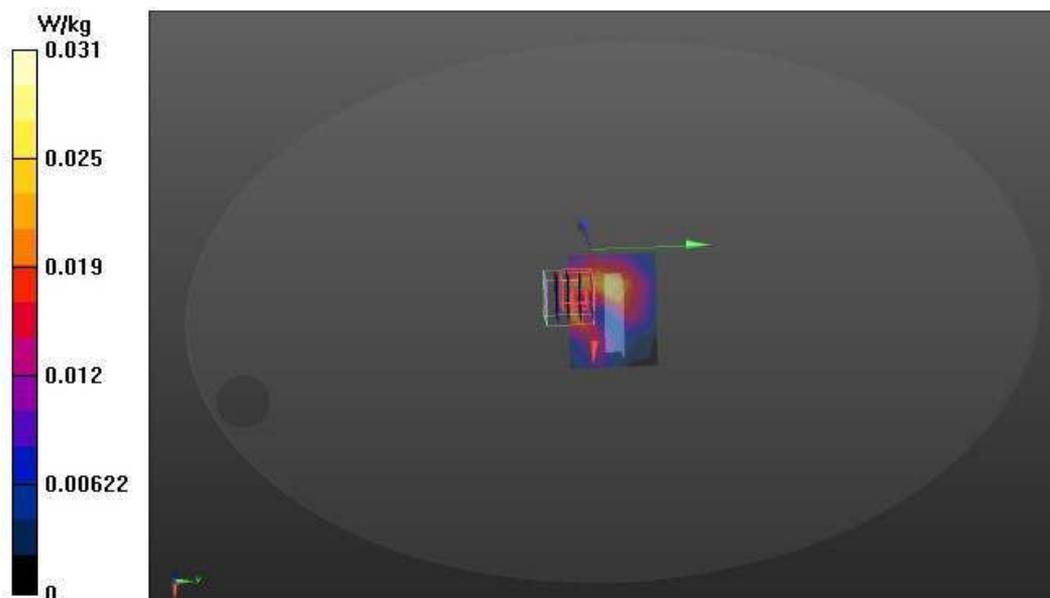
Peak SAR (extrapolated) = 0.0390 W/kg

**SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.00983 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 46.3%

Maximum value of SAR (measured) = 0.0311 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P56 802.11n-HT20 CH6 2437MHz Up antB

DUT: 100097489

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz, Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.186 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 9.788 V/m; Power Drift = 0.18 dB

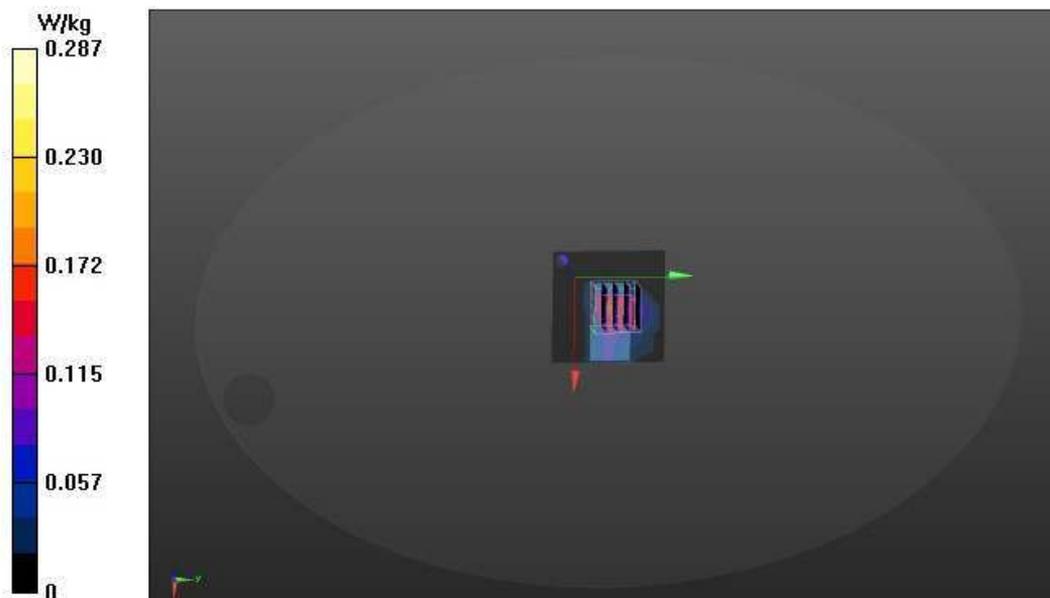
Peak SAR (extrapolated) = 0.404 W/kg

**SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.078 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.1 mm

Ratio of SAR at M2 to SAR at M1 = 47.4%

Maximum value of SAR (measured) = 0.287 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P60 802.11n-HT20 CH6 2437MHz Back antB**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz, Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.0875 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 9.399 V/m; Power Drift = -0.07 dB

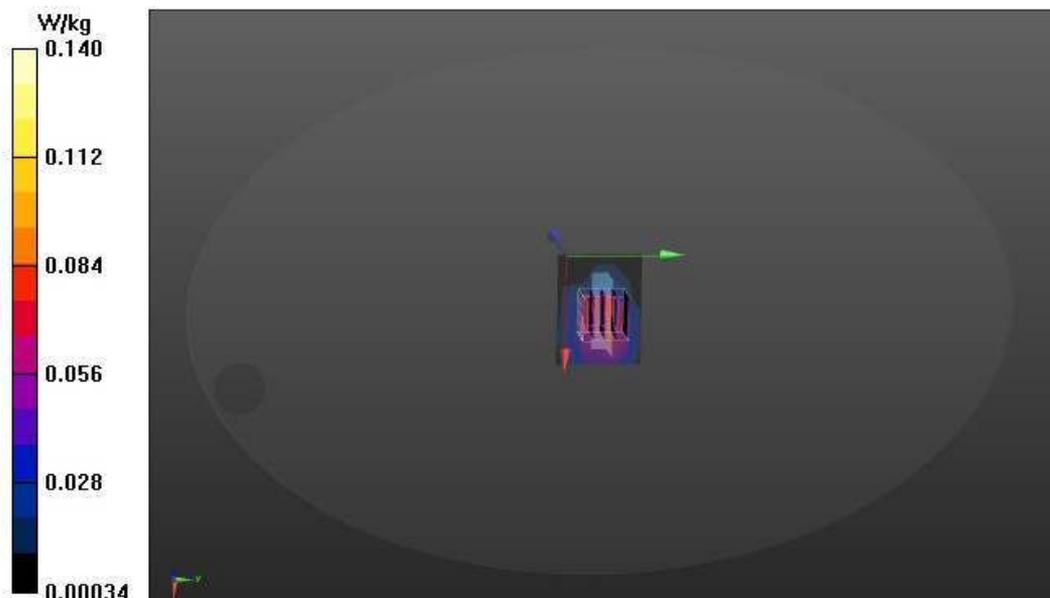
Peak SAR (extrapolated) = 0.216 W/kg

**SAR(1 g) = 0.097 W/kg; SAR(10 g) = 0.044 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.3 mm

Ratio of SAR at M2 to SAR at M1 = 45.8%

Maximum value of SAR (measured) = 0.140 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P65 802.11n-HT20 CH6 2437MHz Down antB**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.129 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 10.16 V/m; Power Drift = -0.14 dB

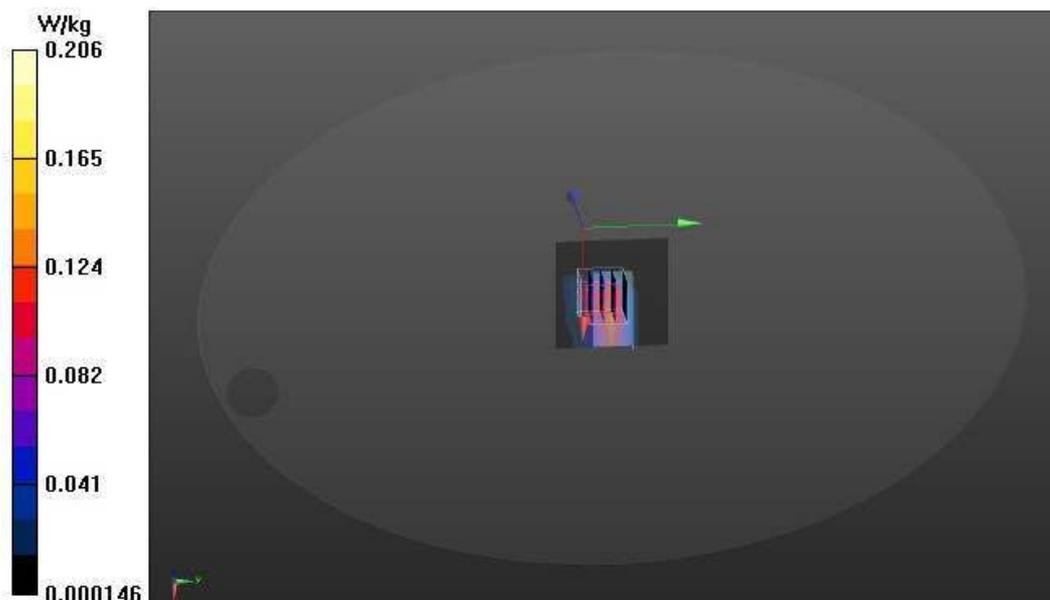
Peak SAR (extrapolated) = 0.285 W/kg

**SAR(1 g) = 0.130 W/kg; SAR(10 g) = 0.059 W/kg**

Smallest distance from peaks to all points 3 dB below = 10.1 mm

Ratio of SAR at M2 to SAR at M1 = 46.5%

Maximum value of SAR (measured) = 0.206 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P69 802.11n-HT20 CH6 2437MHz Front antB**

**DUT: 100097489**

Communication System: UID 0, WIFI 2.4G 802.11HT\_20 (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2437$  MHz,  $\sigma = 1.846$  S/m,  $\epsilon_r = 38.664$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2437 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 0.136 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 10.50 V/m; Power Drift = -0.61 dB

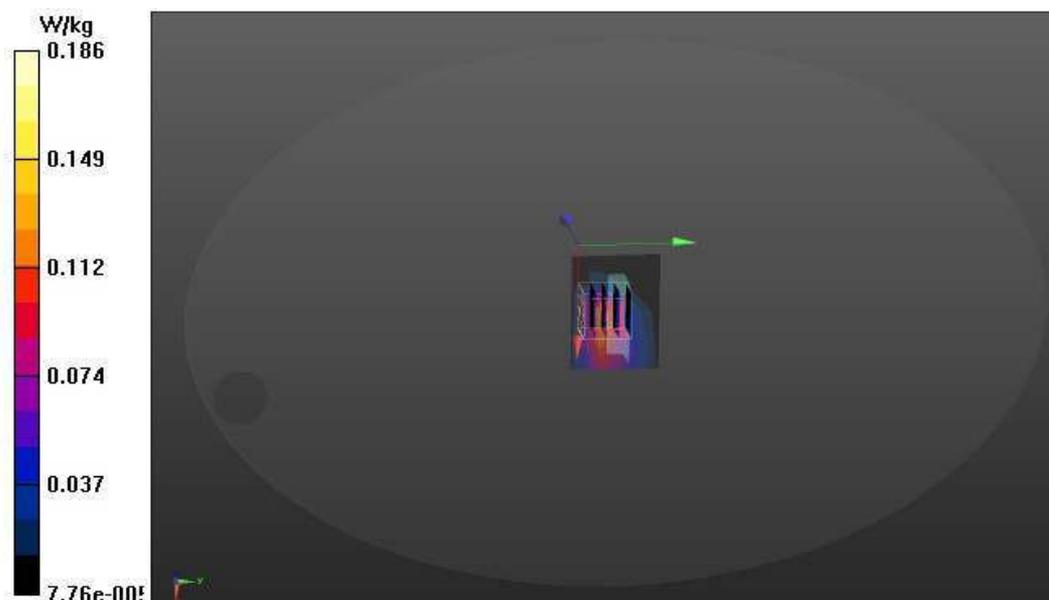
Peak SAR (extrapolated) = 0.289 W/kg

**SAR(1 g) = 0.119 W/kg; SAR(10 g) = 0.052 W/kg**

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 44.3%

Maximum value of SAR (measured) = 0.186 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P70 8DPSK CH78 2480MHz Up

