Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

FCC 2.1093
(Permissive Change)
SAR Test Report

for

Realtek Semiconductor Corp.

No. 2 Innovation Road II, Hsinchu Science Park
Hsinchu 300, Taiwan

Product Name : 11ax RTL8852BE Combo module
Model Name : RTL8852BE
Brand : REALTEK
FCC ID : TX2-RTL8852BE

Testing Laboratory
1724

TESTING
NVLAP LAB CODE 200077-0

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

TABLE OF CONTENTS

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

TEST REPORT
(Permissive Change)

Applicant	:	Realtek Semiconductor Corp.
EUT Description		
(1) Product	:	11ax RTL8852BE Combo module
(2) Model	:	RTL8852BE
(3) Brand	:	REALTEK
(4) Power Supply	:	3.3Vdc from host equipment

Applicable Standards:

Title 47FCC CFR, Part 2 §2.1093

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: 2025. 04. 30

Reviewed by: Tina Huang (Tina Huang/Deputy Manager)

Approved by: Johnny Hsueh (Johnny Hsueh/Deputy Manager)

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

1. REVISION RECORD OF TEST REPORT

Edition No.	Issued Date	Revision Summary	Report Number
0	2025. 04. 30	Original Report	EM-SR250043

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

2. SUMMARY OF TEST RESULTS

Tablet Mode:

Highest Transmission SAR	Reported SAR_{1g} (W/kg)	Limit
WLAN 2.4G	0.354 W/kg	1.6 W/kg
BT	0.056 W/kg	1.6 W/kg
WLAN 5G	0.857 W/kg	1.6 W/kg

Laptop Mode:

Highest Transmission SAR	Reported SAR_{1g} (W/kg)	Limit
WLAN 2.4G	0.026 W/kg	1.6 W/kg
BT	0.0006 W/kg	1.6 W/kg
WLAN 5G	0.057 W/kg	1.6 W/kg

Highest Simultaneous Transmission SAR	Reported SAR	Reported Body SAR_{1g}
WLAN 5G (5745MHz) AUX-ANT + WLAN 5G (5745MHz) Main-ANT	0.781 0.849	1.630 W/kg

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3. GENERAL INFORMATION

3.1. Description of Application

Applicant	Realtek Semiconductor Corp. No. 2 Innovation Road II, Hsinchu Science Park Hsinchu 300, Taiwan
Product	11ax RTL8852BE Combo module
Model	RTL8852BE
Brand	REALTEK

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.2. Description of EUT

<table>
<tr><td>Test Model</td><td>RTL8852BE</td></tr>
<tr><td>Serial Number</td><td>N/A</td></tr>
<tr><td>Power Rating</td><td>3.3Vdc from host equipment</td></tr>
<tr><td>Software Version</td><td>N/A</td></tr>
<tr><td>RF Features</td><td>WLAN:802.11 a/b/g/n/ac/ax, Bluetooth: BT and BLE</td></tr>
<tr><td>Transmit Type</td><td>
<table>
<tr><th colspan="2">2.4 GHz Bands</th></tr>
<tr><td>802.11b</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>802.11g</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>802.11n-HT20/40</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>802.11ax-HE20/40</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>BT/BLE</td><td>1T1R</td></tr>
</table>
<table>
<tr><th colspan="2">U-NII 5GHz Bands</th></tr>
<tr><td>802.11a</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>802.11n-HT20/40</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>802.11ac-VHT20/40/80</td><td>2TX/1TX Diversity, 2RX</td></tr>
<tr><td>802.11ax-HE20/40/80</td><td>2TX/1TX Diversity, 2RX</td></tr>
</table>
All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
</td></tr>
<tr><td>Host</td><td>Host Name: Notebook PC, Host Brand: ECS
Host Model: EP20AN2
AC Adapter: LTEON, M/N:PA-1450-50,
DC Power Code: Undetachable, 1.5 m,
AC Power Cord: Ddetachable, 0.8 m</td></tr>
<tr><td>Sample Status</td><td>Trial sample</td></tr>
<tr><td>Test Sample</td><td>
<table>
<tr><th>Sample No.</th><th>Test Item</th><th>Firmware</th></tr>
<tr><td>01</td><td>SAR</td><td>N/A</td></tr>
</table>
</td></tr>
<tr><td>Date of Receipt</td><td>2025. 03. 17</td></tr>
<tr><td>Date of Test</td><td>2025. 03. 24 ~ 04.29</td></tr>
<tr><td>Interface Ports of EUT</td><td>None</td></tr>
<tr><td>Accessories Supplied</td><td>None</td></tr>
</table>

Note: Pursuant ISO 17025:2017 section 7.8.2, Audix Technology Corp. does not assume responsibility for all EUT's information including RF features, transmit type, antenna information…etc are provided by customer.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.3. Reference Test Guidance

IEEE 1528-2013
IEC/IEEE 62209-1528:2020
KDB 447498 D04 Interim General RF Exposure Guidance v01
KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r04
KDB 616217 D04 SAR for laptop and tablets v01r02
KDB 248227 D01 802 11 Wi-Fi SAR v02r02

3.4. Information for Permissive Change

- The EUT is an addition version with original FCC ID: TX2-RTL8852BE is to add the host (Host name: Notebook PC, brand: ECS, Model: EP20AN2)
- Due to add host, the SAR should be tested, the test data are recorded in this report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.5. Antenna Information of Host

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
1.	F-0G-MA-6010-003-00 (Main)	Speed	PIFA	2400~2483.5	1.51
				5150~5250	1.65
				5230-5350	2.31
				5470-5725	0.62
				5725-5850	1.62
				5925-6425	0.93
				6425-6525	2.54
				6525-6875	0.25
				6875-7125	2.61
	F-0G-MA-6010-004-00 (AUX)	Speed	PIFA	2400~2483.5	1.53
				5150~5250	1.66
				5230-5350	1.83
				5470-5725	0.83
				5725-5850	1.74
				5925-6425	1.47
				6425-6525	2.15
				6525-6875	0.89
				6875-7125	2.28

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.6. EUT Specifications Assessed in Current Report

2.4GHz		
Mode	Fundamental Range (MHz)	Channel Number
802.11b	2412-2472	13
802.11g		
802.11n-HT20		
802.11ax-HE20		
802.11n-HT40	2422-2462	9
802.11ax-HE40		
Bluetooth	2402-2480	79
BLE	2402-2480	40

5GHz			
Mode	U-NII Band	Fundamental Range (MHz)	Channel Number
802.11a	1	5180-5240	4
	2A	5260-5320	4
	2C	5500-5720	12
	3	5745-5825	5
	4	5845-5885	3
802.11n-HT20 802.11ac-VHT20 802.11ax-HE20	1	5180-5240	4
	2A	5260-5320	4
	2C	5500-5720	12
	3	5745-5825	5
	4	5845-5885	3
802.11n-HT40 802.11ac-VHT40 802.11ax-HE40	1	5190-5230	2
	2A	5270-5310	2
	2C	5510-5710	6
	3	5755-5795	2
	4	5845-5885	2
802.11ac-VHT80 802.11ax-HE80	1	5210	1
	2A	5290	1
	2C	5530-5690	3
	3	5775	1
	4	5855	1
Remark: U-NII Band 2A and 2C (DFS Function, Slave/no In service monitor, no Ad-Hoc mode)			

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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		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
802.11ac-VHT160		Up to 1733.3
802.11ax-HE20	OFDMA (BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM)	Up to 287
802.11ax-HE40		Up to 574
802.11ax-HE80		Up to 1201
802.11ax-HE160		Up to 2402
Bluetooth	FHSS (GFSK, π/4 DQPSK, 8-DPSK)	Up to 3
BLE	GFSK(1Mbps, 2Mbps)	Up to 2

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.7. Test Environment

Ambient conditions in the laboratory:

Item	Require	Actual
Temperature (℃)	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. 491, Zhongfu Rd., 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

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.9. Measurement Uncertainty

DASY5 Uncertainty 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) veff
Measurement System								
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%	∞
Test Sample Related								
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%	∞
Phantom and Setup								
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%	∞
Combined Std. Uncertainty						±11%	±10.8%	387
Expanded STD Uncertainty						±22%	±21.5%	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

DASY5 Uncertainty

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) veff
Measurement System								
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%	∞
Test Sample Related								
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%	∞
Phantom and Setup								
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(mea.)DAK	±2.5%	R	√3	0.6	0.49	±0.9%	±0.7%	∞
Combined Std. Uncertainty						±11.0%	±10.9%	387
Expanded STD Uncertainty						±22.1%	±21.8%	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

4. MEASUREMENT EQUIPMENTLIST

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Stäubli Robot TX90 XL	Stäubli	TX90	F12/5K9SA1/A101	N.C.R.	N.C.R.
2.	Controller	SPEAG	CS8c	N/A	N.C.R.	N.C.R.
3.	SAM Twin Phantom	SPEAG	N/A	1706	N.C.R.	N.C.R.
4.	ELI V5.0 Phantom	SPEAG	N/A	1170	N.C.R.	N.C.R.
5.	Device Holder	SPEAG	N/A	N/A	N.C.R.	N.C.R.
6.	Data Acquisition Electronic	SPEAG	DAE4	1337	2025.03.21	1 Year
7.	E-Field Probe	SPEAG	EX3DV4	3855	2024.09.17	1 Year
8.	ENA Network Analyzer	Agilent	E5071C-480	MY46214331	2024.09.25	1 Year
9.	Signal Generator	Agilent	N5182B	MY53050409	2024.11.29	1 Year
10.	Power Meter	Aglient	ML2487A	MY52180007	2024.08.28	1 Year
11.	Power Sensor	Aglient	N8481	MY52080006	2024.08.28	1 Year
12.	Dipole Antenna	SPEAG	D2450V2	888	2024.09.13	3 Years
13.	Dipole Antenna	SPEAG	D5GHzV2	1124	2024.09.17	3 Years
14.	Test Software	Speag	DASY52 52.10.4	N/A	N.C.R.	N.C.R.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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 (ρ). The equation description is as below:

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

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

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

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

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 form the optical into digital electric signal of the DAE and transfers data to the PC.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

