SAR TEST REPORT

for

Acer Incorporated

Notebook Computer

Model No.: N24G1; GW16-52P

Brand: Gateway; acer

FCC ID: HLZAX201D2

IC: 1754F-AX201D2

The MAX SAR(1g)	
Body SAR	1.023W/Kg

Maximum SAR Test distance: 0mm

Prepared for : Acer Incorporated
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221 Taiwan

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Testing Laboratory
1418

Report Number : ACS-SF24009
Date of Test : Nov.11~19, 2024
Date of Report : Dec.20, 2024

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SAR TEST REPORT

Applicant	:	Acer Incorporated
Manufacturer	:	Acer Incorporated
Product	:	Notebook Computer
Model No.	:	N24G1; GW16-52P
Brand	:	Gateway; acer
Test Voltage	:	DC 11.4V

Measurement Standard Used:

- FCC 47 CFR Part 2 (2.1093)
- IEEE C95.1-1999
- IEC/IEEE 62209-1528: 2020
- IEC62209-1:2016
- IEC62209-2:2010
- IEEE1528-2013
- FCC OET Bulletin 65 Supplement C (Edition 01-01)
- RSS-102, Issue 6: 2023
- FCC KDB 447498 D04 v01
- FCC KDB 865664 D01/D02
- FCC KDB 248227 D01 v02r02
- KDB 616217 D04 v01r02
- KDB 941225 D06 v02r01

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of test. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the EUT is technically compliant with the FCC and RSS-102 test requirements.

This report applies to single evaluation of one sample of above mentioned product. And shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd..

Date of Test : Nov.11~19, 2024 Date of Report: Dec.20, 2024

Prepared by : Crush Liu / Assistant

Reviewed by : Thomas Chen / Assistant Manager

信華科技（深圳）有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report

Approved & Authorized Signer : Signature: Sunny Liu / Manager

REPORT REVISION HISTORY

Edition No.	Revision	Issue Date	Report No.
Original	Initial issue of report	Dec.20, 2024	ACS-SF24009

1. GENERAL INFORMATION

1.1.Description of Equipment Under Test

Applicant	Acer Incorporated	
Applicant Address	8F., No.88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221 Taiwan	
Manufacturer	Acer Incorporated	
Manufacturer Address	8F., No.88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221 Taiwan	
Product	Notebook Computer	
Model No.	N24G1; GW16-52P	
Test Model	N24G1	
Brand	Gateway; acer	
FCC ID	HLZAX201D2	
IC	1754F-AX201D2	
Sample Type	Prototype production	
Date of Receipt	Nov.01, 2024	
Date of Test	Nov.11~19, 2024	
Operating Mode	WLAN	
Frequency Range	802.11 b/g/n(HT20/HT40)	2412MHz~2462MHz
	802.11 a	5150 MHz~5250 MHz
	802.11n(HT20/HT40)	5250 MHz~5350MHz
	802.11ac(VHT20/ VHT40/ VHT80)	5470 MHz~5725 MHz
		5725 MHz~5850 MHz

Antenna Information	
Type of Antenna	PIFA Antenna
Antenna Peak Gain	WIFI 2.4GHz Peak Gain: Ant 1:0.2dBi; Ant 2: 1.4dBi WIFI 5 GHz Peak Gain: Ant 1:2.1dBi; Ant 2: 3.3dBi

2. GENERAL DESCRIPTION

2.1.Product Description For EUT

Please refer to section 1.1

2.2.Applied Standards

The Specific Absorption Rate (SAR) testing specification, method and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- IEEE C95.1-1999
- IEC/IEEE 62209-1528: 2020
- IEC62209-1:2016
- IEC62209-2:2010
- IEEE1528-2013
- FCC OET Bulletin 65 Supplement C (Edition 01-01)
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- KDB 941225 D06 v02r01