DUT: 100097489

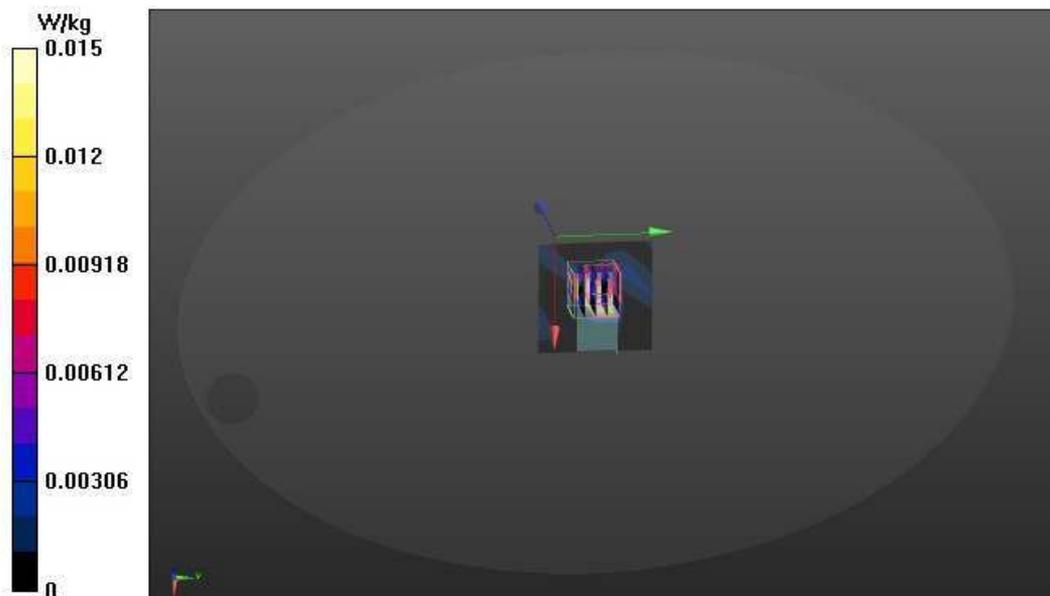
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.0309 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 0.1080 V/m; Power Drift = 0.13 dB  
Peak SAR (extrapolated) = 0.0300 W/kg  
**SAR(1 g) = 0.00113 W/kg; SAR(10 g) = 0.000192 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 35.6%  
Maximum value of SAR (measured) = 0.0153 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P76 8DPSK CH78 2480MHz Back

DUT: 100097489

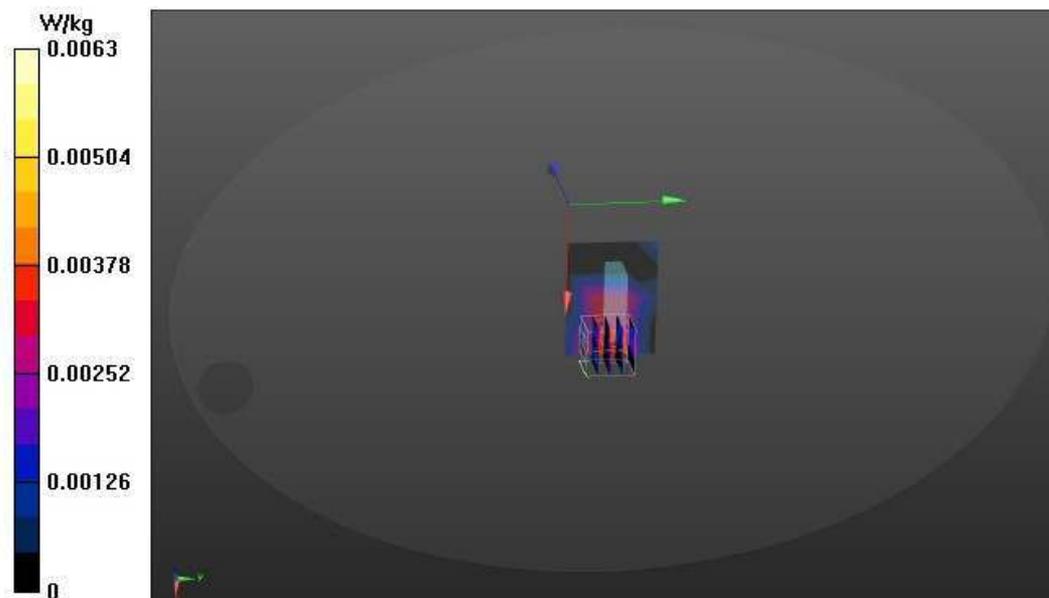
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.00369 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 2.463 V/m; Power Drift = 0.66 dB  
Peak SAR (extrapolated) = 0.00912 W/kg  
**SAR(1 g) = 0.00429 W/kg; SAR(10 g) = 0.00126 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 69.5%  
Maximum value of SAR (measured) = 0.00630 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P74 8DPSK CH78 2480MHz Down

DUT: 100097489

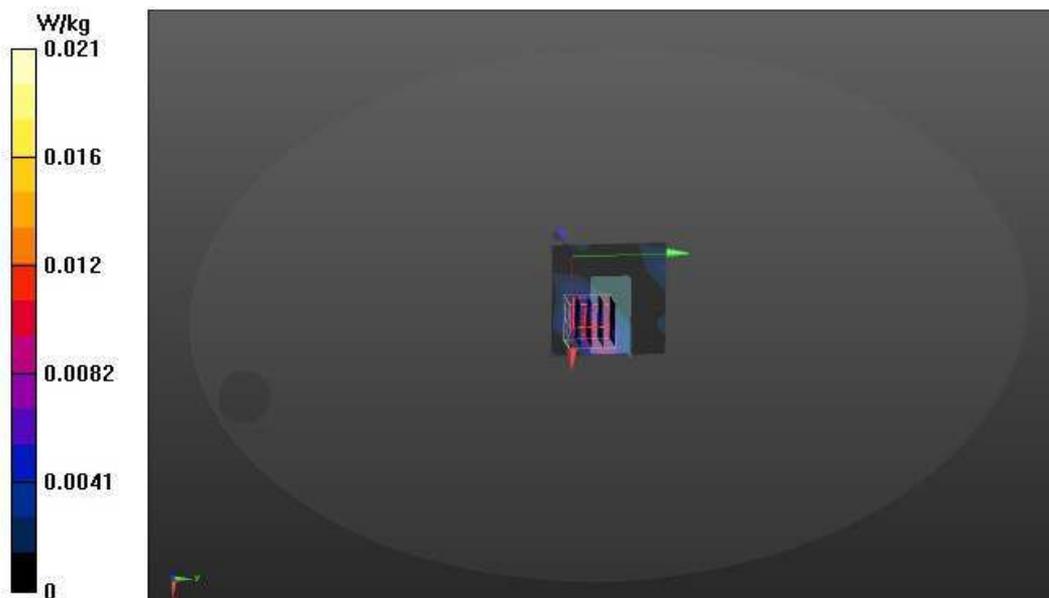
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.0108 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 2.172 V/m; Power Drift = -0.01 dB  
Peak SAR (extrapolated) = 0.0300 W/kg  
**SAR(1 g) = 0.012 W/kg; SAR(10 g) = 0.00412 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 46.2%  
Maximum value of SAR (measured) = 0.0205 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P72 8DPSK CH78 2480MHz Front

DUT: 100097489

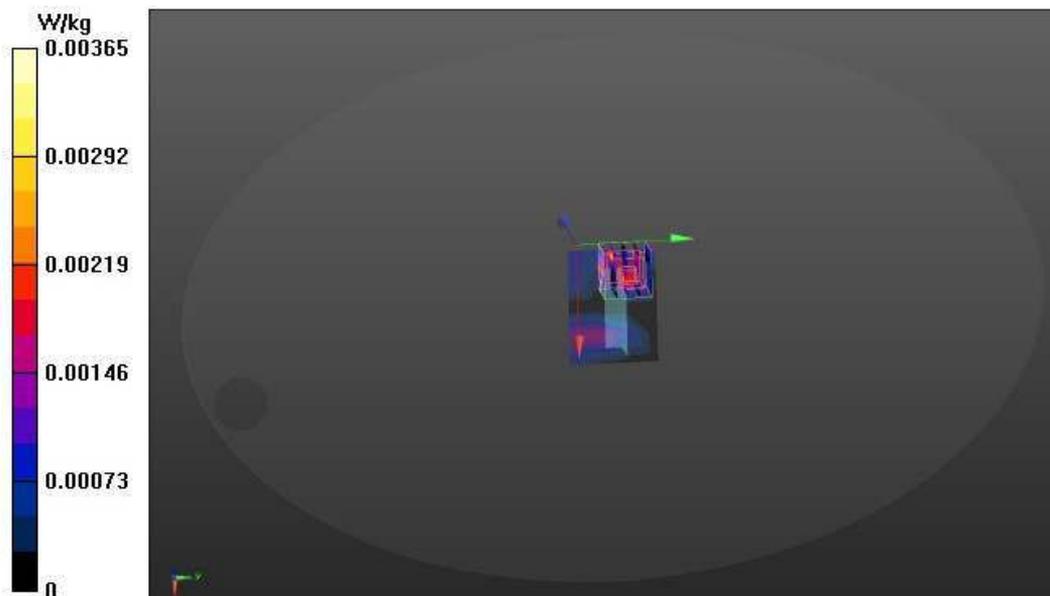
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.00225 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 1.211 V/m; Power Drift = 1.03 dB  
Peak SAR (extrapolated) = 0.00813 W/kg  
**SAR(1 g) = 0.0025 W/kg; SAR(10 g) = 0.000624 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 51.1%  
Maximum value of SAR (measured) = 0.00365 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P71 BLE CH39 2480MHz Up

DUT: 100097489

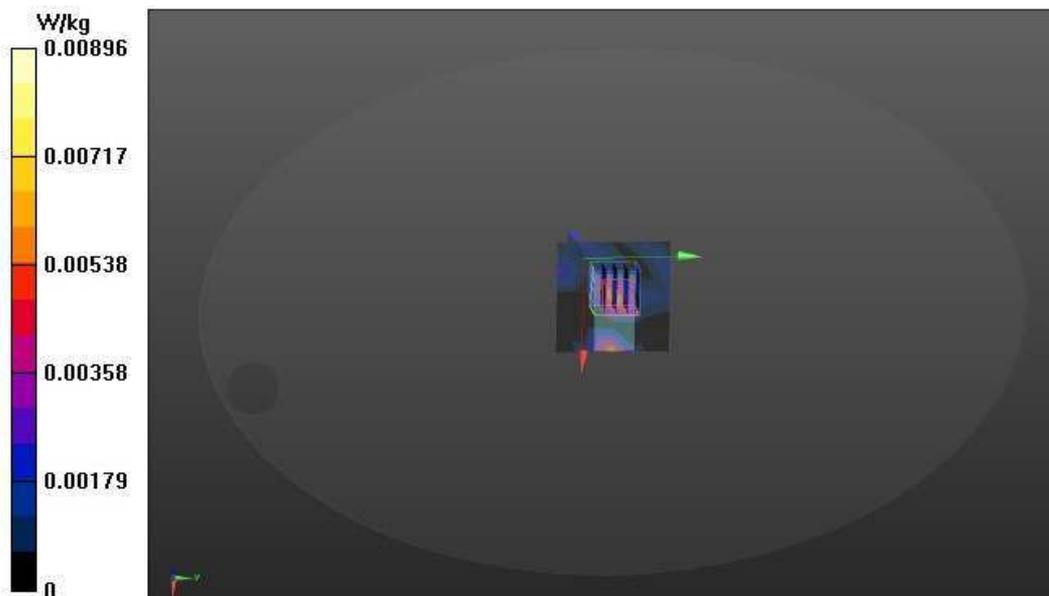
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.56  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.00692 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 2.087 V/m; Power Drift = 1.29 dB  
Peak SAR (extrapolated) = 0.0140 W/kg  
**SAR(1 g) = 0.00532 W/kg; SAR(10 g) = 0.00175 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 40.1%  
Maximum value of SAR (measured) = 0.00896 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