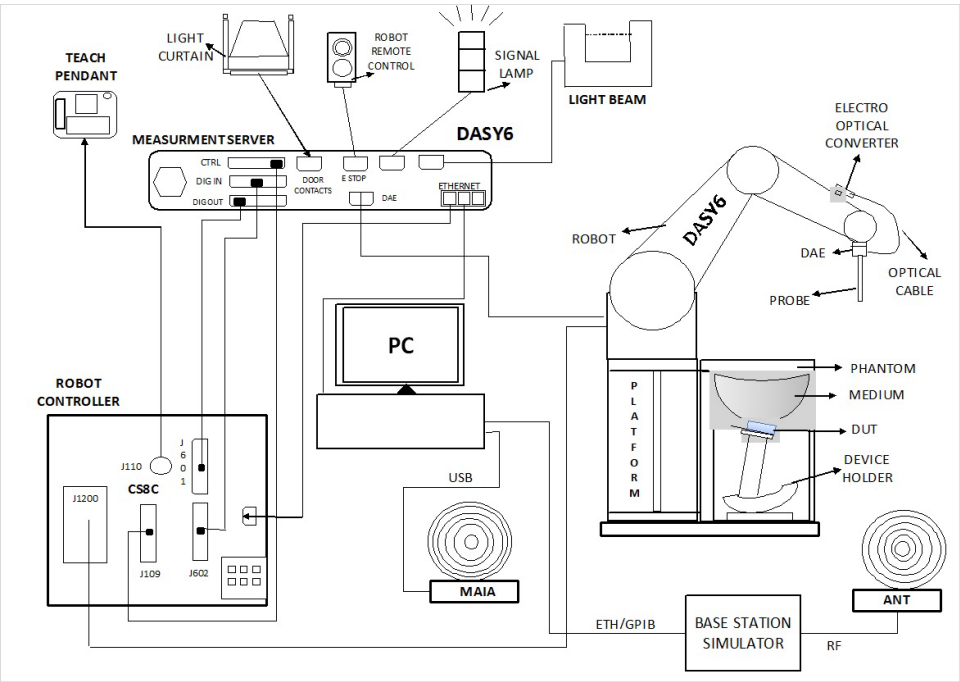
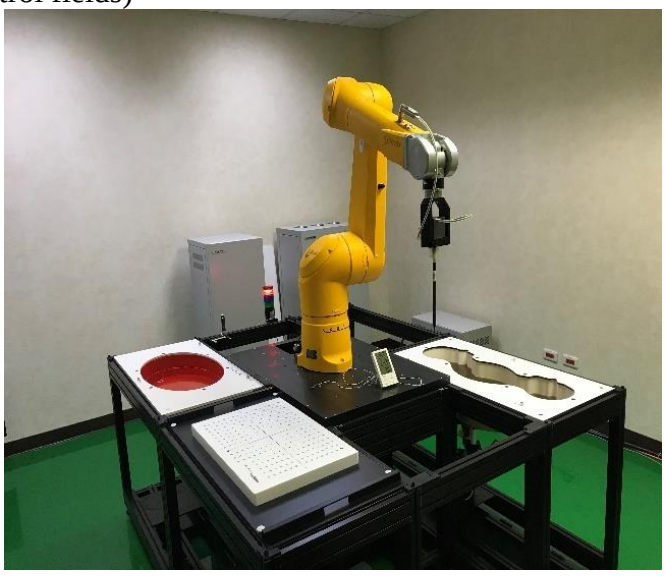


Fig-3.1 DASY6 System Setup

5.2.1. Robot

The DASY6 system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

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



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

5.2.2. Probes

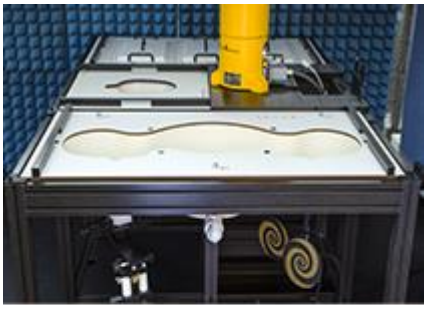
Model	EX3DV4	
Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
DynamicRange	10 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/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	

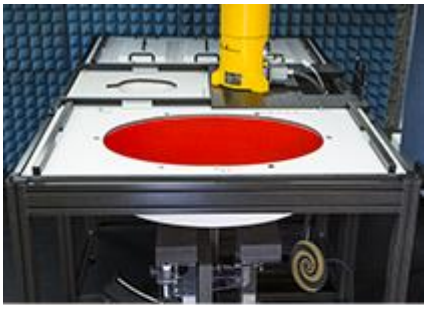
5.2.3. Data Acquisition Electronics (DAE)

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.	
MeasurementRange	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	< 5µV (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

5.2.4. Phantom

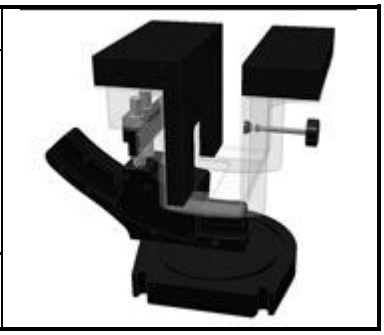
Model	Twin SAM	 
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover 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	Vinylester, 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	Vinylester, 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	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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 l/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)	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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.

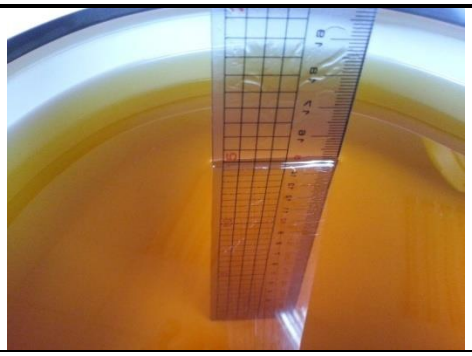


Photo of Liquid Height

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.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Table-5.1 Targets of Tissue Simulating Liquid

Target Frequency [MHz]	Target Permittivity (εr)	Range of ± 5%	Target Conductivity σ[s/m]	Range of ± 5%
750	41.9	39.805 ~ 43.995	0.89	0.846 ~ 0.935
835	41.5	39.425 ~ 43.575	0.90	0.855 ~ 0.945
900	41.5	39.425 ~ 43.575	0.97	0.922 ~ 1.019
1450	40.5	38.475 ~ 42.525	1.20	1.140 ~ 1.260
1640	40.3	38.285 ~ 42.315	1.29	1.226 ~ 1.355
1750	40.1	38.095 ~ 42.105	1.37	1.302 ~ 1.439
1800	40.0	38.000 ~ 42.000	1.40	1.330 ~ 1.470
1900	40.0	38.000 ~ 42.000	1.40	1.330 ~ 1.470
2000	40.0	38.000 ~ 42.000	1.40	1.330 ~ 1.470
2300	39.5	37.525 ~ 41.475	1.67	1.587 ~ 1.754
2450	39.2	37.240 ~ 41.160	1.80	1.710 ~ 1.890
2600	39.0	37.050 ~ 40.950	1.96	1.862 ~ 2.058
3500	37.9	36.005 ~ 39.795	2.91	2.765 ~ 3.056
5200	36.0	34.2.00 ~ 37.800	4.66	4.427 ~ 4.893
5300	35.9	34.105 ~ 37.695	4.76	4.522 ~ 4.998
5500	35.6	33.820 ~ 37.380	4.96	4.712 ~ 5.208
5600	35.5	33.725 ~ 37.275	5.07	4.817 ~ 5.324
5800	35.3	33.535 ~ 37.065	5.27	5.007 ~ 5.534
6000	35.1	33.345~ 36.855	5.48	5.206 ~ 5.754
6500	34.5	32.775 ~ 36.225	6.07	5.767 ~ 6.374
7000	33.9	32.205 ~ 35.595	6.65	6.318 ~ 6.983

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Table-5.2-1 Recipes of Tissue Simulating Liquid, 30MHz to 900MHz

Frequency (MHz)	**30**	**50**		**144**		**450**		**835**	**900**	
Recipe source number	3	3	2	2	3	2	4	2	2	4
Ingredients (% by weight)										
De-ionized water	48,30	48,30	53,53	55,12	48,30	48,53	56	50,36	50,31	56
Tween 20			44,70	43,31		49,51		48,39	48,34	
Oxidized mineral oil							44			44
Diethylenglycol monohexylether										
Triton X-100										
Diacetin	50,00	50,00			50,00					
DGBE										
NaCl	1,60	1,60	1,77	1,57	1,60	1,96		1,25	1,35	
Additives and salt	0,10	0,10			0,10					
Measured temperature dependence										
Temp. (°C)			21	21		21	20	21	21	20
$\varepsilon_{\text{liquid temp. unc.}}$ (%)	0,8	0,1			0,1	0,1		0,04	0,04	
$\sigma_{\text{liquid temp. unc.}}$ (%)	2,8	2,8			2,6	4,2		1,6	1,6	

Table-5.2-2 Recipes of Tissue Simulating Liquid, 1800MHz to 10000MHz

Frequency (MHz)	**1 800**		**2 450**	**4 000**	**5 000**	**5 200**	**5 800**	**6 000**	**8 000**	**10 000**
Recipe source number	2	4	4	4	4	1	1	4	5	5
Ingredients (% by weight)										
De-ionized water	54,23	56	56	56	56	65,53	65,53	56	67,8	66,0
Tween	45,27								31,1	33,0
Oxidized mineral oil		44	44	44	44			44		
Diethylenglycol monohexylether						17,24	17,24			
Triton X-100						17,24	17,24			
Diacetin										
DGBE										
NaCl	0,50									
Additives and salt										
Measured temperature dependence										
Temp. (°C)	21	20	20	20	20	22	22	20	20	20
$\varepsilon_{\text{liquid temp. unc.}}$ (%)	0,4					1,7	1,8			
$\sigma_{\text{liquid temp. unc.}}$ (%)	2,3					2,7	2,6			

NOTE 1 Multiple columns under a single frequency indicate optional recipes.

NOTE 2 Recipe source numbers: 1 verified by different labs, 2 Reference [59], 3 developed by IT'IS Foundation, 4 developed by IT'IS Foundation, 5 Reference [60].