2.3.Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

2.4.Test Conditions

2.4.1. Ambient Condition

Ambient Temperature	20 to 24 ℃
Humidity	< 60 %

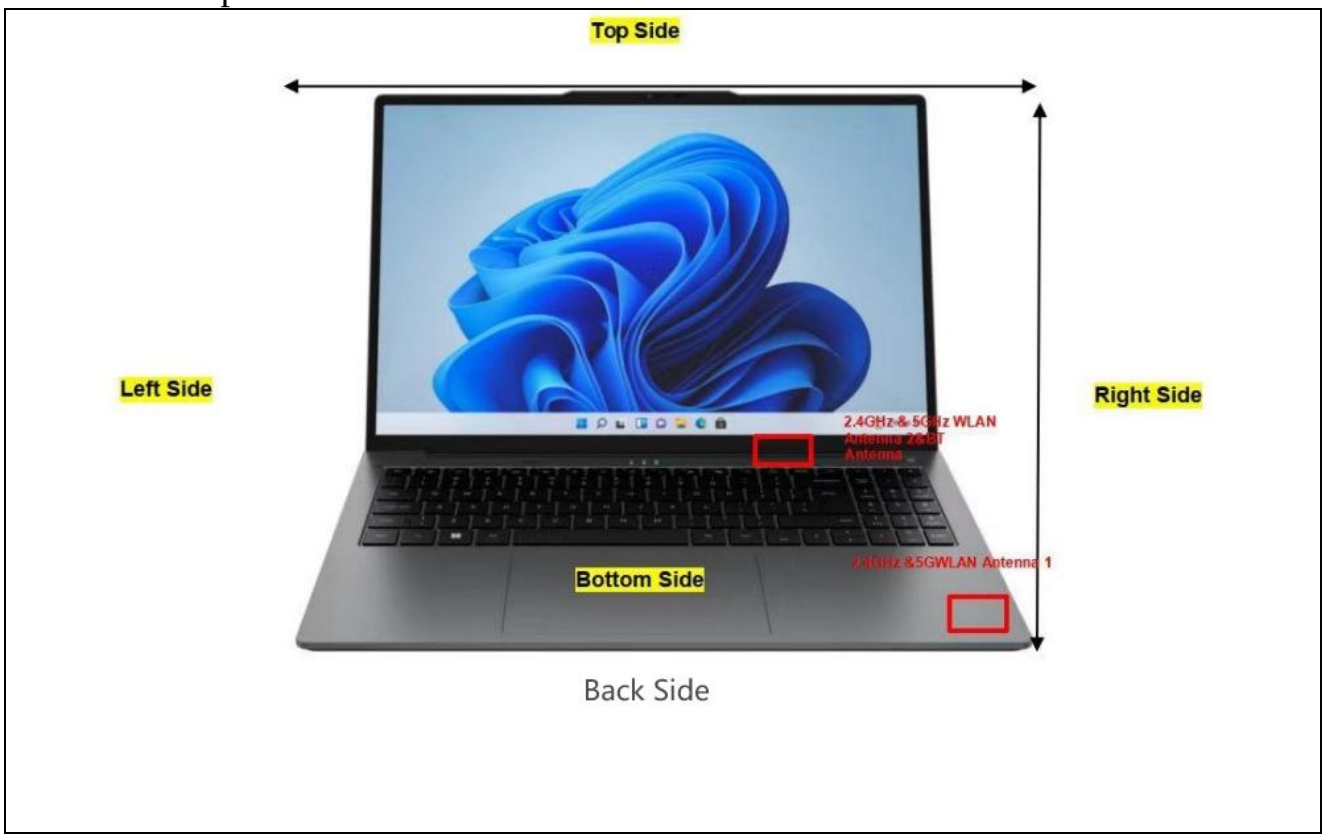
2.4.2. Test Configuration

The distance between the EUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during all tests.

2.4.3 Simultaneous Transmission Description

No.	Type
1.	WLAN2.4G ANT 2+BT ANT 1
2.	WLAN2.4G ANT 1+ WLAN2.4G ANT 2
3.	WLAN5G ANT 2+BT ANT 1
4.	WLAN5G ANT 1+ WLAN5G ANT 2
5.	WLAN5G ANT 1+ WLAN5G ANT 2+ BT ANT 1

2.5.Exposure Positions Consideration



Test Sides for SAR tests						
Band	Body					
	Back	Front	Top	Bottom	Left	Right
ANT 1	✓	X	X	✓	X	X
ANT 2	✓	X	X	✓	X	X

Note:

1. **The side which has a distance larger than 2.5cm from antenna can be excluded from SAR measurement.**

2.6.Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

According to the KDB447498 appendix A, the SAR test exclusion threshold listed as below

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

According to RSS-102 Issue 6 Table 11, the SAR test exclusion threshold for 2450MHz at 0mm test separation distances is 3mW, 5.8GHz is 1mW.