**P77 BLE CH39 2480MHz Back****DUT: 100097489**

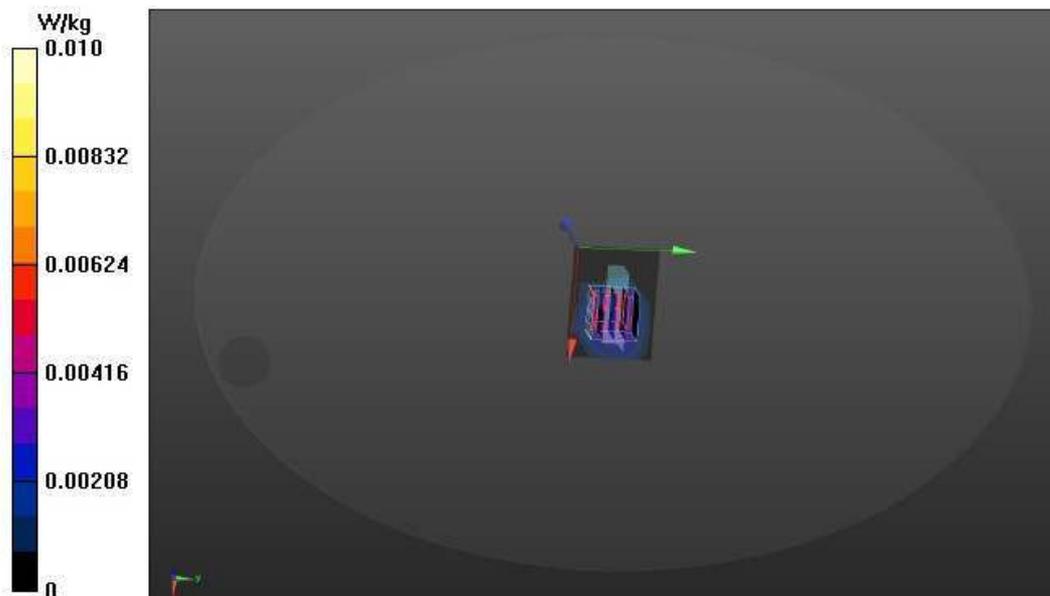
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.56  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.00385 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 2.036 V/m; Power Drift = -0.04 dB  
Peak SAR (extrapolated) = 0.0340 W/kg  
**SAR(1 g) = 0.00674 W/kg; SAR(10 g) = 0.00208 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 44.9%  
Maximum value of SAR (measured) = 0.0104 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P75 BLE CH39 2480MHz Down

DUT: 100097489

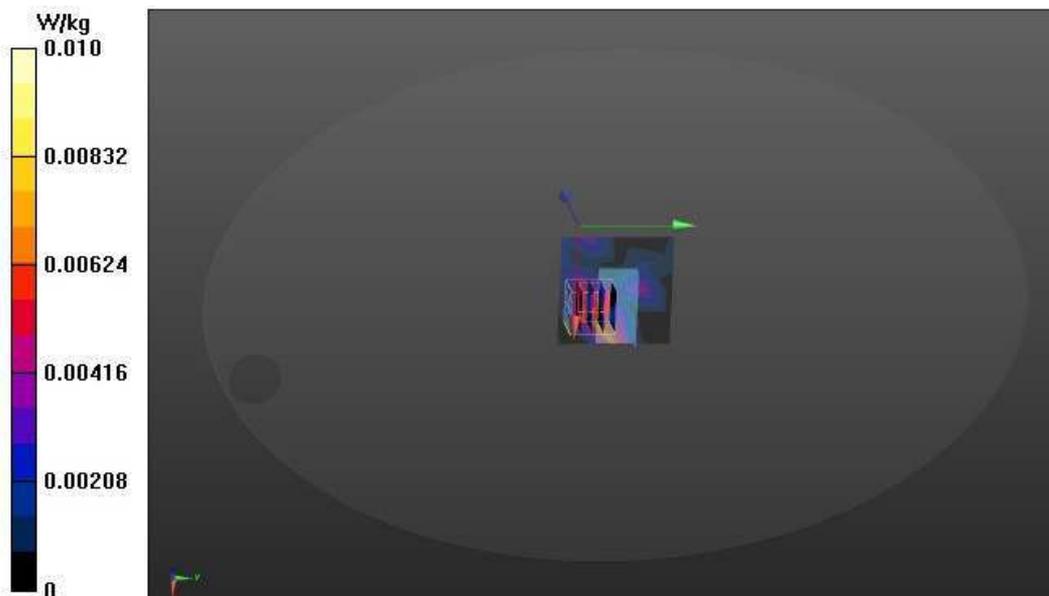
Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.56  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = -29.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (5x5x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.00663 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 1.518 V/m; Power Drift = 1.33 dB  
Peak SAR (extrapolated) = 0.0190 W/kg  
**SAR(1 g) = 0.00657 W/kg; SAR(10 g) = 0.00177 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 45.3%  
Maximum value of SAR (measured) = 0.0104 W/kg



Date: 10/21/2020

Test Laboratory: Audix\_SAR Lab

### P73 BLE CH39 2480MHz Front

DUT: 100097489

Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.56  
Medium parameters used:  $f = 2480$  MHz,  $\sigma = 1.89$  S/m;  $\epsilon_r = 38.477$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.69, 7.69, 7.69) @ 2480 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (6x4x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm  
Maximum value of SAR (measured) = 0.00384 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm  
Reference Value = 0.7640 V/m; Power Drift = 1.56 dB  
Peak SAR (extrapolated) = 0.00891 W/kg  
**SAR(1 g) = 0.00291 W/kg; SAR(10 g) = 0.00121 W/kg**  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid  
Ratio of SAR at M2 to SAR at M1 = 43.7%  
Maximum value of SAR (measured) = 0.00611 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

### P1 802.11a CH64 5320MHz antA Up

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5320$  MHz,  $\sigma = 4.69$  S/m;  $\epsilon_r = 36.555$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5320 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.385 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 5.417 V/m; Power Drift = 0.73 dB

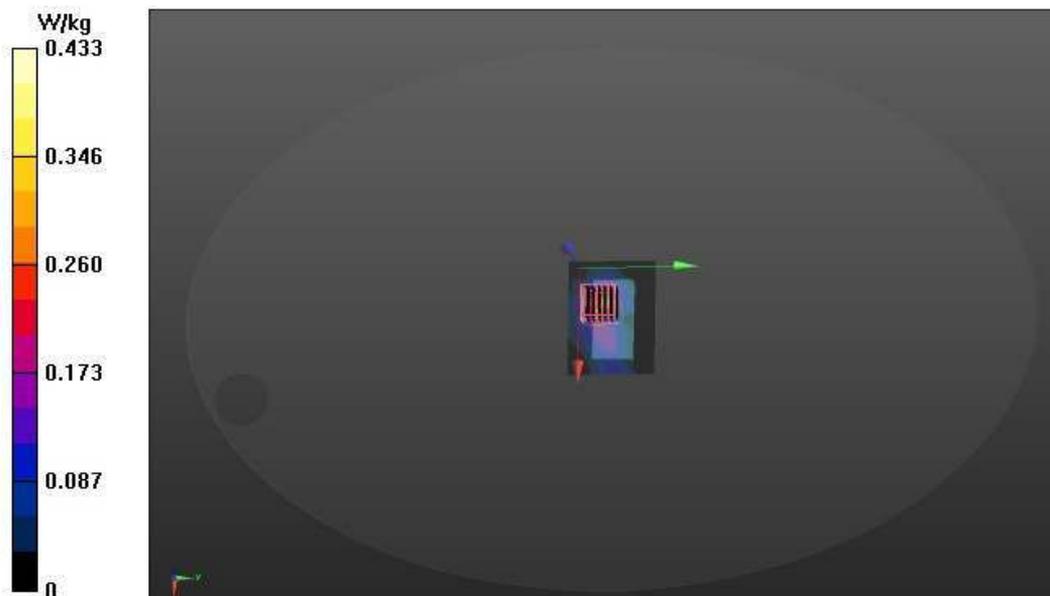
Peak SAR (extrapolated) = 0.905 W/kg

**SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.070 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 43.4%

Maximum value of SAR (measured) = 0.433 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

### P44 802.11a CH64 5320MHz antA Back

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5320$  MHz,  $\sigma = 4.69$  S/m;  $\epsilon_r = 36.555$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5320 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0620 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.570 V/m; Power Drift = 0.42 dB

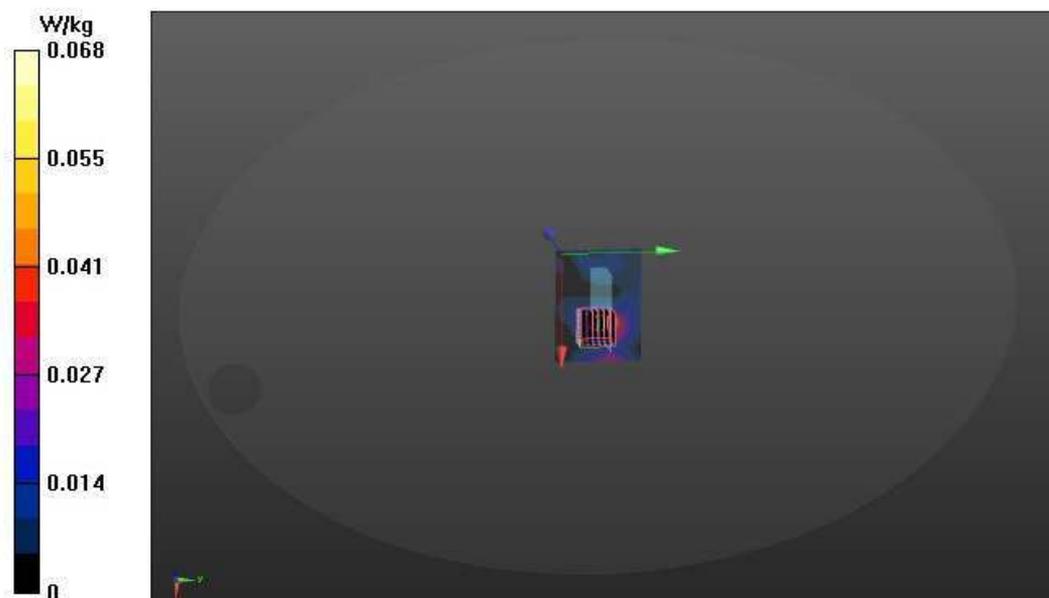
Peak SAR (extrapolated) = 0.137 W/kg

**SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.00907 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 32%

Maximum value of SAR (measured) = 0.0682 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P35 802.11a CH64 5320MHz antA Down**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5320$  MHz,  $\sigma = 4.69$  S/m;  $\epsilon_r = 36.555$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5320 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.329 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 2.042 V/m; Power Drift = 1.92 dB

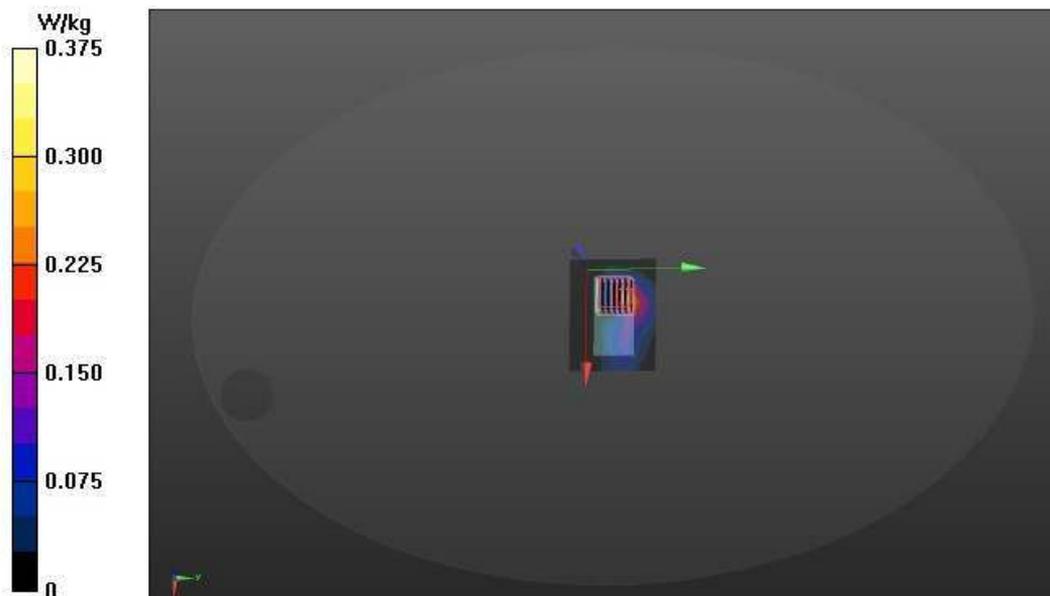
Peak SAR (extrapolated) = 0.798 W/kg

**SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.048 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 40.9%

Maximum value of SAR (measured) = 0.375 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P26 802.11a CH64 5320MHz antA Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5320$  MHz,  $\sigma = 4.69$  S/m;  $\epsilon_r = 36.555$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5320 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.367 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 7.888 V/m; Power Drift = 0.26 dB