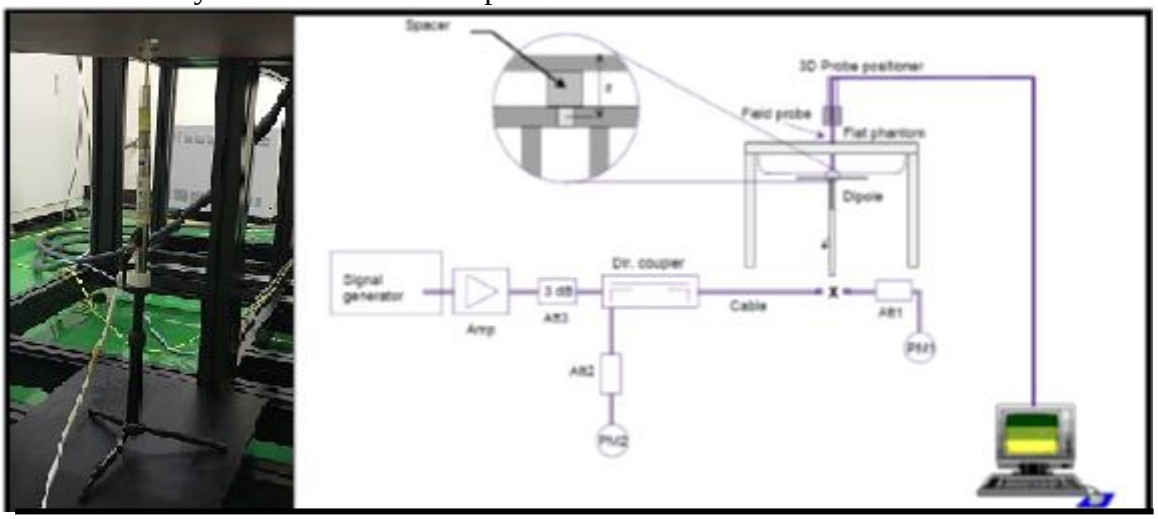
NOTE 3 The values of $\varepsilon_{\text{liquid temp. unc.}}$ and $\sigma_{\text{liquid temp. unc.}}$ are liquid temperature uncertainties described in O.9.6, based on measurements of the applicable liquid recipes given above. These are not part of the original publications but have been subsequently developed by the project team.

NOTE 4 The recipes at 8 000 MHz and 10 000 MHz are sufficiently broadband that they cover the frequency range of 6 000 MHz to 10 000 MHz within a tolerance of ±10 % for permittivity and conductivity.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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 loation 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 %.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

5.3.1. SAR System Verification Result

Dipole Kit: D2450V2

Test Date:2025. 03. 24 Liquid Temp. [℃]: 20.0

Frequency [MHz]	1g SAR			10g SAR		
2450MHz	Zoom Scan to 250mW	Normalize to 1W	Target Value Reference result ± 10% window	Zoom Scan to 250mW	Normalize to 1W	Target Value Reference result ± 10% window
	12.4	49.60	51.8 (46.62 to 56.98)	5.92	23.68	24.2 (21.78 to 26.62)

Dipole Kit: D5GHzV2

Test Date: 2025. 03. 26 Liquid Temp. [℃]: 20.0

Frequency [MHz]	1g SAR			10g SAR		
5200MHz	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window
	8.65	86.50	82.7 (74.43 to 90.97)	2.46	24.60	23.6 (21.24 to 25.96)

Dipole Kit: D5GHzV2

Test Date: 2025. 03. 26 Liquid Temp. [℃]: 20.0

Frequency [MHz]	1g SAR			10g SAR		
5600MHz	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window
	8.71	87.10	79.6 (71.64 to 87.56)	2.48	24.80	23.20 (20.88 to 25.52)

Dipole Kit: D5GHzV2

Test Date: 2025. 03. 27 Liquid Temp. [℃]: 19.0

Frequency [MHz]	1g SAR			10g SAR		
5800MHz	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window
	8.32	83.20	78.0 (70.20 to 85.80)	2.44	24.40	22.60 (20.34 to 24.86)

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Dipole Kit: D5GHzV2

Test Date: 2025. 04. 29 Liquid Temp. [℃]: 19.0

Frequency [MHz]	1g SAR					10g SAR				
5800MHz	Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window			Zoom Scan to 100mW	Normalize to 1W	Target Value Reference result ± 10% window		
	8.34	83.40	78.0			2.25	22.50	22.60		
			70.20	to	85.80			20.34	to	24.86

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

5.3.2. SAR System Check Data

Date: 3/24/2025

Test Laboratory: Audix_SAR Lab

System Check_H2450

DUT: D2450V2 - SN888

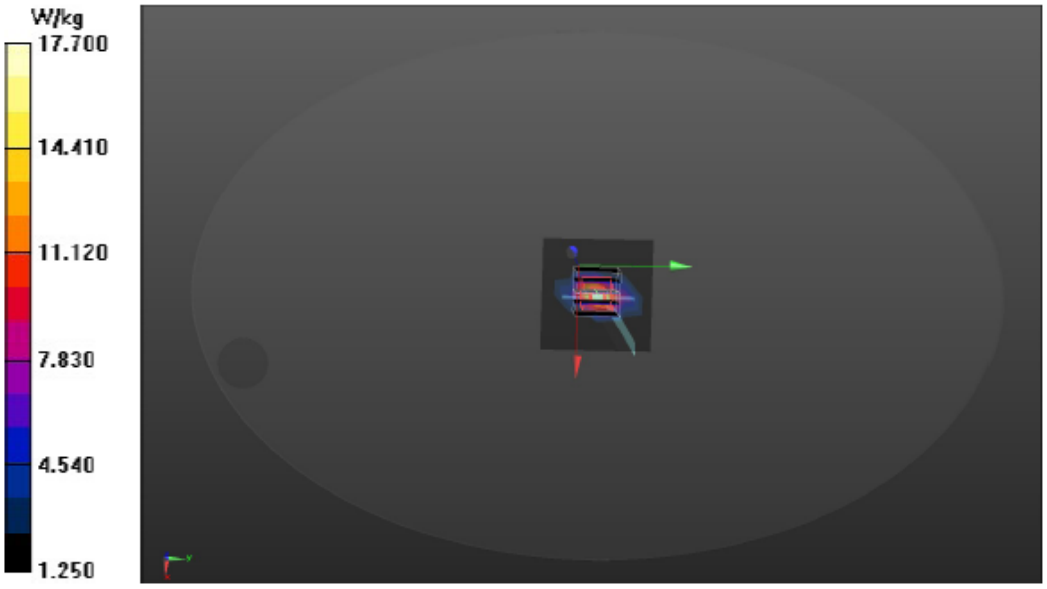
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle:1:1
Medium parameters used: f = 2450 MHz; σ = 1.765 S/m; ε_r = 40.161; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.15, 7.5, 7.88) @ 2450 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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=20mm, dy=20mm
Maximum value of SAR (measured) = 18.5 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 90.33 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 23.8 W/kg
SAR(1 g) = 12.4 W/kg; SAR(10 g) = 5.92 W/kg
Smallest distance from peaks to all points 3 dB below = 9.4 mm
Ratio of SAR at M2 to SAR at M1 = 58.4%
Maximum value of SAR (measured) = 17.7 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 3/26/2025

Test Laboratory: Audix_SAR Lab

System Check_H5200

DUT: D5GHzV2 - SN1124

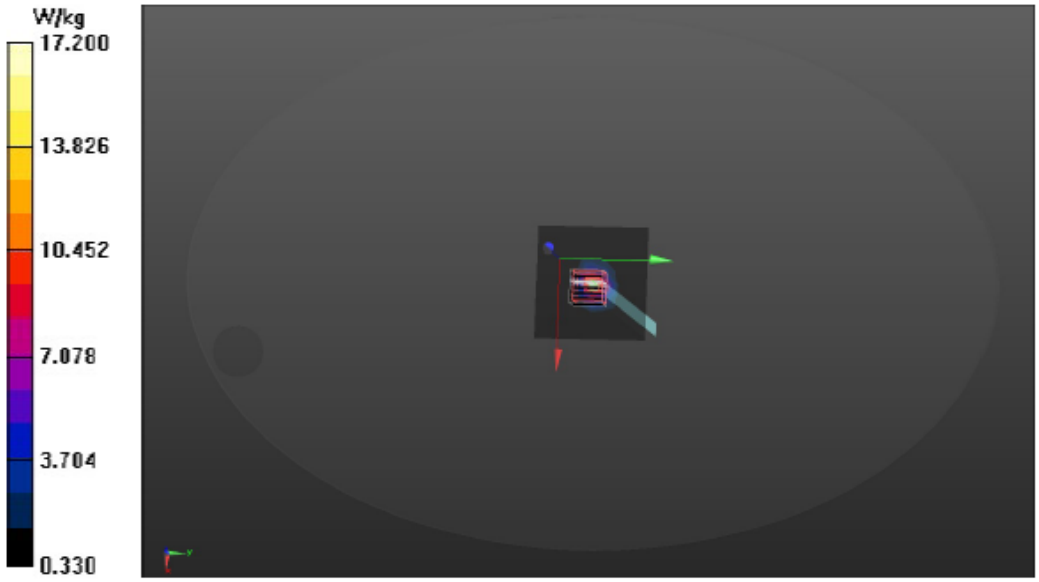
Communication System: UID 0, CW (0); Frequency: 5200 MHz;Duty Cycle:1:1
Medium parameters used: f = 5200 MHz; σ = 4.696 S/m; ε_r = 37.048; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.29, 5.55, 5.83) @ 5200 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (9x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 16.8 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 47.08 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 36.5 W/kg
SAR(1 g) = 8.65 W/kg; SAR(10 g) = 2.46 W/kg
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 58.3%
Maximum value of SAR (measured) = 17.2 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 3/26/2025