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

2.7.Block Diagram of connection between EUT and simulators

(EUT: Notebook Computer)

2.8.Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date	Calibration Body
1.	DASY5 SAR Test System	Speag	TX60 L speag	F09/5B1H1/01	NCR	NCR	N/A
2.	ENA SERIES NETWORK ANALYZER	Agilent	E5071C	MY46316760	2024.09.15	2025.09.14	CCIC
3.	Power Meter	Anritsu	ML2487A	6K00003262	2024.06.19	2025.06.18	CCIC
4.	Power Sensor	Anritsu	MA2491A	032516	2024.06.19	2025.06.18	CCIC
5.	Signal Generator	Rohde&Schwarz	SMB100A	181375	2024.03.16	2025.03.15	CCIC
6.	Amplifier	Milmega	ZHL-42W	C620601316	NCR	NCR	N/A
7.	Dipole Validation Kits	Speag	D2450V2	862	2023.05.18	2026.05.17	CCTL
8.	Dipole Validation Kits	Speag	D5GHzV2	1102	2023.05.19	2026.05.18	CCTL
9.	Attenuator	N/A	1527	001	2024.09.15	2025.09.14	CCIC
10.	Date Acquisition Electronics	Speag	DAE4	899	2024.06.06	2025.06.05	CCTL
11.	E-Field Probe	Speag	EX3DV4	3767	2024.08.01	2025.07.31	CCTL
12.	Test Software	Schmid&Partner Englinnering AG	DASY5	52.8.7.1137	NCR	NCR	NCR
13.	Radio Communication Analyzer	Anritsu	MT8821C	6201547828	2024.03.16	2025.03.15	CCIC
14.	Radio Communication Analyzer	Rohde & Schwarz	CMW500	103249	2024.09.15	2025.09.14	CCIC

Note 1: Calibration Method

a): Calibration conducted by the National Institute of Information and Communications Technology～ NICT～ or a designated calibration agency under Article 102-18 paragraph (1)～ TELEC Engeneering Center, Intertek Japan K.K., Keysight Technologies, Inc～.

b): Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)～Japan Calibration Service Syste～

c): Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)～ TELEC Engeneering Center, Intertek Japan K.K., Keysight Technologies, Inc～.

d): Calibration conducted by using other equipment that listed above from a) to c)

Note 2: CCIC (Shenzhen) Metrology & Testing Service Co., Ltd

Addr : ShengHui Hongxing Chuangzhi Square, Tongren Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen

2.9.Laboratory Environment

Temperature	Min:20℃,Max.25℃
Relative humidity	Min. = 45%, Max. = 70%
Note: Ambient noise is checked and found very low and in compliance with requirement of standards.	

2.10.Measurement Uncertainty

Test Item	Uncertainty
Uncertainty for SAR test	1g: ±21.2
	10g: ±20.7
Uncertainty for test site temperature and humidity	±0.6℃