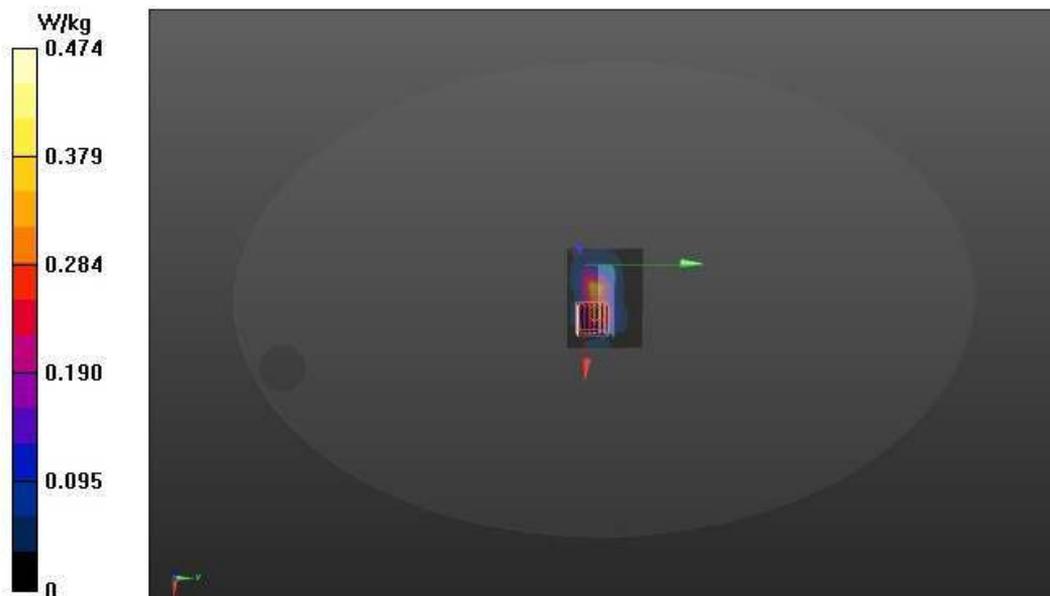
Peak SAR (extrapolated) = 1.06 W/kg

**SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.063 W/kg**

Smallest distance from peaks to all points 3 dB below = 8.4 mm

Ratio of SAR at M2 to SAR at M1 = 41.7%

Maximum value of SAR (measured) = 0.474 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

### P2 802.11a CH116 5580MHz antA Up

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5580 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5580$  MHz,  $\sigma = 5.007$  S/m,  $\epsilon_r = 36.121$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.83, 4.83, 4.83) @ 5580 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.455 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 6.342 V/m; Power Drift = -0.07 dB

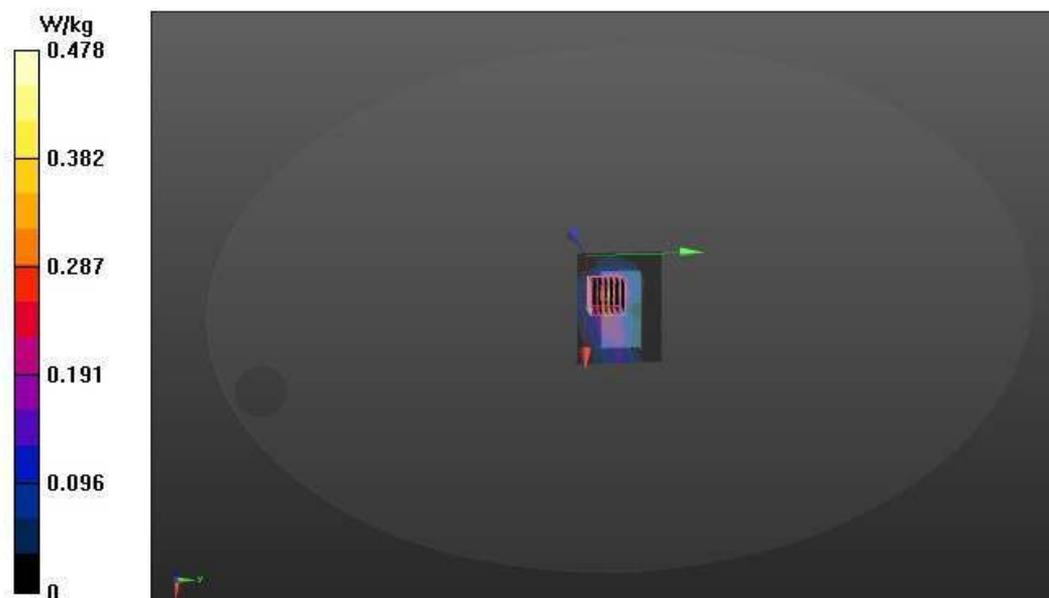
Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 0.236 W/kg; SAR(10 g) = 0.082 W/kg**

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 36.7%

Maximum value of SAR (measured) = 0.478 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P45 802.11a CH64 5580MHz antA Back**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5580 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5580$  MHz,  $\sigma = 5.007$  S/m,  $\epsilon_r = 36.121$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.83, 4.83, 4.83) @ 5580 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0556 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.236 V/m; Power Drift = 0.20 dB

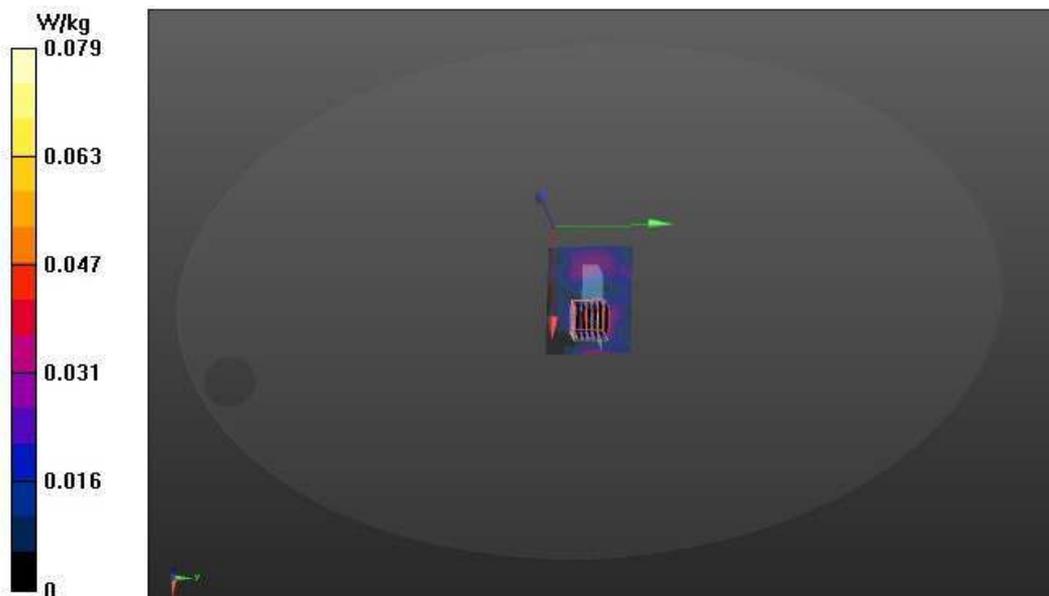
Peak SAR (extrapolated) = 0.160 W/kg

**SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.00903 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 38.7%

Maximum value of SAR (measured) = 0.0787 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

### P36 802.11a CH116 5580MHz antA Down

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5580 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5580$  MHz,  $\sigma = 5.007$  S/m,  $\epsilon_r = 36.121$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.83, 4.83, 4.83) @ 5580 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.415 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.811 V/m; Power Drift = 1.80 dB

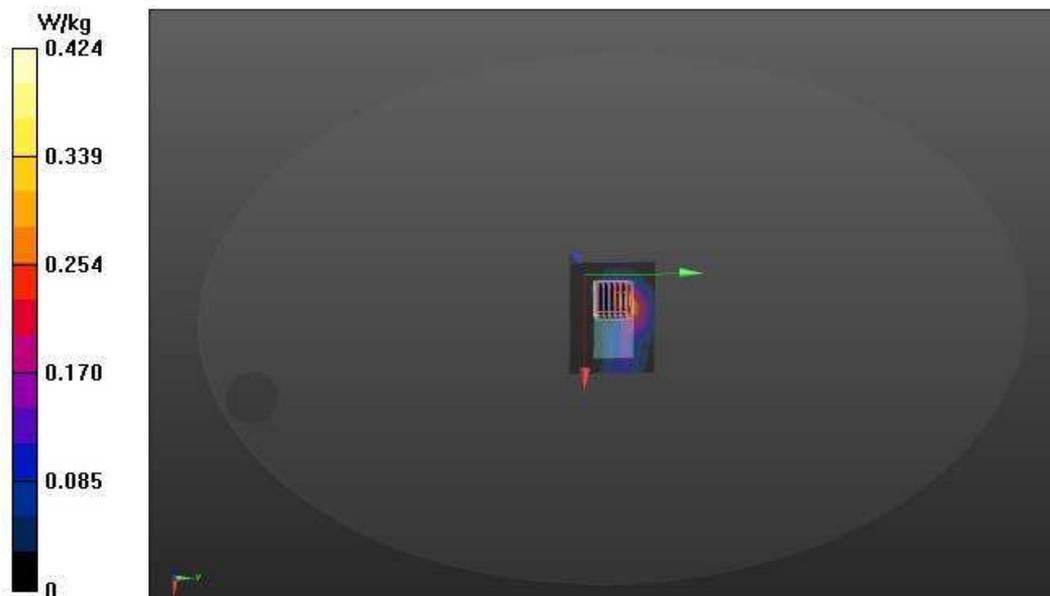
Peak SAR (extrapolated) = 0.821 W/kg

**SAR(1 g) = 0.196 W/kg; SAR(10 g) = 0.052 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 37.7%

Maximum value of SAR (measured) = 0.424 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P27 802.11a CH116 5580MHz antA Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5580 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5580$  MHz,  $\sigma = 5.007$  S/m,  $\epsilon_r = 36.121$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.83, 4.83, 4.83) @ 5580 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.600 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 10.54 V/m; Power Drift = -0.27 dB

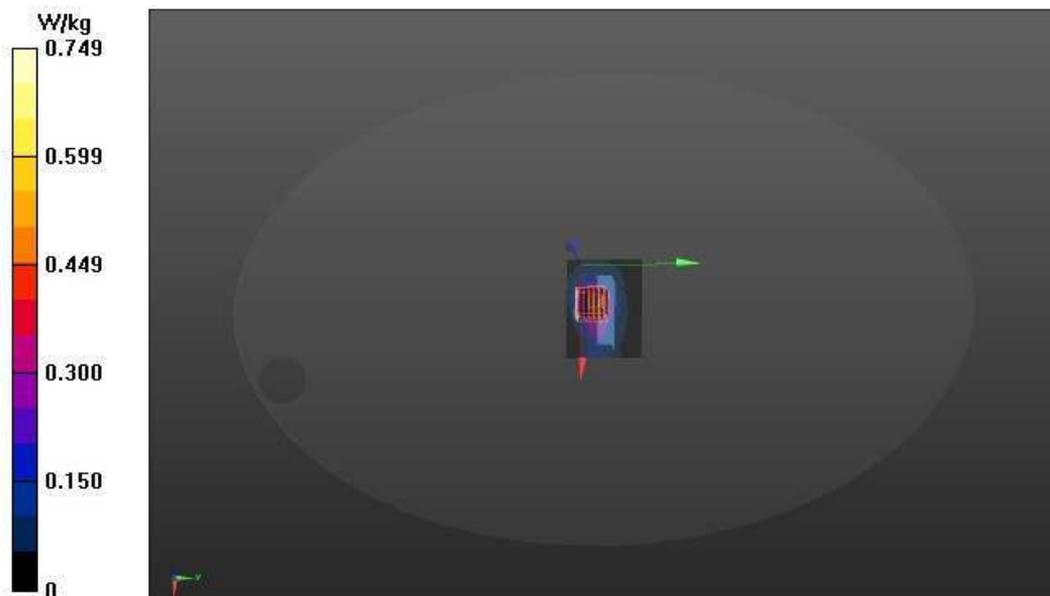
Peak SAR (extrapolated) = 1.76 W/kg

**SAR(1 g) = 0.372 W/kg; SAR(10 g) = 0.118 W/kg**

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 39.3%

Maximum value of SAR (measured) = 0.749 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