Test Laboratory: Audix_SAR Lab

System Check_H5600

DUT: D5GHzV2 - SN1124

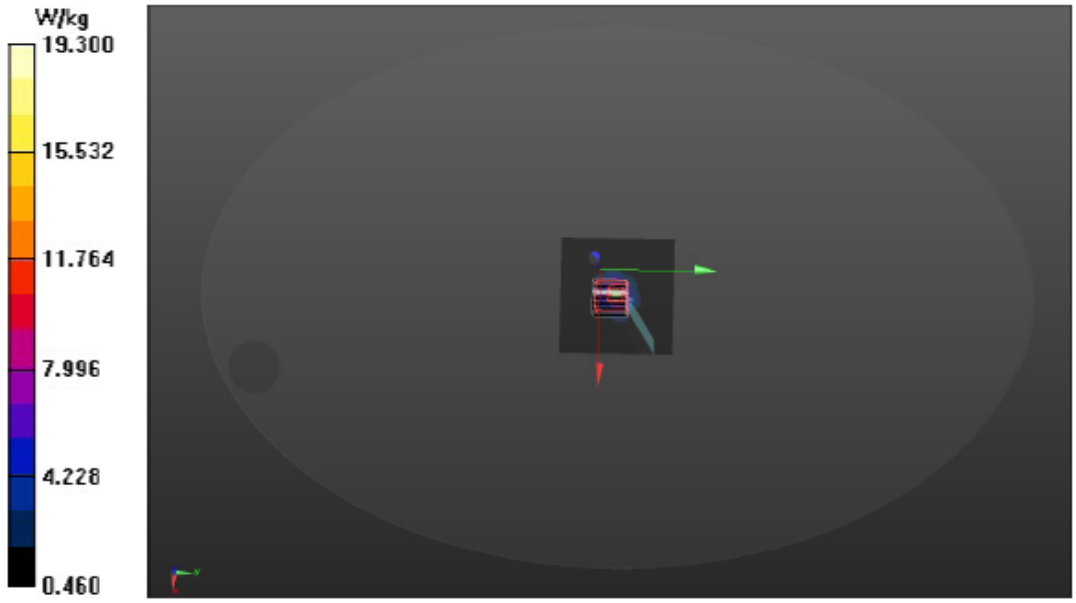
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle:1:1
Medium parameters used: f = 5600 MHz; σ = 5.199 S/m; ε_r = 36.179; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.84, 5.08, 5.34) @ 5600 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (9x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 18.4 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 46.19 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 43.0 W/kg
SAR(1 g) = 8.71 W/kg; SAR(10 g) = 2.48 W/kg
Smallest distance from peaks to all points 3 dB below = 7.8 mm
Ratio of SAR at M2 to SAR at M1 = 52.6%
Maximum value of SAR (measured) = 19.3 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 3/27/2025

Test Laboratory: Audix_SAR Lab

System Check_H5800

DUT: D5GHzV2 - SN1124

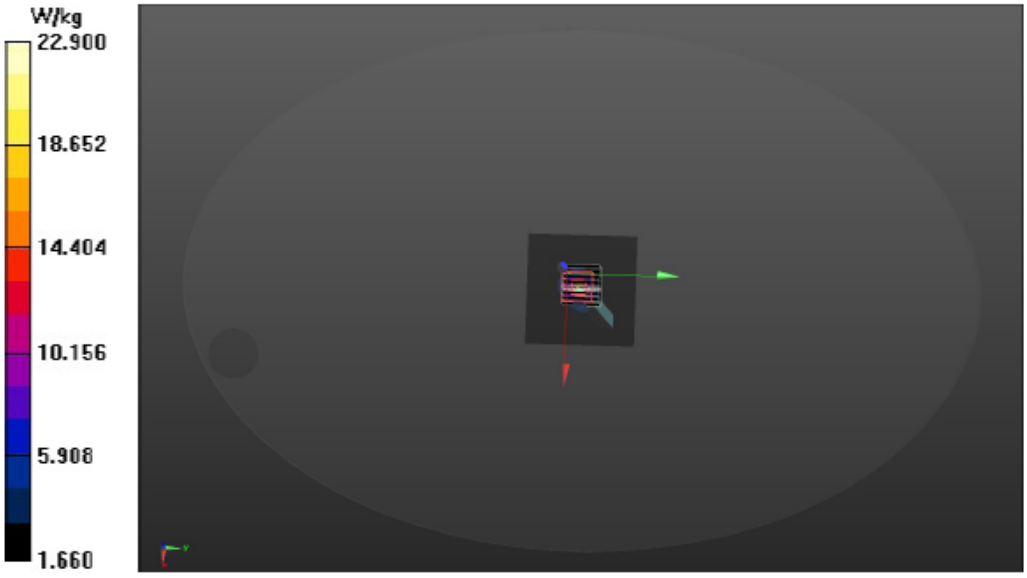
Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle:1:1
Medium parameters used: f = 5800 MHz; σ = 5.432 S/m; ε_r = 35.732; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.87, 5.11, 5.36) @ 5800 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 23.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (9x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 21.0 W/kg

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.03 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 40.4 W/kg
SAR(1 g) = 8.32 W/kg; SAR(10 g) = 2.44 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 60.4%
Maximum value of SAR (measured) = 22.9 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 4/29/2025

Test Laboratory: Audix_SAR Lab

System Check_H5800

DUT: Dipole D5GHzV2

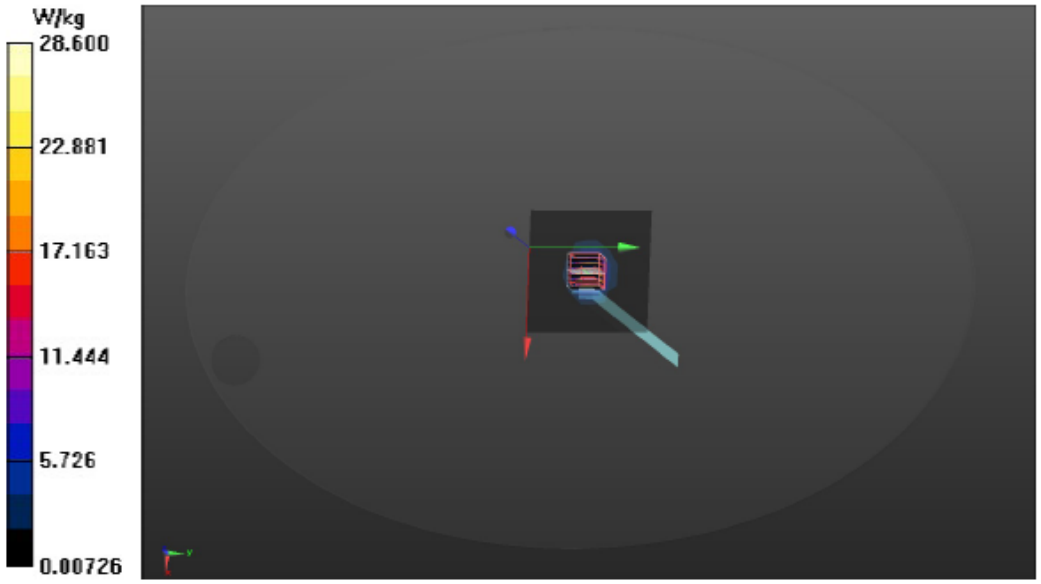
Communication System: UID 0, CW; Frequency: 5800 MHz;Duty Cycle:1:1
Medium parameters used: f = 5800 MHz; σ = 5.445 S/m; ε_r = 35.778; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.87, 5.11, 5.36) @ 5800 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 21.0
- Electronics: DAE4 Sn1337; Calibrated: 3/21/2025
- 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 (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 33.0 W/kg

Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 57.56 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 53 W/kg
SAR(1 g) = 8.34 W/kg; SAR(10 g) = 2.25 W/kg
Smallest distance from peaks to all points 3 dB below = 8.4 mm
Ratio of SAR at M2 to SAR at M1 = 49.7%
Maximum value of SAR (measured) = 28.6 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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

According to IEC/IEEE 62209-1528, the resolution for Area and Zoom scan is specified in the table below.

Items	≤2 GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan (Δx, Δy)	≤15mm	≤12mm	≤12mm	≤10mm	≤10mm
Zoom Scan (Δx, Δy)	≤8mm	≤5mm	≤5mm	≤4mm	≤4mm
Zoom Scan (Δz)	≤5mm	≤5mm	≤4mm	≤3mm	≤2mm
Zoom Scan Volume	≥30mm	≥30mm	≥28mm	≥25mm	≥22mm

Note:
When zoom scan is required and report SAR is <= 1.4 W/kg, the zoom scan resolution of Δx / Δy (2-3GHz: ≤ 8 mm, 3-4GHz: ≤7 mm, 4-6GHz: ≤5 mm) may be applied.

According to IEC/IEEE 62209-1528, if the zoom scan measured as specified in the preceding paragraphs complies with both of the following items, or if the peak spatial-average SAR is below 0.1 W/kg, no additional measurements are needed:

(1) The smallest horizontal distance from the local SAR peaks to all points 3 dB below the SAR peak shall be larger than the horizontal gird steps in both x and y directions (Δx, Δy). This shall be checked for the measured zoom scan plane conformal to the phantom at the distance z_{M1}.
(2) The ratio of the SAR at the second measured point (M2) to the SAR at the closest measured point (M1) at the x, y location of the measured mazimum SAR value shall be at least 30%.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6. SAR MEASUREMENT EVALUATION

6.1. Test Configuration and EUT setting

The standalone SAR test exclusion shall be refer to FCC § 1.1307 (b)(3)(i)(B) SAR-Based exemption which device determined the distance from antenna to user/bystander. The formula is

P_{th} (mW) = ERP_{20cm} $(d / 20)^x$ for distance $d \leq 20cm$
P_{th} (mW) = ERP_{20cm} for distance $20cm < d \leq 40cm$
$x = -\log10 (\frac{60}{ERP20cm\sqrt{f}})$
ERP_{20cm}(mW) 0.3 GHz ≤ f < 1.5 GHz: 2040f
1.5 GHz ≤ f ≤ 6 GHz: 3060

F = GHz
P_{th}(mW) = available maximum time-average power or effective radiated power, whichever is greater.
D = the separation distance (cm)

From KDB 616217 D04 section 4.2 to 4.3, The SAR exclusion threshold can be applied to KDB 447498 to determine if SAR necessary test.