Source	Type	Uncertainly Value (%)	Probability Distribution	K	C1(1g)	C1(10g)	Standard uncertainty uI(%)1g	Standard uncertainty uI(%)10g	Degree of freedom Veff or Vi
Measurement system repetivity	A	0.5	N	1		1	0.5	0.5	9
Probe calibration	B	5.9	N	1	1	1	5.9	5.9	∞
Isotropy	B	4.7	R	√3	1	1	2.7	2.7	∞
Linearity	B	4.7	R	√3	1	1	2.7	2.7	∞
Probe modulation response	B	0	R	√3	1	1	0	0	∞
Detection limits	B	1.0	R	√3	1	1	0.6	0.6	∞
Boundary effect	B	1.9	R	√3	1	1	1.1	1.1	∞
Readout electronics	B	1.0	N	1	1	1	1.0	1.0	∞
Response time	B	0	R	√3	1	1	0	0	∞
Integration time	B	4.32	R	√3	1	1	2.5	2.5	∞
RF ambient conditions – noise	B	0	R	√3	1	1	0	0	∞
RF ambient conditions – reflections	B	3	R	√3	1	1	1.73	1.73	∞
Probe positioner mech. restrictions	B	0.4	R	√3	1	1	0.2	0.2	∞
Probe positioning with respect to phantom shell	B	2.9	R	√3	1	1	1.7	1.7	∞
Post-processing	B	0	R	√3	1	1	0	0	∞
Test sample related									
Device holder uncertainty	A	2.94	N	1	1	1	2.94	2.94	M-1
Test sample positioning	A	4.1	N	1	1	1	4.1	4.1	M-1
Power scaling	B	5.0	R	√3	1	1	2.9	2.9	∞
Drift of output power (measured SAR drift)	B	5.0	R	√3	1	1	2.9	2.9	∞
Phantom and set-up									
Phantom uncertainty (shape and thickness tolerances)	B	4.0	R	√3	1	1	2.3	2.1	∞
Algorithm for correcting SAR for deviations in permittivity and conductivity	B	1.9	N	1	1	0,84	1,9	1,6	∞
Liquid conductivity (meas.)	A	0.55	N	1	0.78	0.71	0.24	0.21	M-1
Liquid permittivity (meas.)	A	0.19	N	1	0.23	0.26	0.09	0.06	M
Liquid permittivity – temperature uncertainty	A	5.0	R	√3	0,78	0,71	1.4	1.1	∞
Liquid conductivity – temperature uncertainty	A	5.0	R	√3	0.23	0,26	1.2	0.8	∞
Combined standard uncertainty	$u_c' = \sqrt{\sum_{i=1}^{23} c_i^2 u_i^2}$						10.57	10.32	
Expanded uncertainty (95 % conf. interval)	$u_e = 2u_c$		N		K=2		21.14	20.64	

3. MEASURE PROCEDURES

3.1.General description of test procedures

For the 802.11b/g SAR body tests, a communication link is set up with the test mode software for WIFI mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. Testing at higher data rates is not required when the maximum average output power is less than 0.25dB higher than those measured at the lowest data rate.SAR is not required for 802.11g channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels. The same test procedure for 802.11a/n/ac mode.

4. SAR MEASUREMENTS SYSTEM

4.1.SAR Measurement Set-up

DASY5 system for performing compliance tests consists of the following items:

(1) A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

(2) A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage It issue simulating liquid. The probe is equipped with an optical surface detector system.

(3) A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

(4) A unit to operate the optical surface detector which is connected to the EOC.

(5) The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.

(6) The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003.

(7) DASY5 software and SEMCAD data evaluation software.

(8) Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

(9) The generic twin phantom enabling the testing of left-hand and right-hand usage.

(10) The device holder for handheld mobile phones.

(11) Tissue simulating liquid mixed according to the given recipes.

(12) System validation dipoles allowing to validate the proper functioning of the system.