### P3 802.11a CH165 5825MHz antA Up

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5825$  MHz,  $\sigma = 5.336$  S/m,  $\epsilon_r = 35.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5825 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.296 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 6.823 V/m; Power Drift = -1.35 dB

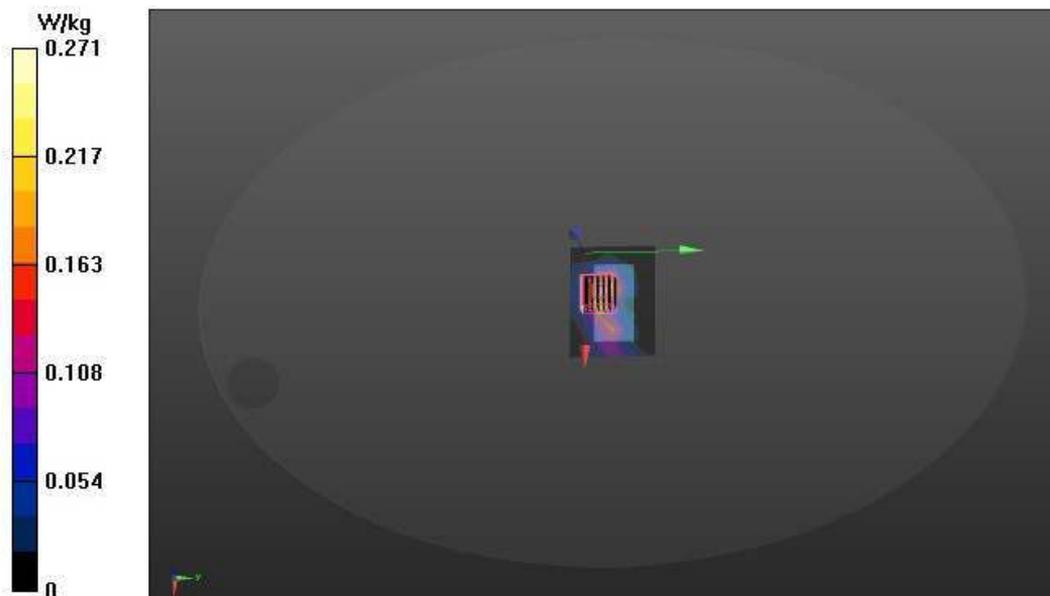
Peak SAR (extrapolated) = 0.631 W/kg

**SAR(1 g) = 0.126 W/kg; SAR(10 g) = 0.041 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 39.8%

Maximum value of SAR (measured) = 0.271 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

**P46 802.11a CH165 5825MHz antA Back**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5825$  MHz,  $\sigma = 5.336$  S/m,  $\epsilon_r = 35.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5825 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0349 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 0.3260 V/m; Power Drift = 0.22 dB

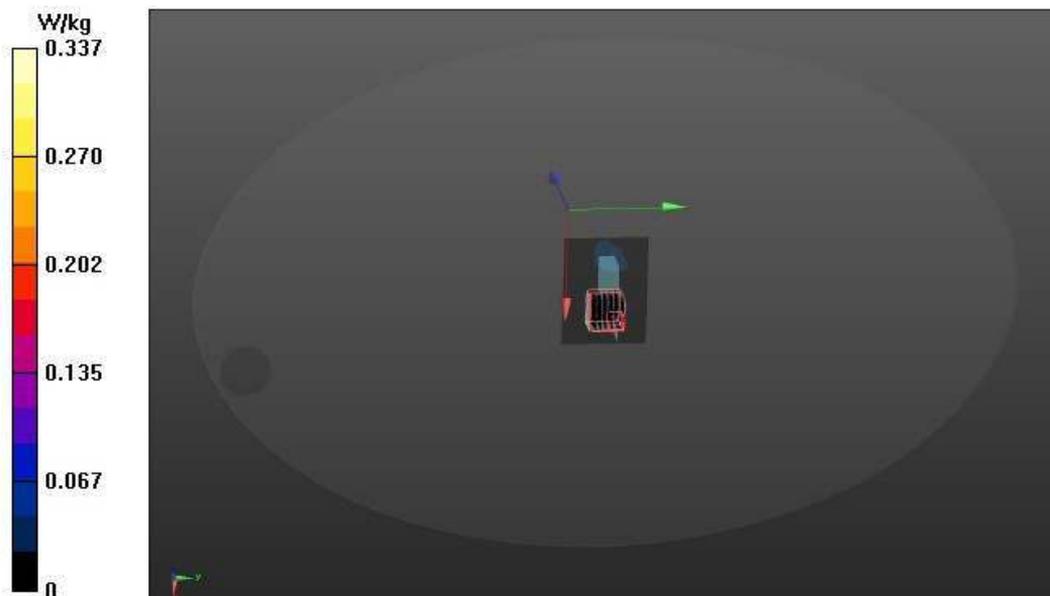
Peak SAR (extrapolated) = 0.337 W/kg

**SAR(1 g) = 0.0022 W/kg; SAR(10 g) = 0.000221 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 35.7%

Maximum value of SAR (measured) = 0.337 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

**P37 802.11a CH165 5825MHz antA Down**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5825$  MHz,  $\sigma = 5.336$  S/m,  $\epsilon_r = 35.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5825 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.353 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.663 V/m; Power Drift = 1.80 dB

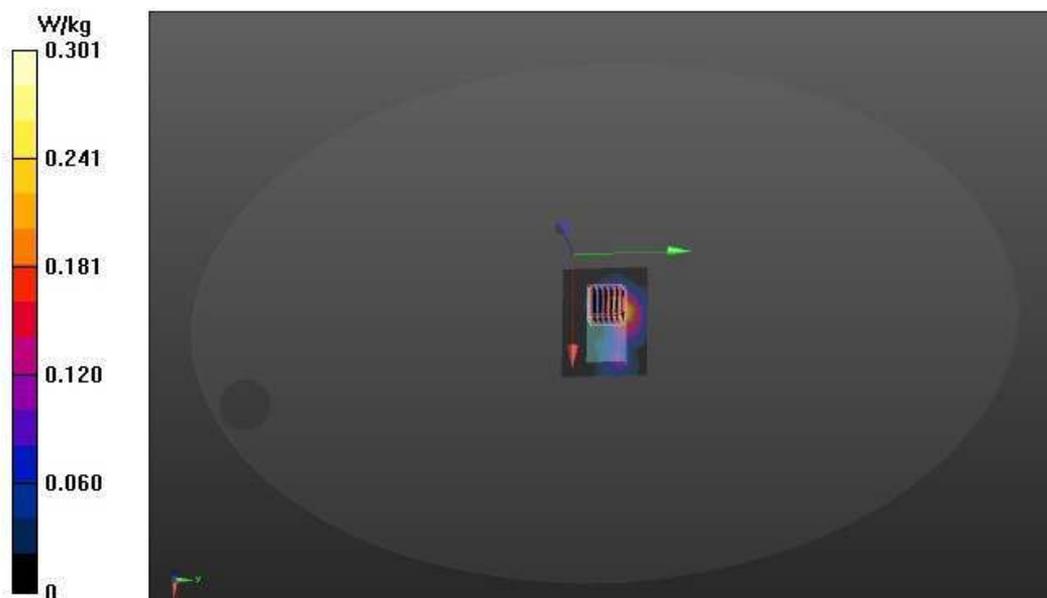
Peak SAR (extrapolated) = 0.625 W/kg

**SAR(1 g) = 0.140 W/kg; SAR(10 g) = 0.039 W/kg**

Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 34.3%

Maximum value of SAR (measured) = 0.301 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

**P28 802.11a CH165 5825MHz antA Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5825$  MHz,  $\sigma = 5.336$  S/m,  $\epsilon_r = 35.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5825 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.547 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 10.08 V/m; Power Drift = -0.22 dB

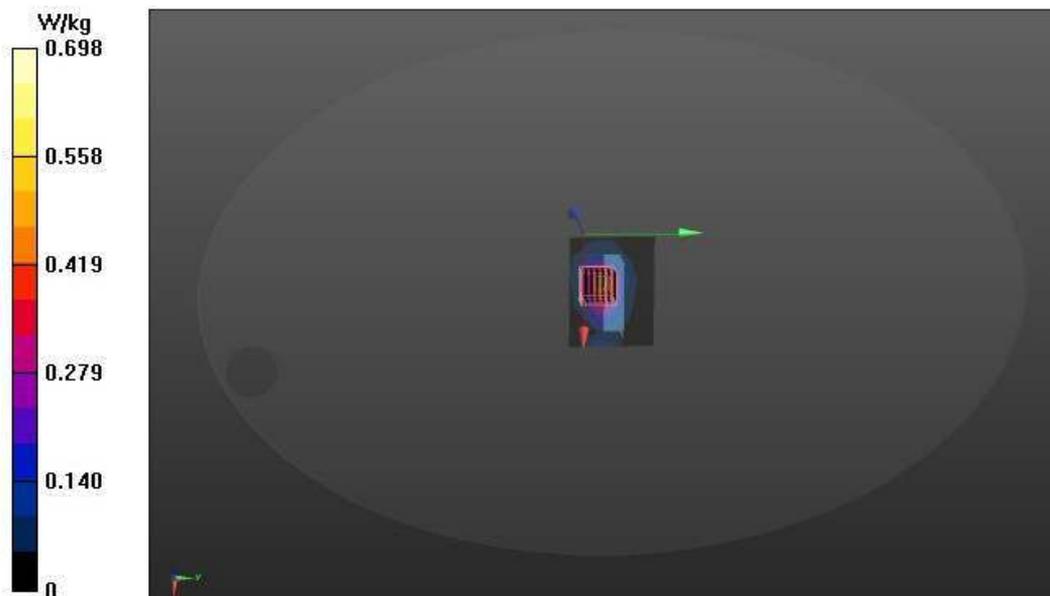
Peak SAR (extrapolated) = 1.60 W/kg

**SAR(1 g) = 0.337 W/kg; SAR(10 g) = 0.107 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 39.4%

Maximum value of SAR (measured) = 0.698 W/kg



X

Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P20 802.11n-HT20 CH60 5300MHz antA Up****DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.345 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 5.865 V/m; Power Drift = -0.04 dB

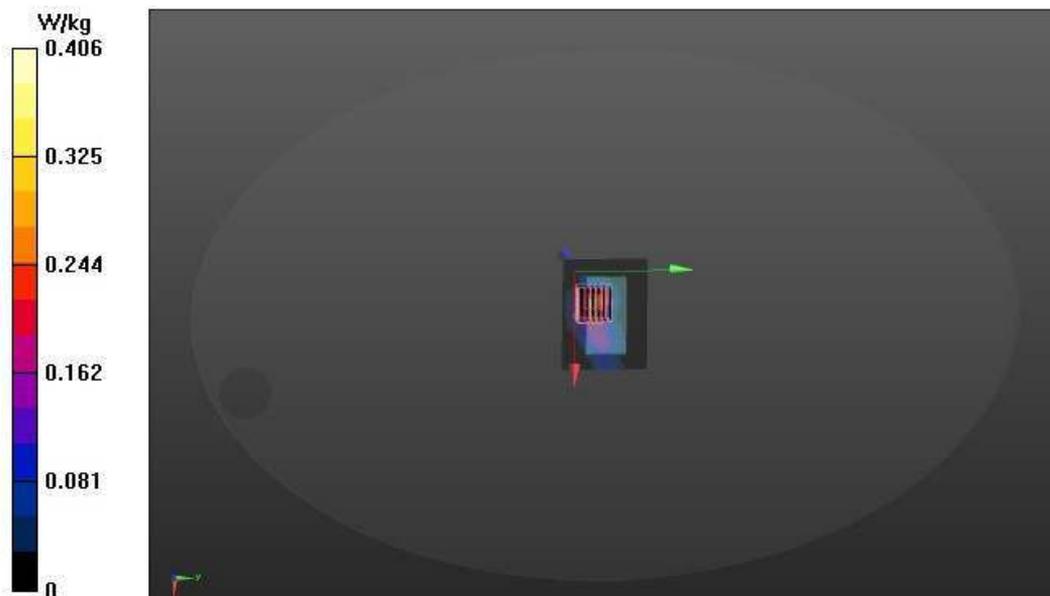
Peak SAR (extrapolated) = 1.70 W/kg

**SAR(1 g) = 0.185 W/kg; SAR(10 g) = 0.057 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.2 mm

Ratio of SAR at M2 to SAR at M1 = 35.1%

Maximum value of SAR (measured) = 0.406 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P47 802.11n-HT20 CH60 5300MHz antA Back**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0534 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.708 V/m; Power Drift = 0.60 dB