Test program "AX series MP toolkit Ver: mp_V1.0.48" is used for enabling EUT WLAN function and the test program "RTLBTAPP Ver: 5.2.3.24 is used for enabling EUT BT function under continues transmitting and choosing data rate/ channel and supported stable power rating.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.2. EUT Testing Position

SAR-Based exemption table

Centre Frequency (MHz)	5	10	15	20	25	Distance(mm)
2450	3.000	10.000	22.000	38.000	59.000	Power(mW)
5200	2.000	6.000	15.000	26.000	42.000	
5500	1.000	6.000	14.000	26.000	41.000	
5800	1.000	6.000	14.000	25.000	40.000	
	30	35	40	45	50	Distance(mm)
2450	83.000	111.000	143.000	179.000	219.000	Power(mW)
5200	61.000	84.000	110.000	110.000	110.000	
5500	59.000	82.000	108.000	108.000	108.000	
5800	58.000	80.000	106.000	106.000	106.000	
	7	10	15	20	25	Distance(cm)
2450	415.000	819.000	1770.000	3060.000	3060.000	Power(mW)
5200	350.000	731.000	1689.000	3060.000	3060.000	
5500	345.000	725.000	1683.000	3060.000	3060.000	
5800	341.000	719.000	1678.000	3060.000	3060.000	
	30	33	35	37	40	Distance(cm)
2450	3060.000	3060.000	3060.000	3060.000	3060.000	Power(mW)
5200	3060.000	3060.000	3060.000	3060.000	3060.000	
5500	3060.000	3060.000	3060.000	3060.000	3060.000	
5800	3060.000	3060.000	3060.000	3060.000	3060.000	

The SAR testing required mode is listed as below.
Tablet Mode:

Antenna	Front Face	Rear Face	Top Side	Bottom Side	Left Side	Right Side	Back Side
WLAN			√	√	√	√	

Laptop Mode

Antenna	Front Face	Rear Face	Top Side	Bottom Side	Left Side	Right Side	Back Side
WLAN				√			

According to SAR-Based exemption table, the laptop only need evaluate bottom side and tablet only need evaluate top, bottom, left and right side.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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]
		σ[s/m]	ε_r	
2450MHz	Reference result ± 5% window	1.8 1.710 to 1.890	39.2 37.240 to 41.160	N/A
	2025. 03. 24	1.765	40.161	20.0

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		σ[s/m]	ε_r	
5200MHz	Reference result ± 5% window	4.66 4.427 to 4.893	36.00 34.200 to 37.800	N/A
	2025. 03. 26	4.696	37.048	20.0

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		σ[s/m]	ε_r	
5600MHz	Reference result ± 5% window	5.07 4.817 to 5.324	35.5 33.725 to 37.275	N/A
	2025. 03. 26	5.199	36.179	20.0

Body Tissue Simulate Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Liquid Temp. [°C]
		σ[s/m]	ε_r	
5800MHz	Reference result ± 5% window	5.27 5.007 to 5.534	35.3 33.535 to 37.065	N/A
	2025. 03. 27	5.432	35.732	19.0
	2025. 04. 29	5.445	35.778	20.0

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.5. Conducted Power Measurement

Note:

1. Per KDB 447498 D04 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 D04 for each exposure position, if the highest output channel reported SAR ≤0.8W/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(802.11a/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 specifiedmaximum output power and the adjusted SAR is ≤ 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 ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power.The highest reportedSAR for the testedconfiguration is adjusted by the ratio of lower to higher specified maximum output powerfor the two bands.When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output powerin that test configuration; otherwise, each band is tested independently for SAR.
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. Pursuant section 2.8.1(2) KDB 865664 D01, when the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
8. 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 ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit)

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.5.1. For WLAN Function

Type of Network	Frequency (MHz)	Average Output Power (dBm)						SAR Test
		AUX-ANT			Main-ANT			
		Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11b	2412	19.87	20.5	---	19.47	20.0	---	No NOTE2
	2437	**21.00**	**22.0**	**1.259**	**20.98**	**21.5**	**1.127**	**Yes**
	2462	20.91	21.5	---	20.82	21.5	---	No NOTE2
	2467	16.46	17.0	---	16.00	17.0	---	
	2472	13.10	14.0	---	12.62	13.3	---	NoNOTE2
802.11g	2412	16.89	17.5	---	16.61	17.3	---	NoNOTE6
	2437	21.62	22.3	---	21.74	22.3	---	
	2462	16.79	17.3	---	16.71	17.3	---	
	2467	12.93	13.5	---	12.94	13.5	---	
	2472	12.01	13.0	---	11.91	12.5	---	
802.11ac-VHT20	2412	15.75	16.3	---	15.63	16.3	---	NoNOTE4,3
	2437	21.55	22.3	---	21.65	22.3	---	
	2462	15.84	16.5	---	15.81	16.5	---	
	2467	12.81	13.5	---	12.72	13.3	---	
	2472	11.66	12.3	---	11.57	12.3	---	
802.11ac-VHT40	2422	14.74	15.3	---	14.69	15.3	---	
	2437	17.76	18.3	---	17.97	18.5	---	
	2452	14.65	15.3	---	14.72	15.3	---	
	2457	11.78	12.3	---	11.76	12.3	---	
	2462	10.61	11.3	---	10.62	11.3	---	
802.11ax-HE20	2412	15.95	16.5	---	15.90	16.5	---	
	2437	21.48	22.0	---	21.69	22.3	---	
	2462	15.89	16.5	---	15.83	16.5	---	
	2467	13.05	14.0	---	12.92	13.5	---	
	2472	11.87	12.5	---	11.63	12.3	---	
802.11ax-HE40	2422	14.90	15.5	---	14.89	15.5	---	
	2437	17.72	18.3	---	17.91	18.5	---	
	2452	14.83	15.5	---	14.99	15.5	---	
	2457	11.97	12.5	---	11.96	12.5	---	
	2462	10.96	11.5	---	10.98	11.5	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Type of Network	Frequency (MHz)	RU Configuration	Average Output Power (dBm)						SAR Test
			AUX-ANT			Main-ANT			
			Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11ax-HE20	2412	26/0	16.81	17.5	---	16.00	17.0	---	No[NOTE4,3]
		52/37	18.20	19.0	---	17.58	18.3	---	
		106/53	19.00	20.0	---	18.42	19.0	---	
	2437	26/4	19.68	20.3	---	19.37	20.0	---	
		52/39	20.04	21.0	---	19.72	20.3	---	
		106/54	18.88	19.5	---	18.64	19.3	---	
	2462	26/8	16.42	17.0	---	16.08	17.0	---	
		52/40	18.01	19.0	---	17.78	18.3	---	
		106/54	18.68	19.3	---	18.44	19.0	---	
	2467	26/8	14.15	15.0	---	13.75	14.3	---	
		52/40	13.19	14.0	---	12.93	13.5	---	
		106/54	16.33	17.0	---	16.10	17.0	---	
	2472	26/8	9.12	10.0	---	8.55	9.3	---	
		52/40	9.38	10.0	---	8.95	9.5	---	
		106/54	11.95	12.5	---	11.56	12.3	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Type of Network	Frequency (MHz)	Average Output Power (dBm)						SAR Test
		AUX-ANT			Main-ANT			
		Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11a	5180	19.24	20.0	---	18.03	19.0	---	No[NOTE3,5]
	5200	19.14	20.0	---	18.21	19.0	---	No[NOTE3,5]
	5240	19.02	20.0	---	18.08	19.0	---	No[NOTE3,5]
	5260	**19.38**	**20.0**	**1.153**	**18.58**	**19.3**	**1.180**	**Yes**
	5300	**19.25**	**20.0**	**1.189**	**18.35**	**19.0**	**1.161**	**Yes**
	5320	19.15	20.0	---	18.27	19.0	---	No[NOTE2]
	5500	18.81	19.5	---	17.44	18.0	---	No[NOTE2,3]
	5580	**19.21**	**20.0**	**1.199**	**18.58**	**19.3**	**1.180**	**Yes**
	5700	18.60	19.3	---	17.60	18.3	---	No[NOTE4,3]
	5720	18.02	19.0	---	17.00	18.0	---	No[NOTE4,3]
	5745	**20.94**	**21.5**	**1.138**	**20.23**	**21.0**	**1.194**	**Yes**
	5785	20.79	21.3	---	19.98	20.5	---	No[NOTE4,3]
	5825	**20.65**	**21.3**	**1.161**	**20.28**	**21.0**	**1.180**	**Yes**
	5845	13.37	14.0	---	13.05	14.0	---	No[NOTE4,3]
	5865	13.13	14.0	---	13.24	14.0	---	
	5885	**13.33**	**14.0**	**1.167**	**13.58**	**14.3**	**1.180**	**Yes**
802.11ac-VHT20	5180	19.27	20.0	---	18.16	19.0	---	No[NOTE4,3]
	5200	19.35	20.0	---	18.28	19.0	---	
	5240	19.36	20.0	---	18.44	19.0	---	
	5260	19.32	20.0	---	18.55	19.3	---	
	5300	19.33	20.0	---	18.55	19.3	---	
	5320	19.39	20.0	---	18.62	19.3	---	
	5500	19.01	20.0	---	17.60	18.3	---	
	5580	19.11	20.0	---	18.38	19.0	---	
	5700	18.53	19.3	---	17.59	18.3	---	
	5720	17.72	18.3	---	16.55	17.3	---	
	5745	20.88	21.5	---	20.20	21.0	---	
	5785	20.91	21.5	---	20.12	21.0	---	
	5825	20.67	21.3	---	20.14	21.0	---	
	5845	13.30	14.0	---	13.49	14.0	---	
	5865	13.25	14.0	---	13.29	14.0	---	
	5885	13.17	14.0	---	13.53	14.3	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Type of Network	Frequency (MHz)	Average Output Power (dBm)						SAR Test
		AUX-ANT			Main-ANT			
		Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11ac-VHT40	5190	16.96	17.5	---	15.96	16.5	---	No[NOTE4,3]
	5230	20.99	21.5	---	20.14	21.0	---	
	5270	21.12	22.0	---	20.33	21.0	---	
	5310	16.95	17.5	---	16.27	17.0	---	
	5510	15.82	16.5	---	14.59	15.3	---	
	5550	21.04	22.0	---	20.20	21.0	---	
	5670	18.88	19.5	---	17.92	18.5	---	
	5710	20.07	21.0	---	19.11	20.0	---	
	5755	21.19	22.0	---	20.26	21.0	---	
	5795	21.16	22.0	---	20.37	21.0	---	
	5835	13.44	14.0	---	13.28	14.0	---	
	5875	13.47	14.0	---	13.32	14.0	---	
802.11ac-VHT80	5210	15.82	16.5	---	15.11	16.0	---	No[NOTE4,3]
	5290	16.86	17.5	---	16.18	17.0	---	
	5530	15.64	16.3	---	14.70	15.3	---	
	5610	19.02	20.0	---	18.79	19.3	---	
	5690	19.48	20.0	---	18.63	19.3	---	
	5775	20.31	21.0	---	18.89	19.5	---	
	5855	13.43	14.0	---	13.29	14.0	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Type of Network	Frequency (MHz)	Average Output Power (dBm)						SAR Test
		AUX-ANT			Main-ANT			
		Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11ax-HE20	5180	19.69	20.3	---	18.71	19.3	---	No[NOTE4,3]
	5200	19.71	20.3	---	18.62	19.3	---	
	5240	19.70	20.3	---	18.73	19.3	---	
	5260	19.43	20.0	---	18.64	19.3	---	
	5300	19.36	20.0	---	18.62	19.3	---	
	5320	19.66	20.3	---	18.79	19.3	---	
	5500	19.19	20.0	---	17.80	18.5	---	
	5580	19.58	20.3	---	18.73	19.3	---	
	5700	18.69	19.3	---	17.79	18.3	---	
	5720	18.24	19.0	---	17.17	18.0	---	
	5745	20.60	21.3	---	20.03	21.0	---	
	5785	20.59	21.3	---	19.96	20.5	---	
	5825	20.48	21.0	---	19.96	20.5	---	
	5845	13.20	14.0	---	13.65	14.3	---	
	5865	13.07	14.0	---	13.45	14.0	---	
	5885	13.08	14.0	---	13.41	14.0	---	
802.11ax-HE40	5190	17.14	18.0	---	16.34	17.0	---	No[NOTE4,3]
	5230	21.26	22.0	---	20.42	21.0	---	
	5270	21.05	22.0	---	20.45	21.0	---	
	5310	17.11	18.0	---	16.56	17.3	---	
	5510	16.06	17.0	---	14.77	15.3	---	
	5550	21.19	22.0	---	20.41	21.0	---	
	5670	19.23	20.0	---	18.24	19.0	---	
	5710	20.28	21.0	---	19.42	20.0	---	
	5755	20.67	21.3	---	20.01	21.0	---	
	5795	20.71	21.3	---	20.24	21.0	---	
	5835	13.34	14.0	---	13.53	14.3	---	
	5875	13.17	14.0	---	13.45	14.0	---	
802.11ax-HE80	5210	15.98	16.5	---	15.02	16.0	---	No[NOTE4,3]
	5290	16.92	17.5	---	16.64	17.3	---	
	5530	15.88	16.5	---	14.97	15.5	---	
	5610	19.17	20.0	---	19.03	20.0	---	
	5690	19.64	20.3	---	18.97	19.5	---	
	5775	20.61	21.3	---	20.19	21.0	---	
	5855	13.13	14.0	---	13.30	14.0	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Type of Network	Frequency (MHz)	RU Configuration	Average Output Power (dBm)						SAR Test
			AUX-ANT			Main-ANT			
			Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
802.11ax-HE20	5180	26/0	10.12	11.0	---	8.86	9.5	---	No[NOTE4,3]
		52/37	12.11	13.0	---	10.97	11.5	---	
		106/53	14.33	15.0	---	13.27	14.0	---	
	5200	26/4	11.09	12.0	---	10.01	11.0	---	
		52/39	12.81	13.5	---	11.70	12.3	---	
		106/53	14.48	15.0	---	13.27	14.0	---	
	5240	26/8	10.15	11.0	---	9.04	10.0	---	
		52/40	12.11	13.0	---	11.08	12.0	---	
		106/54	14.39	15.0	---	13.30	14.0	---	
	5260	26/0	10.23	11.0	---	8.98	9.5	---	
		52/37	12.79	13.3	---	11.68	12.3	---	
		106/53	14.28	15.0	---	13.23	14.0	---	
	5300	26/4	11.12	12.0	---	10.23	11.0	---	
		52/39	12.99	13.5	---	12.05	13.0	---	
		106/54	14.56	15.3	---	13.54	14.3	---	
	5320	26/8	10.23	11.0	---	9.02	10.0	---	
		52/40	11.99	12.5	---	10.89	11.5	---	
		106/54	14.46	15.0	---	13.53	14.3	---	
	5500	26/0	10.69	11.3	---	8.81	9.5	---	
		52/37	12.39	13.0	---	10.70	11.3	---	
		106/53	14.44	15.0	---	12.83	13.5	---	
	5580	26/4	11.20	12.0	---	10.41	11.0	---	
		52/39	12.25	13.0	---	11.47	12.0	---	
		106/53	13.98	14.5	---	13.11	14.0	---	
	5700	26/8	10.47	11.0	---	9.13	10.0	---	
		52/40	11.52	12.3	---	10.34	11.0	---	
		106/54	14.24	15.0	---	12.95	13.5	---	
	5720	26/8	11.16	12.0	---	9.93	10.5	---	
		52/37	13.31	14.0	---	12.28	13.0	---	
		106/53	14.13	15.0	---	13.01	14.0	---	
	5745	26/0	18.32	19.0	---	17.29	18.0	---	
		52/37	20.47	21.0	---	19.65	20.3	---	
		106/53	20.65	21.3	---	19.79	20.3	---	
	5785	26/4	21.14	22.0	---	20.57	21.3	---	
		52/39	21.03	22.0	---	20.38	21.0	---	
		106/54	20.61	21.3	---	19.97	20.5	---	
	5825	26/8	18.81	19.5	---	18.24	19.0	---	
		52/40	20.27	21.0	---	19.87	20.5	---	
		106/54	20.45	21.0	---	20.21	21.0	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.5.2. For BT Function