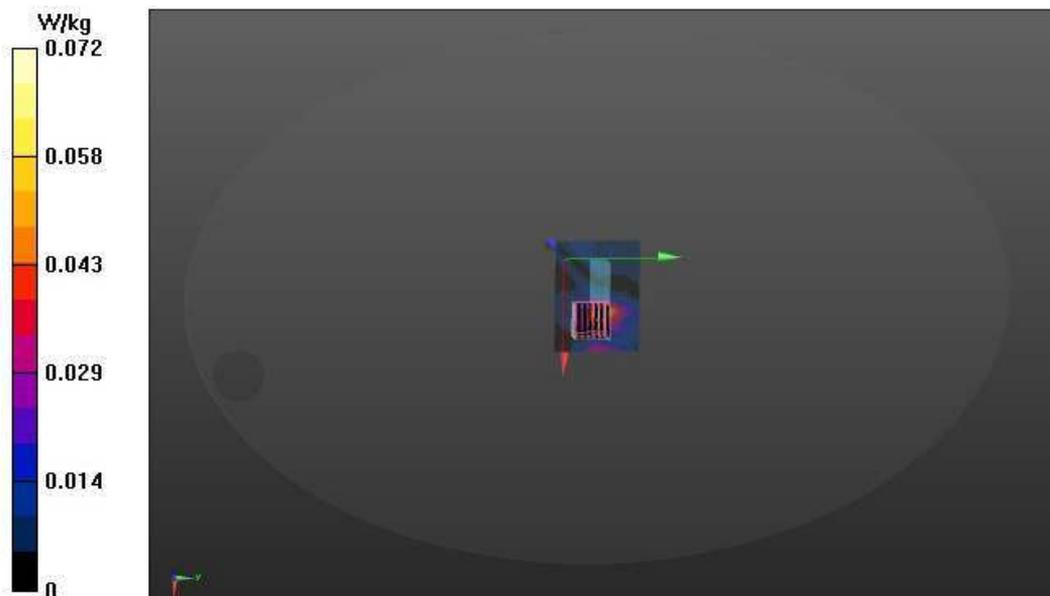
Peak SAR (extrapolated) = 0.140 W/kg

**SAR(1 g) = 0.033 W/kg; SAR(10 g) = 0.00896 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 48.6%

Maximum value of SAR (measured) = 0.0721 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

### P38 802.11n-HT20 CH60 5300MHz antA Down

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.214 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.216 V/m; Power Drift = 1.04 dB

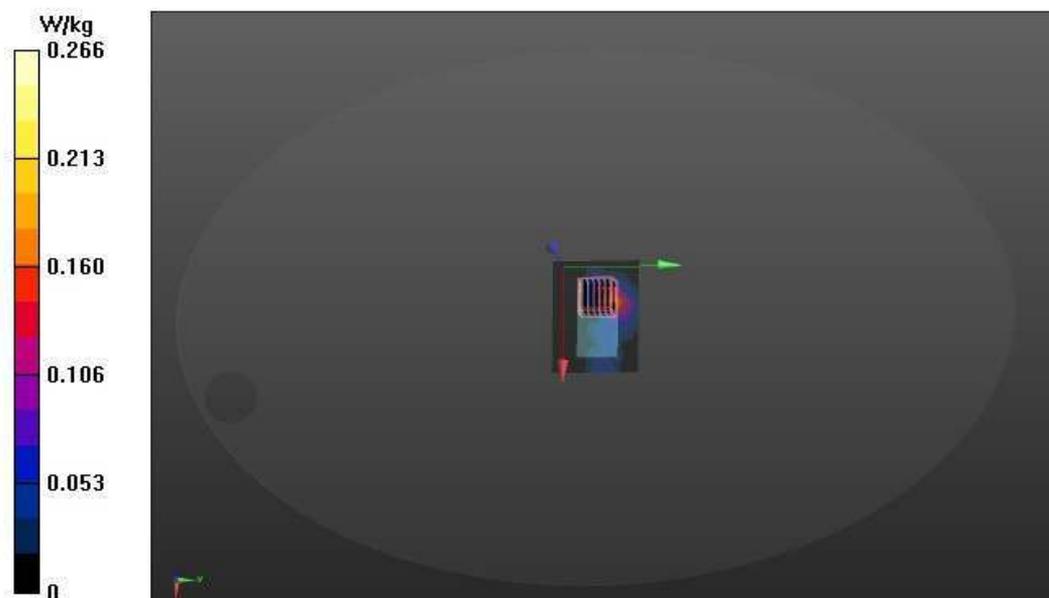
Peak SAR (extrapolated) = 0.517 W/kg

**SAR(1 g) = 0.117 W/kg; SAR(10 g) = 0.029 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 34.5%

Maximum value of SAR (measured) = 0.266 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P29 802.11n-HT20 CH60 5300MHz antA Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.441 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 10.40 V/m; Power Drift = -0.33 dB

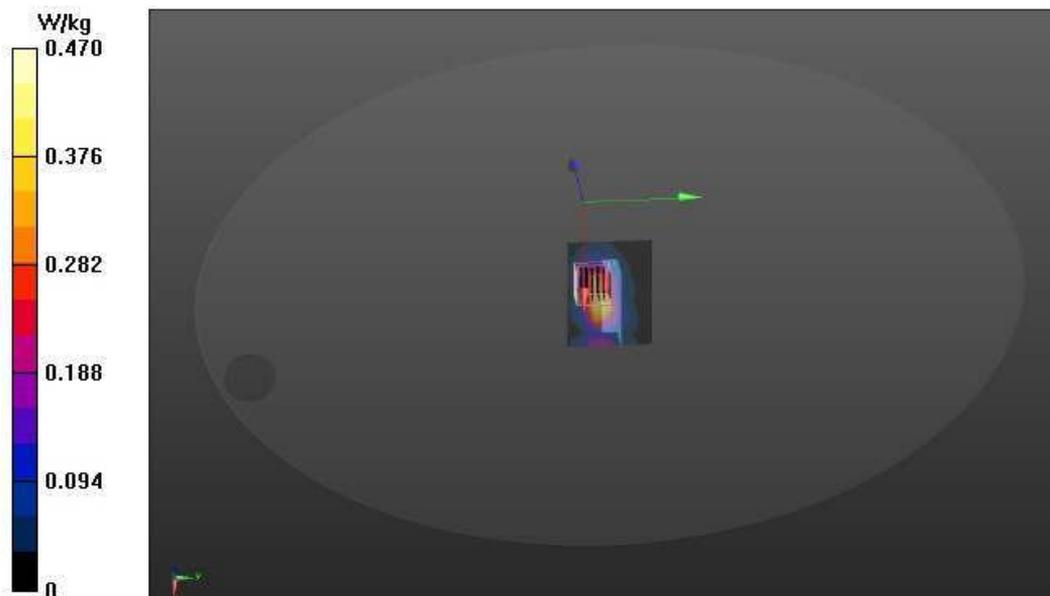
Peak SAR (extrapolated) = 1.02 W/kg

**SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.069 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 41.1%

Maximum value of SAR (measured) = 0.470 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P22 802.11n-HT20 CH60 5500MHz antA Up**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz,  $\sigma = 4.954$  S/m,  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.426 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 6.860 V/m; Power Drift = -0.28 dB

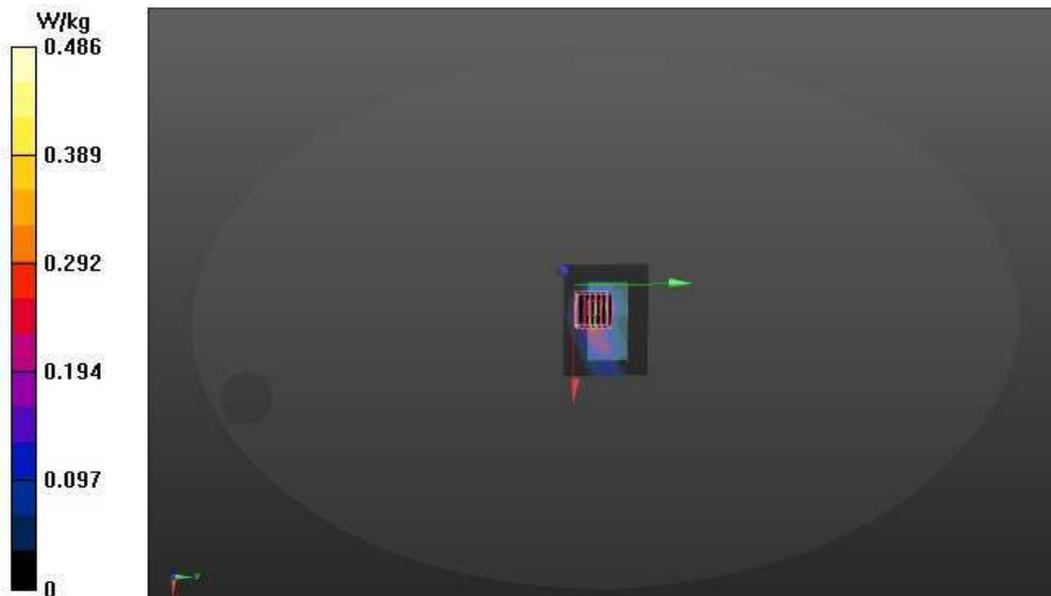
Peak SAR (extrapolated) = 1.03 W/kg

**SAR(1 g) = 0.218 W/kg; SAR(10 g) = 0.072 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 32.1%

Maximum value of SAR (measured) = 0.486 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P49 802.11n-HT20 CH100 5500MHz antA Back**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz,  $\sigma = 4.954$  S/m,  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0575 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.821 V/m; Power Drift = 0.23 dB

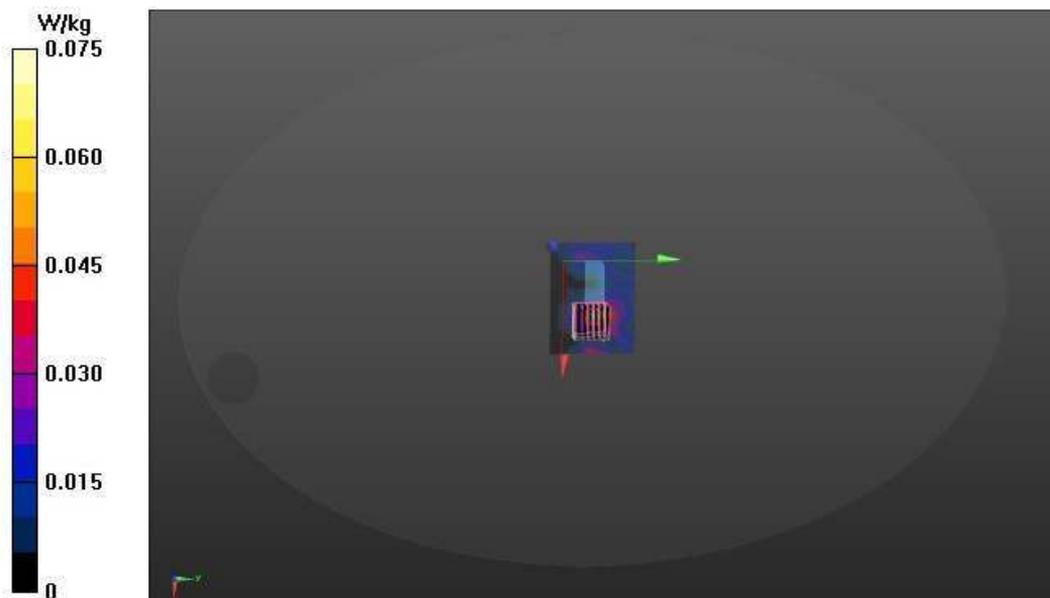
Peak SAR (extrapolated) = 0.160 W/kg

**SAR(1 g) = 0.031 W/kg; SAR(10 g) = 0.00853 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 40.1%

Maximum value of SAR (measured) = 0.0753 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P40 802.11n-HT20 CH100 5500MHz antA Down**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz,  $\sigma = 4.954$  S/m,  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.261 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 1.452 V/m; Power Drift = 1.04 dB

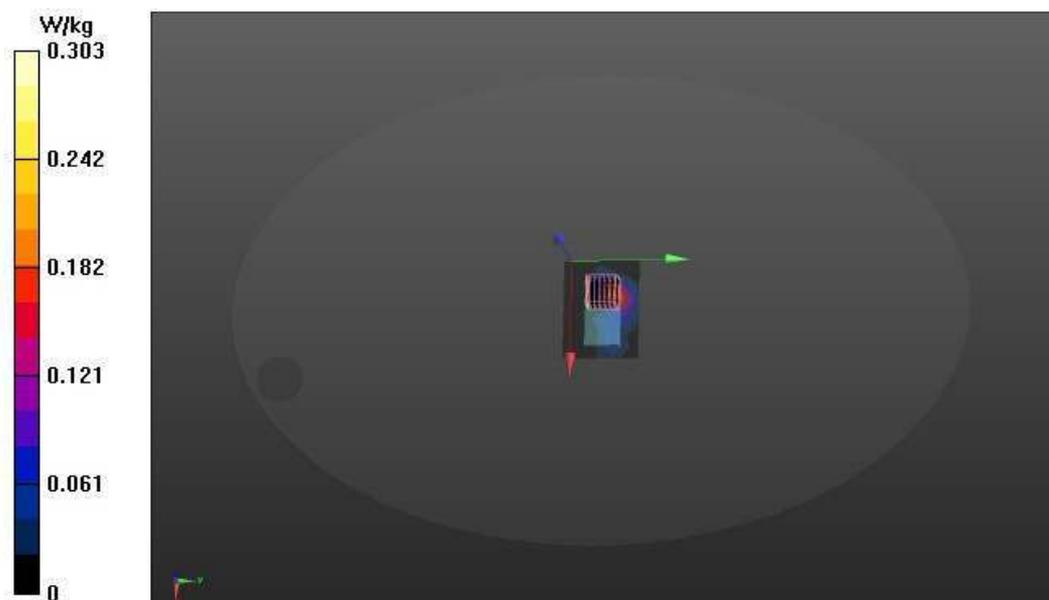
Peak SAR (extrapolated) = 0.898 W/kg

**SAR(1 g) = 0.128 W/kg; SAR(10 g) = 0.037 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 36.7%

Maximum value of SAR (measured) = 0.303 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P31 802.11n-HT20 CH100 5500MHz antA Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz,  $\sigma = 4.954$  S/m,  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.500 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 8.328 V/m; Power Drift = -0.14 dB

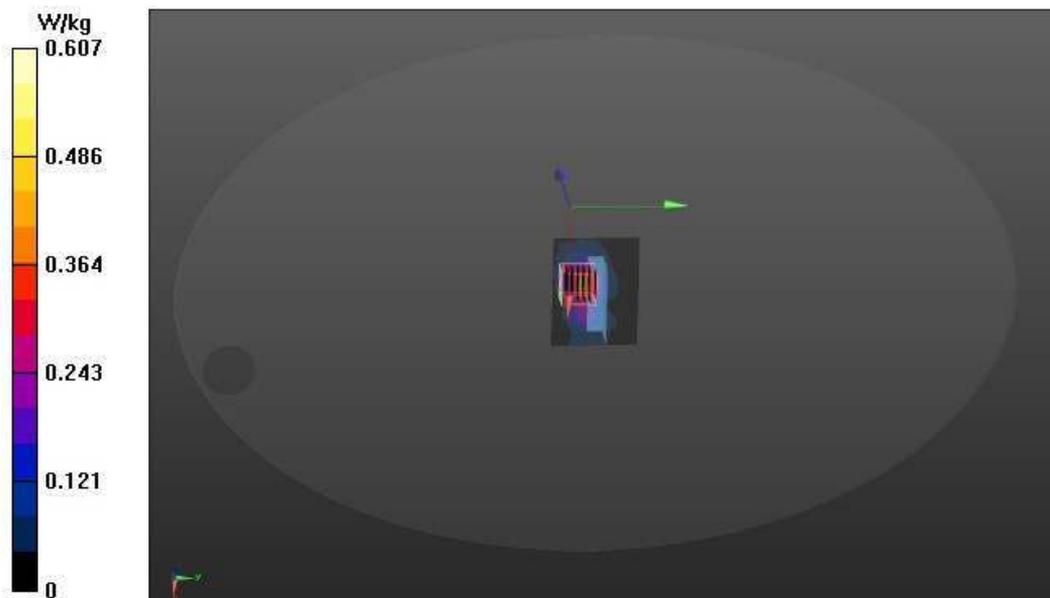
Peak SAR (extrapolated) = 1.38 W/kg

**SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.085 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 40.3%

Maximum value of SAR (measured) = 0.607 W/kg



0.0

Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

### P24 802.11n-HT20 CH157 5785MHz antA Up

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5785$  MHz,  $\sigma = 5.122$  S/m,  $\epsilon_r = 36.008$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5785 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.462 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 7.192 V/m; Power Drift = 0.26 dB

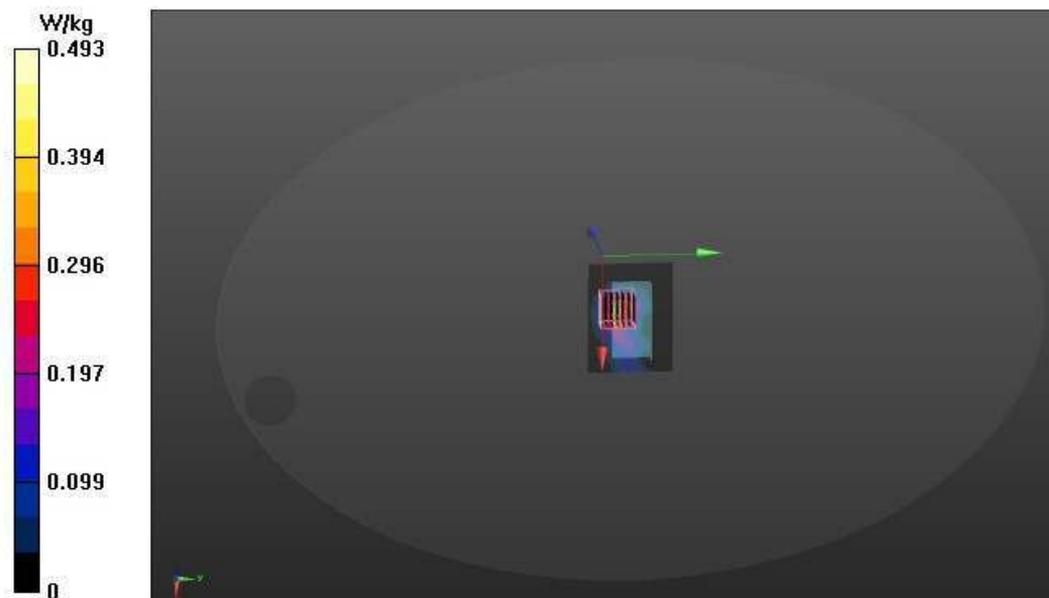
Peak SAR (extrapolated) = 1.10 W/kg

**SAR(1 g) = 0.228 W/kg; SAR(10 g) = 0.074 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 32.7%

Maximum value of SAR (measured) = 0.493 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

### P51 802.11n-HT20 CH157 5785MHz antA Back

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5785$  MHz,  $\sigma = 5.122$  S/m,  $\epsilon_r = 36.008$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5785 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.0398 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 0.4570 V/m; Power Drift = 0.47 dB

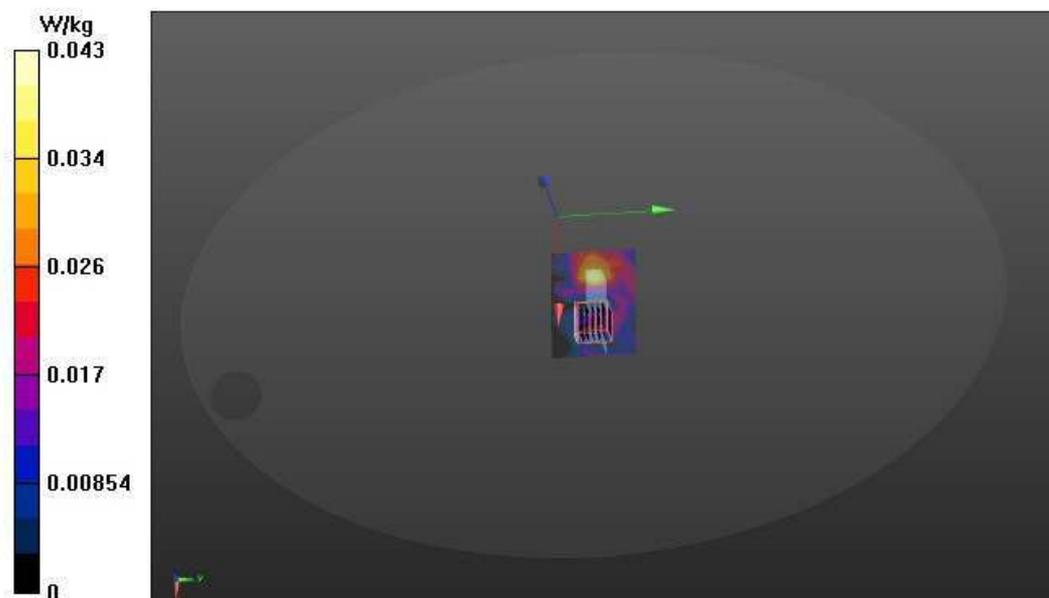
Peak SAR (extrapolated) = 0.217 W/kg

**SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.0053 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 52%

Maximum value of SAR (measured) = 0.0427 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

**P42 802.11n-HT20 CH157 5785MHz antA Down**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5785$  MHz,  $\sigma = 5.122$  S/m,  $\epsilon_r = 36.008$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5785 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.216 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 0.8270 V/m; Power Drift = 0.51 dB

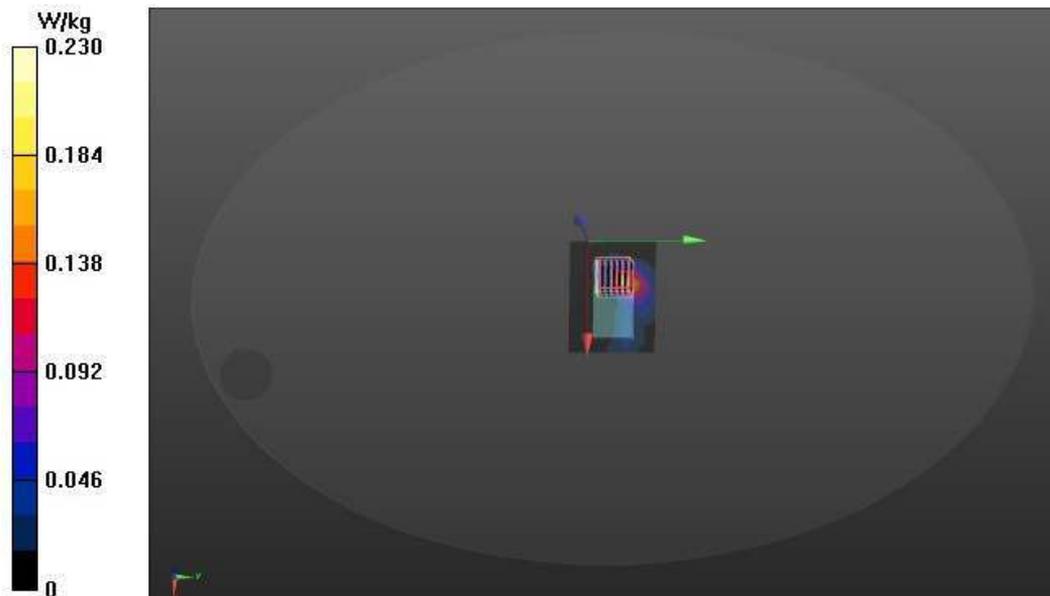
Peak SAR (extrapolated) = 0.601 W/kg

**SAR(1 g) = 0.091 W/kg; SAR(10 g) = 0.025 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.9 mm

Ratio of SAR at M2 to SAR at M1 = 43.6%

Maximum value of SAR (measured) = 0.230 W/kg



Date: 10/15/2020

Test Laboratory: Audix\_SAR Lab

**P33 802.11n-HT20 CH157 5785MHz antA Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5785 \text{ MHz}$ ,  $\sigma = 5.122 \text{ S/m}$ ,  $\epsilon_r = 36.008$ ,  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.8, 4.8, 4.8) @ 5785 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.649 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=2.5\text{mm}$