Type of Network	Frequency (MHz)	Average Output Power (dBm)						SAR Test
		AUX-ANT			Main-ANT			
		Average Power	Tune-Up Limit	Scale Factor	Average Power	Tune-Up Limit	Scale Factor	
Bluetooth (GFSK)	2402	10.85	11.5	---	---	---	---	No
	2441	10.90	11.5	1.148	---	---	---	Yes
	2480	10.71	11.3	---	---	---	---	No
Bluetooth (8-DPSK)	2402	8.07	9.0	---	---	---	---	
	2441	8.15	9.0	---	---	---	---	
	2480	7.91	8.5	---	---	---	---	
BLE (1Mbps)	2402	10.04	11.0	---	---	---	---	
	2440	10.14	11.0	---	---	---	---	
	2480	10.29	11.0	---	---	---	---	
BLE (2Mbps)	2402	7.36	8.0	---	---	---	---	
	2440	7.44	8.0	---	---	---	---	
	2480	7.24	8.0	---	---	---	---	

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.6. SAR Test Result

6.6.1. WiFi 2.4GHz/Bluetooth

Test Date	2025. 03. 24	Temp./Hum.	21℃/56%
Test Voltage	AC 120V, 60Hz (with AC Adapter)	Tested by	Sean Wang

WiFi 2.4GHz Function:

Tablet Mode:

Liquid Temperature : 20.0℃									Depth of Liquid: > 15cm	
Test Mode: 2.4GHz										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
802.11b										
Antenna: AUX-ANT										
P1	Top	Fixed	0.5	2437	21.00	22.00	0.255	1.259	0.321	1.60
P8	Right	Fixed	0	2437	20.98	21.50	0.207	1.127	0.233	1.60
P9[Note1]	Tablet-Bottom	Fixed	0	2437	21.00	22.00	0.281	1.259	**0.354**	1.60
Antenna: Main-ANT										
P2[Note1]	Top	Fixed	0.5	2437	20.98	21.50	0.268	1.127	**0.302**	1.60
P7	Left	Fixed	0	2437	21.00	22.00	0.228	1.259	0.287	1.60
P10	Tablet-Bottom	Fixed	0	2437	20.98	21.50	0.210	1.127	0.237	1.60

Laptop Mode:

Liquid Temperature : 20.0℃									Depth of Liquid: > 15cm	
Test Mode: 2.4GHz										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
802.11b										
Antenna: AUX-ANT										
P12	Laptop-Bottom	Fixed	0	2437	21.00	22.00	0.012	1.259	0.015	1.60
Antenna: Main-ANT										
P13	Laptop-Bottom	Fixed	0	2437	20.98	21.50	0.023	1.127	0.026	1.60

Note: 1. We only presented the worst plots for each test configuration.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

BT Function:

Tablet Mode:

Liquid Temperature : 20.0℃									Depth of Liquid:＞15cm	
Test Mode: BT(GFSK)										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
Antenna: AUX-ANT										
P5[Note 1]	Top	Fixed	0	2441	10.90	11.50	0.049	1.148	**0.056**	1.60
P6	Left	Fixed	0	2441	10.90	11.50	0.00016	1.148	0.00018	1.60
P11	Tablet-Bottom	Fixed	0	2441	10.90	11.50	0.02500	1.148	0.029	1.60

Laptop Mode:

Liquid Temperature : 20.0℃									Depth of Liquid:＞15cm	
Test Mode: BT(GFSK)										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
Antenna: AUX-ANT										
P14	laptop-bottom	Fixed	0	2441	10.90	11.50	0.00055	1.148	0.0006	1.60

Note: 1. We only presented the worst plots for each test configuration.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.6.2. WiFi 5GHz

Test Date	2025. 03. 26 ~ 04. 29	Temp./Hum.	18 ~ 20℃/54 ~ 55%
Test Voltage	AC 120V, 60Hz (with AC Adapter)	Tested by	Sean Wang

Tablet Mode:

Liquid Temperature : 19.0℃/20.0℃									Depth of Liquid:＞15cm	
Test Mode: 5GHz										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
802.11a										
Antenna: AUX-ANT										
P15	Top	Fixed	0.5	5260	19.38	20.00	0.521	1.153	0.601	1.60
P17	Top	Fixed	0.5	5580	19.21	20.00	0.582	1.199	0.698	1.60
P19[Note1]	Top	Fixed	0.5	5745	20.94	21.50	0.686	1.138	**0.781**	1.60
P51	Top	Fixed	0.5	5885	13.33	14.00	0.245	1.167	0.286	1.60
P27	Right	Fixed	0	5260	19.38	20.00	0.053	1.153	0.061	1.60
P29	Right	Fixed	0	5580	19.21	20.00	0.169	1.199	0.203	1.60
P31	Right	Fixed	0	5745	20.94	21.50	0.125	1.139	0.142	1.60
P54	Right	Fixed	0	5885	13.33	14.00	0.063	1.167	0.074	1.60
P33	Tablet-Bottom	Fixed	0	5260	19.38	20.00	0.051	1.153	0.059	1.60
P35	Tablet-Bottom	Fixed	0	5580	19.21	20.00	0.00951	1.199	0.011	1.60
P37	Tablet-Bottom	Fixed	0	5745	20.94	21.50	0.024	1.138	0.027	1.60
P55	Tablet-Bottom	Fixed	0	5885	13.33	14.00	0.036	1.167	0.042	1.60
P51	Top	Fixed	0.5	5300	19.25	20.00	0.366	1.189	0.435	1.60
P53	Top	Fixed	0.5	5825	20.65	21.30	0.609	1.161	0.707	1.60

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Tablet Mode:

Liquid Temperature : 19.0℃/20.0℃									Depth of Liquid: ＞15cm	
Test Mode: 5GHz										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
802.11a										
Antenna: Main-ANT										
P16[Note 1]	Top	Fixed	0.5	5260	18.59	19.30	0.726	1.180	**0.857**	1.60
P18	Top	Fixed	0.5	5580	18.58	19.30	0.630	1.180	0.743	1.60
P20	Top	Fixed	0.5	5745	20.23	21.00	0.711	1.194	0.849	1.60
P52	Top	Fixed	0.5	5885	13.58	14.30	0.223	1.180	0.263	1.60
P22	Left	Fixed	0	5260	18.59	19.30	0.129	1.180	0.152	1.60
P24	Left	Fixed	0	5580	18.58	19.30	0.136	1.180	0.160	1.60
P26	Left	Fixed	0	5745	20.23	21.00	0.199	1.194	0.238	1.60
P53	Left	Fixed	0	5885	13.58	14.30	0.03	1.180	0.035	1.60
P34	Tablet-Bottom	Fixed	0	5260	18.59	19.30	0.018	1.180	0.021	1.60
P36	Tablet-Bottom	Fixed	0	5580	18.58	19.30	0.026	1.180	0.031	1.60
P38	Tablet-Bottom	Fixed	0	5745	20.23	21.00	0.026	1.194	0.031	1.60

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Laptop Mode:

Liquid Temperature : 19.0℃/20.0℃									Depth of Liquid: ＞15cm	
Test Mode: 5GHz										
Plot No.	Test Position: Body	Antenna Position	Separation Distance (cm)	Frequency	Conducted Power (dBm)	Maximum Tune-up (dBm)	SAR 1g (W/kg)	Scale Factor	Reported SAR	Limit (W/kg)
802.11a										
Antenna: AUX-ANT										
P39	laptop-bottom	Fixed	0	5260	19.38	20.00	0.011	1.153	0.013	1.60
P41	laptop-bottom	Fixed	0	5580	19.21	20.00	0.00000562	1.199	0.000	1.60
P43	laptop-bottom	Fixed	0	5745	20.94	21.50	0.00236	1.138	0.003	1.60
P57	laptop-bottom	Fixed	0	5885	13.33	14.00	0.012	1.167	0.014	1.60
Antenna: Main-ANT										
P40	laptop-bottom	Fixed	0	5260	18.59	19.30	0.025	1.180	0.030	1.60
P42	laptop-bottom	Fixed	0	5580	18.58	19.30	0.021	1.180	0.025	1.60
P44	laptop-bottom	Fixed	0	5745	20.23	21.00	0.048	1.194	0.057	1.60
P58	laptop-bottom	Fixed	0	5885	13.58	14.00	0.015	1.180	0.018	1.60

Note: 1. We only presented the worst plots for each test configuration.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.6.3. Highest Simultaneous Transmission SAR

Tablet Mode:

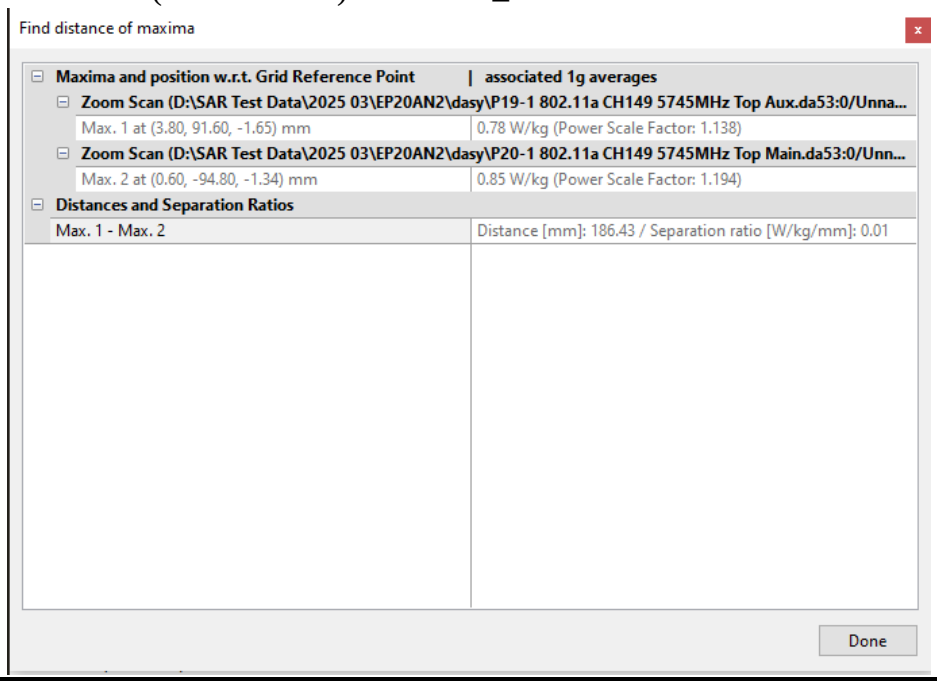
Highest Simultaneous Transmission SAR	Reported SAR_{1g} (W/kg)	Total Reported SAR_{1g} (W/kg)
WLAN 2.4G (2437MHz) AUX-ANT + WLAN 2.4G (2437MHz) Main-ANT	0.321 0.302	0.623 W/kg
WLAN 5G (5745MHz) AUX-ANT + WLAN 5G (5745MHz) Main-ANT	0.781 0.849	1.630 W/kg

Note: 1. The SAR limit (SAR1g 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093).
2. It is calculated from scale SAR.
3. It is larger than the limit 1.6(W/kg), SAR test exclusion is determined by the SAR to peak location separation ratio.

Simultaneous Transmission SAR	Frequency	Reported Body SAR_{1g} (SAR1+SAR2)^{Note2}	Ri (mm) Note2	$SPLSR^{Note2}$
WLAN 5G ANT Main+ WLAN 5G ANT AUX	5745MHz	1.630 (W/kg)$^{Note\ 2}$	186.43	0.01

Note: 1. The SAR limit (SAR1g 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093).

2. $SPLSR=(SAR1+SAR2)^{1.5}/Ri$ must ≤0.04



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Laptop Mode

Highest Simultaneous Transmission SAR	Reported SAR_{1g} (W/kg)	Total Reported SAR_{1g} (W/kg)
WLAN 2.4G (2437MHz) AUX-ANT +	0.015	0.041 W/kg
WLAN 2.4G (2437MHz) Main-ANT	0.026	
WLAN 5G (5745MHz) AUX-ANT +	0.003	0.062 W/kg
WLAN 5G (5745MHz) Main-ANT	0.059	

Note: 1. The SAR limit (SAR1g 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093).
2. It is calculated from scale SAR.
3. It is larger than the limit 1.6(W/kg), SAR test exclusion is determined by the SAR to peak location separation ratio.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

APPENDIX A

TEST GRAPH RESULT

(Model: RTL8852BE)

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

WiFi 2.4G/Bluetooth

Date: 3/24/2025

Test Laboratory: Audix_SAR Lab

P9 802.11b CH6 2437MHz bottom Aux

DUT: EP20AN2

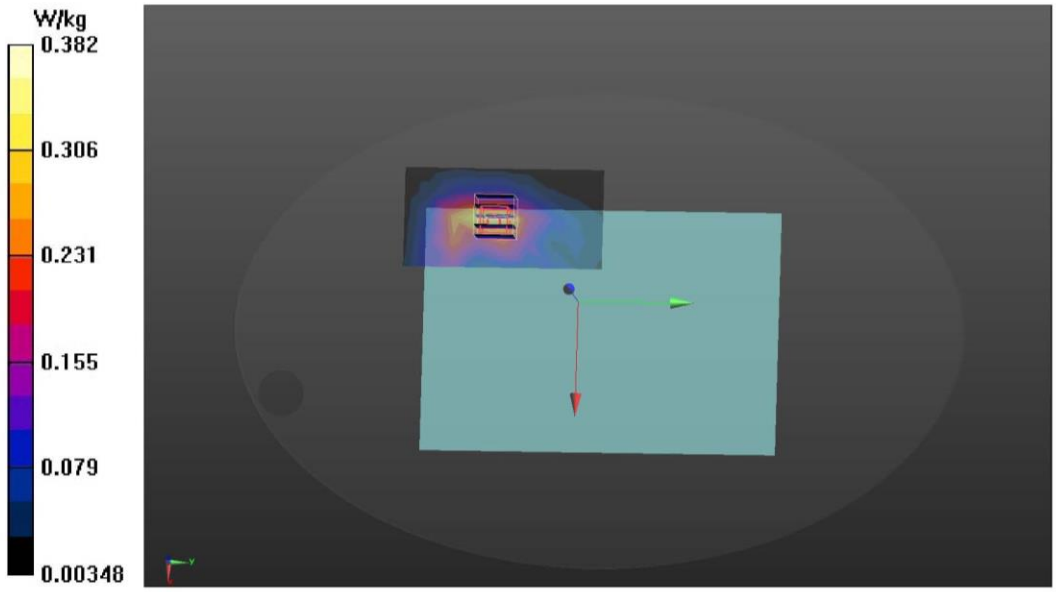
Communication System: UID 0, WIFI 2.4G 802.11B (0); Frequency: 2437 MHz;Duty Cycle:1:1
Medium parameters used: f = 2437 MHz; σ = 1.754 S/m; ε_r = 40.173; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.15, 7.5, 7.88) @ 2437 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (5x9x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.345 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.042 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.506 W/kg
SAR(1 g) = 0.281 W/kg; SAR(10 g) = 0.153 W/kg
Smallest distance from peaks to all points 3 dB below = 16.1 mm
Ratio of SAR at M2 to SAR at M1 = 52.4%
Maximum value of SAR (measured) = 0.382 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 3/24/2025