Reference Value = 9.599 V/m; Power Drift = -0.36 dB

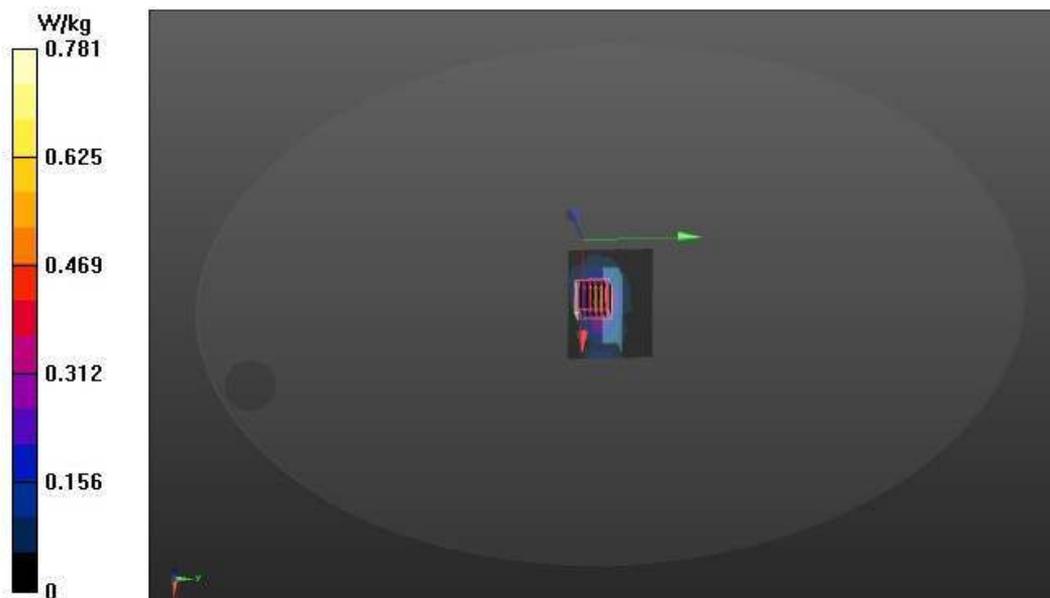
Peak SAR (extrapolated) = 1.75 W/kg

**SAR(1 g) = 0.363 W/kg; SAR(10 g) = 0.108 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 37.6%

Maximum value of SAR (measured) = 0.781 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

### P21 802.11n-HT20 CH60 5300MHz antB Up

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.372 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 4.332 V/m; Power Drift = 1.80 dB

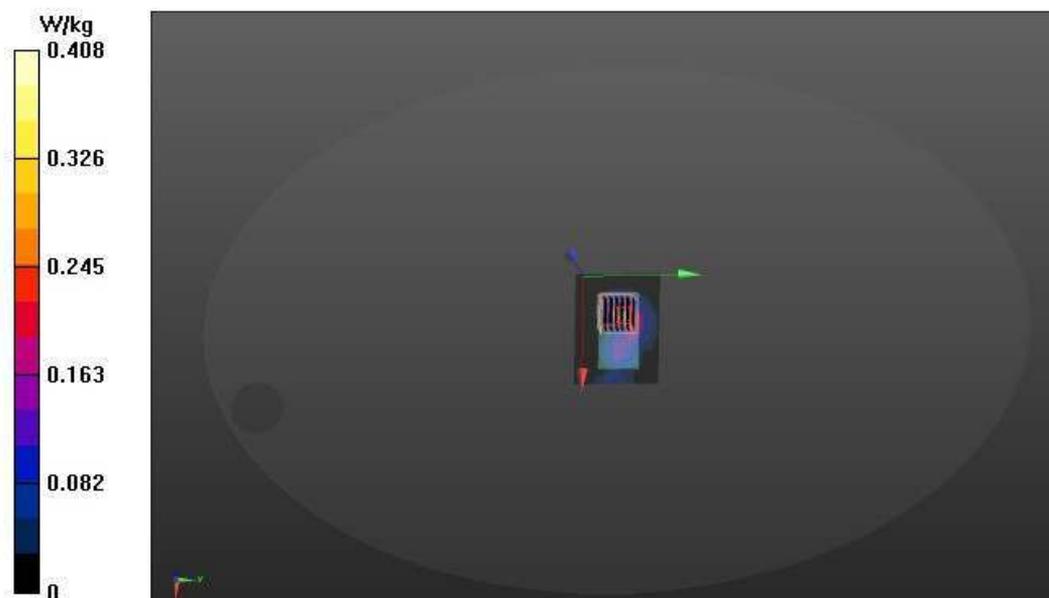
Peak SAR (extrapolated) = 0.783 W/kg

**SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.053 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 35.6%

Maximum value of SAR (measured) = 0.408 W/kg



Date: 10/16/2020

Test Laboratory: Audix\_SAR Lab

### P48 802.11n-HT20 CH60 5300MHz antB Back

DUT: 100097489

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.207 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 9.658 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 1.04 W/kg

**SAR(1 g) = 0.194 W/kg; SAR(10 g) = 0.063 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 38.2%

Maximum value of SAR (measured) = 0.389 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P39 802.11n-HT20 CH60 5300MHz antB Down**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.191 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 3.492 V/m; Power Drift = 1.35 dB

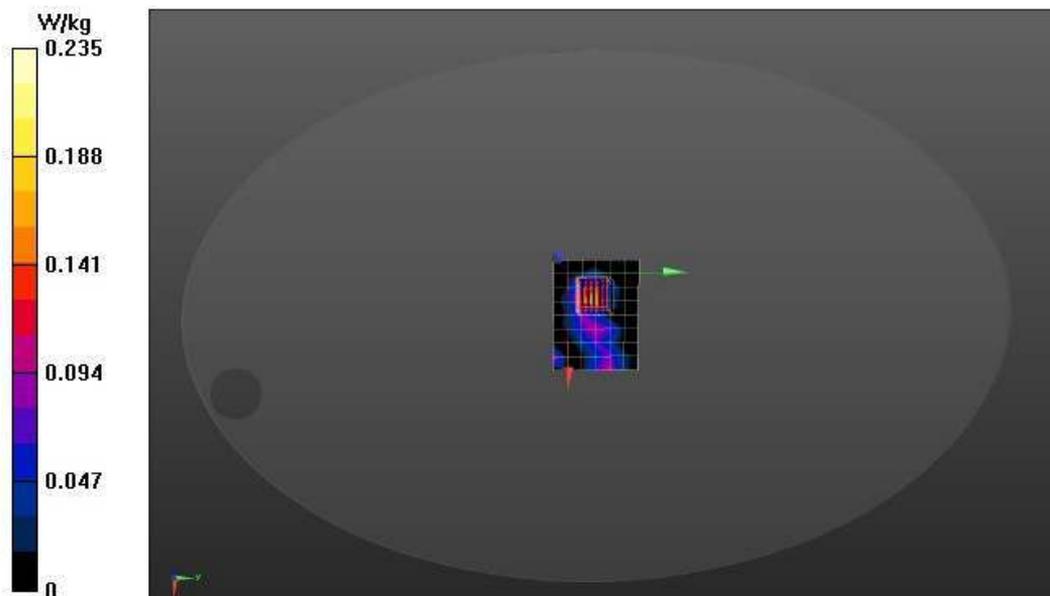
Peak SAR (extrapolated) = 0.474 W/kg

**SAR(1 g) = 0.098 W/kg; SAR(10 g) = 0.028 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.8 mm

Ratio of SAR at M2 to SAR at M1 = 39.4%

Maximum value of SAR (measured) = 0.235 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P30 802.11n-HT20 CH60 5300MHz antB Front**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5300$  MHz,  $\sigma = 4.687$  S/m,  $\epsilon_r = 36.753$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.15, 5.15, 5.15) @ 5300 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.120 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 2.232 V/m; Power Drift = 0.01 dB

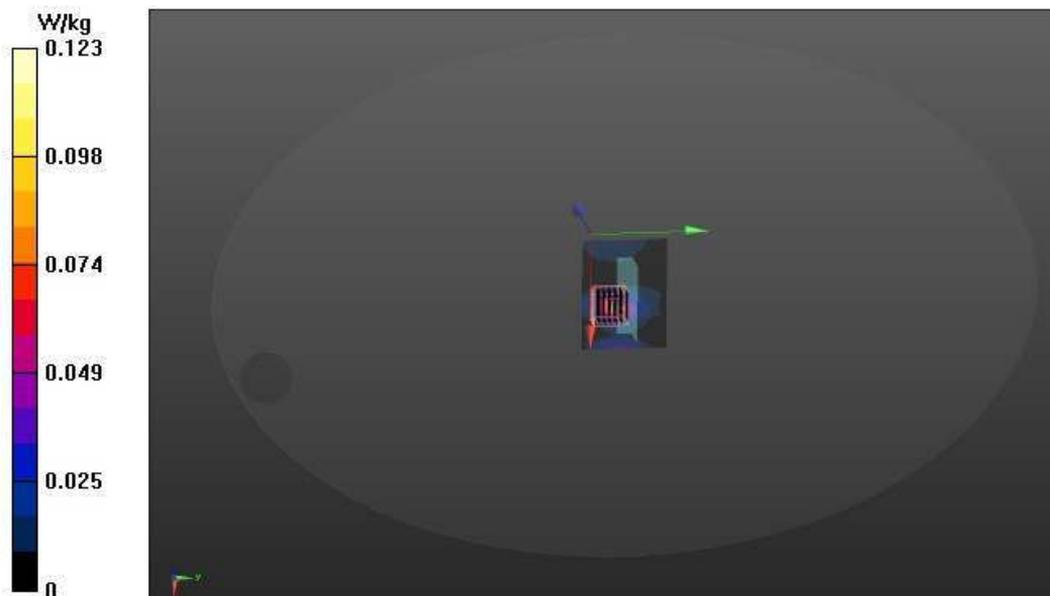
Peak SAR (extrapolated) = 0.231 W/kg

**SAR(1 g) = 0.053 W/kg; SAR(10 g) = 0.014 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.1 mm

Ratio of SAR at M2 to SAR at M1 = 35.4%

Maximum value of SAR (measured) = 0.123 W/kg



Date: 10/14/2020

Test Laboratory: Audix\_SAR Lab

**P23 802.11n-HT20 CH60 5500MHz antB Up**

**DUT: 100097489**

Communication System: UID 0, WIFI 5G 802.11HT\_20 (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5500$  MHz,  $\sigma = 4.954$  S/m,  $\epsilon_r = 36.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.9, 4.9, 4.9) @ 5500 MHz; Calibrated: 9/23/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection),  $z = 1.0, 31.0$
- Electronics: DAE4 Sn1337; Calibrated: 9/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1170
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (9x7x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 0.706 W/kg

**Zoom Scan (7x7x9)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 6.792 V/m; Power Drift = 1.10 dB

Peak SAR (extrapolated) = 1.43 W/kg

**SAR(1 g) = 0.346 W/kg; SAR(10 g) = 0.102 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.5 mm

Ratio of SAR at M2 to SAR at M1 = 39.2%

Maximum value of SAR (measured) = 0.743 W/kg