Test Laboratory: Audix_SAR Lab

P2 802.11b CH6 2437MHz Top Main

DUT: EP20AN2

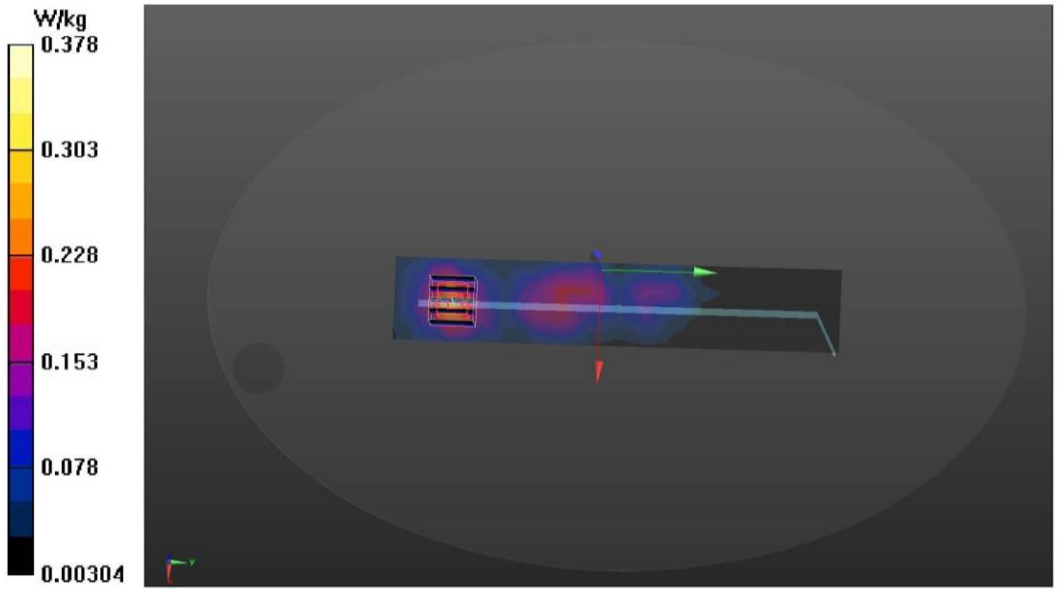
Communication System: UID 0, WIFI 2.4G 802.11B (0); Frequency: 2437 MHz;Duty Cycle:1:1
Medium parameters used: f = 2437 MHz; σ = 1.754 S/m; ε_r = 40.173; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.15, 7.5, 7.88) @ 2437 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (4x17x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.301 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.811 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.483 W/kg
SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.141 W/kg
Smallest distance from peaks to all points 3 dB below = 17.2 mm
Ratio of SAR at M2 to SAR at M1 = 54.5%
Maximum value of SAR (measured) = 0.378 W/kg



file:///C:/Users/USER/Desktop/report%20data/P2%20802.11b%20CH6%202437MHz%20Top%2...

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 3/24/2025

Test Laboratory: Audix_SAR Lab

P5 GFSK CH39 2441MHz Top

DUT: EP20AN2

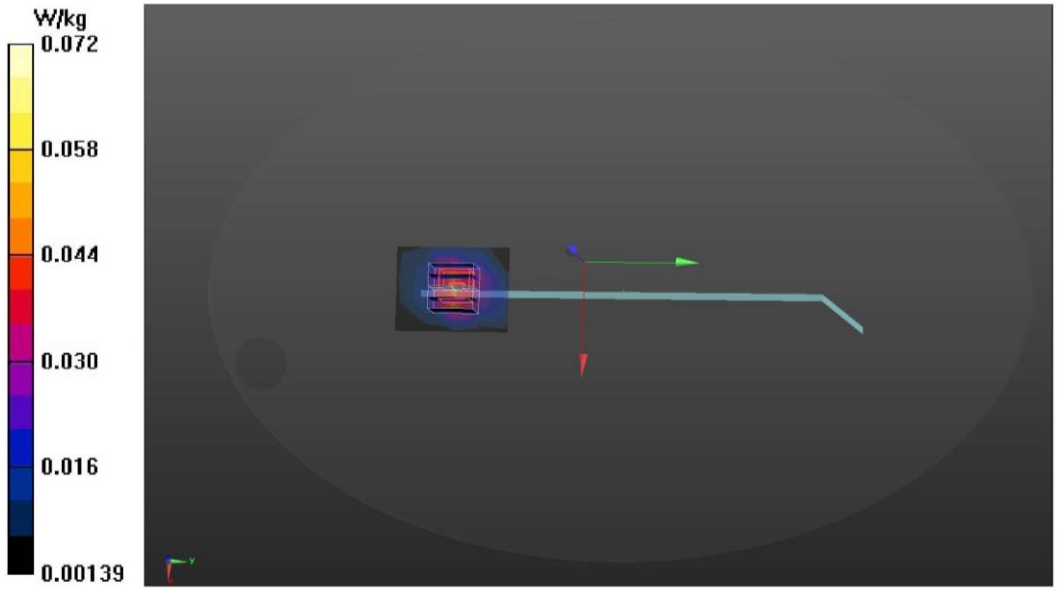
Communication System: UID 0, BT (0); Frequency: 2441 MHz;Duty Cycle:1:1.3
Medium parameters used: f = 2441 MHz; σ = 1.758 S/m; ε_r = 40.166; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(7.15, 7.5, 7.88) @ 2441 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (4x5x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.0482 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.771 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0900 W/kg
SAR(1 g) = 0.049 W/kg; SAR(10 g) = 0.025 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 = 52.7%
Maximum value of SAR (measured) = 0.0720 W/kg



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

WiFi 5G

Date: 3/27/2025

Test Laboratory: Audix_SAR Lab

P19 802.11a CH149 5745MHz Top Aux

DUT: EP20AN2

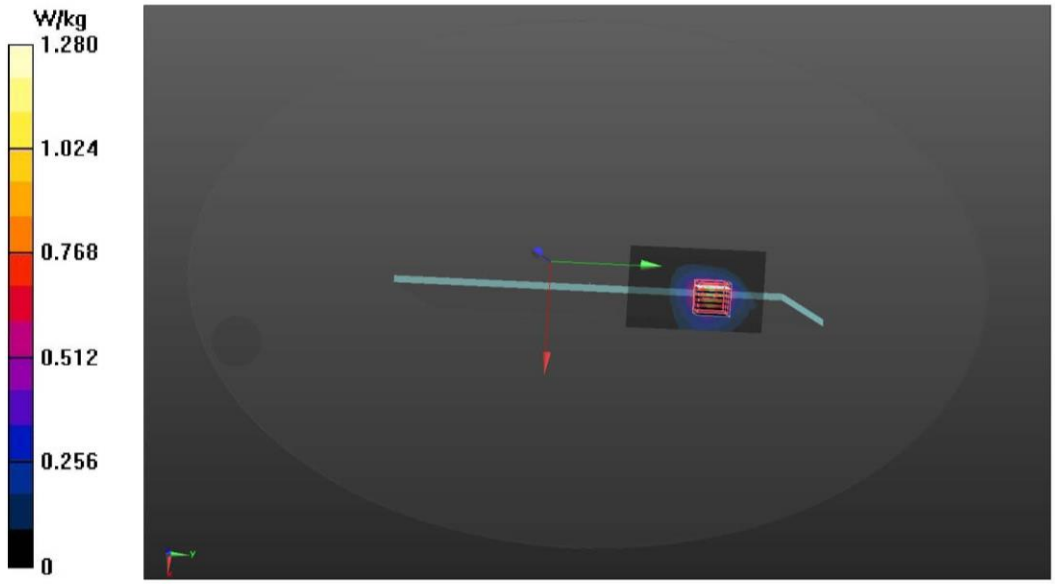
Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5745 MHz;Duty Cycle:1:1
Medium parameters used: f = 5745 MHz; σ = 5.369 S/m; ε_r = 35.904; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(4.87, 5.11, 5.36) @ 5745 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (7x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.10 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.8240 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.62 W/kg
SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.220 W/kg
Smallest distance from peaks to all points 3 dB below = 8 mm
Ratio of SAR at M2 to SAR at M1 = 58.1%
Maximum value of SAR (measured) = 1.28 W/kg



file:///C:/Users/USER/Desktop/report%20data/P19-1%20802.11a%20CH149%205745MHz%20T...

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Date: 3/26/2025

Test Laboratory: Audix_SAR Lab

P16 802.11a CH52 5260MHz Top Main

DUT: EP20AN2

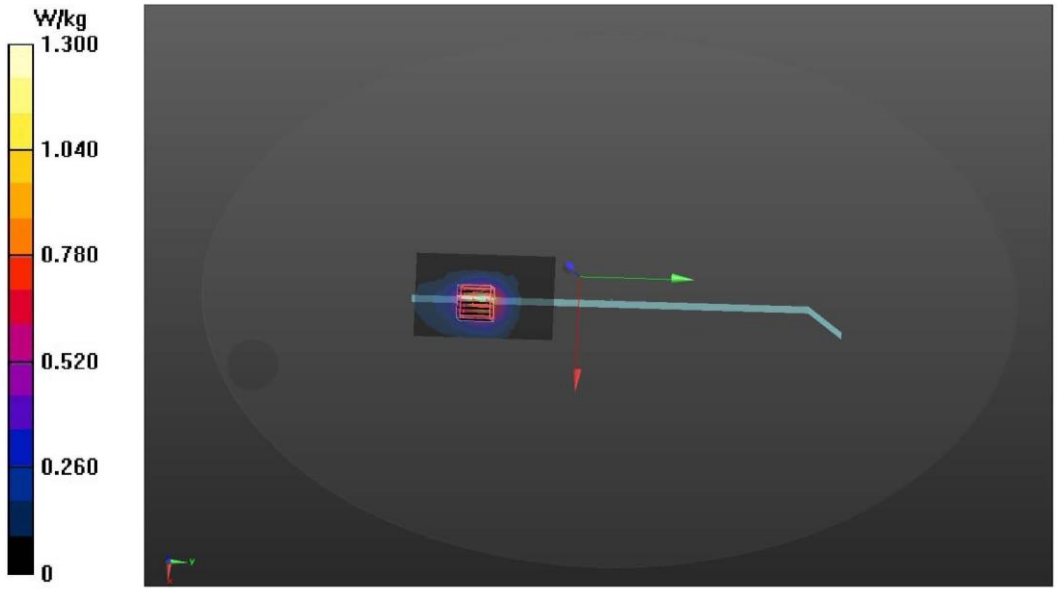
Communication System: UID 0, WIFI 5G 802.11a (0); Frequency: 5260 MHz;Duty Cycle:1:1
Medium parameters used: f = 5260 MHz; σ = 4.773 S/m; ε_r = 36.905; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3855; ConvF(5.06, 5.31, 5.58) @ 5260 MHz; Calibrated: 9/17/2024
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE3 Sn360; Calibrated: 12/16/2024
- 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 (7x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.24 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.807 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 2.12 W/kg
SAR(1 g) = 0.726 W/kg; SAR(10 g) = 0.268 W/kg
Smallest distance from peaks to all points 3 dB below = 11.3 mm
Ratio of SAR at M2 to SAR at M1 = 61.8%
Maximum value of SAR (measured) = 1.30 W/kg



file:///C:/Users/USER/Desktop/report%20data/P16%20802.11a%20CH52%205260MHz%20Top...

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

APPENDIX B

TEST PHOTOGRAPHS

(Model: RTL8852BE)