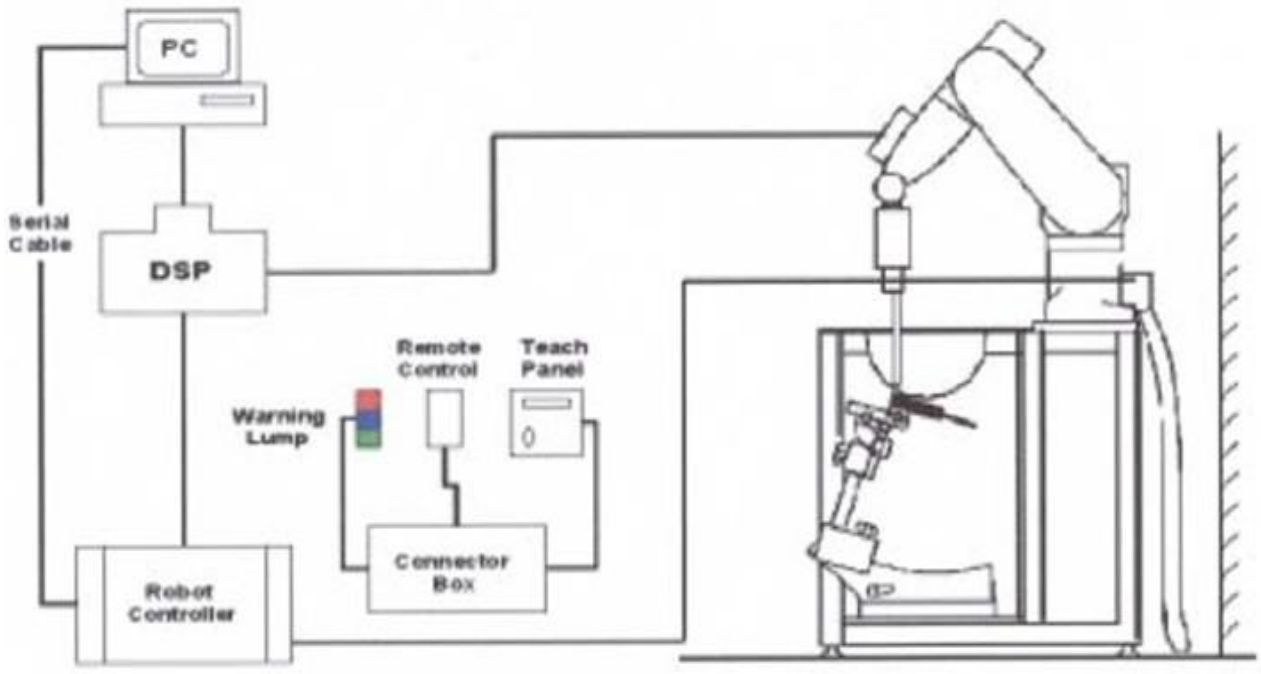


Figure 4.1 SAR Lab Test Measurement Set-up

4.2.ELI Phantom

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.

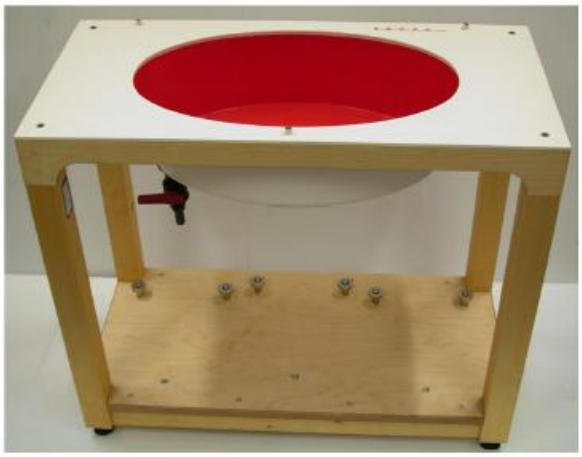


Figure 4.2 Top View of Twin Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2.0 ± 0.2 mm (bottom plate)
Dimensions	Major axis: 600 mm Minor axis: 400 mm
Filling Volume	approx. 30 liters
Wooden Support	SPEAG standard phantom table

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

*Water-sugar based liquid
*Glycol based liquids

4.3.Device Holder for SAM Twin Phantom

The SAR in the Phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source in 5 mm distance, a positioning uncertainty of ±0.5mm would produce a SAR uncertainty of ± 20%. An accurate device position is therefore crucial for accurate and repeatable measurement. The position in which the devices must be measured, are defined by the standards.

The DASY5 device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (EPR).

Thus the device needs no repositioning when changing the angles.

The DASY5 device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε_r=3 and loss tangent□ □δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Figure 4.3 Device Holder

4.4.DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

Figure 4.4 EX3DV4 E-field Probe

5.4.1. EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 µW/g)
Dimensions	Overall length: PRS-T2 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

4.5.E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ±10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (Norm X, Norm Y, Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),
C = Heat capacity of tissue (brain or muscle),
ΔT = Temperature increase due to RF exposure.
Or

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

Where:
σ = Simulated tissue conductivity,
ρ = Tissue density (kg/m3).

4.6.Scanning procedure

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

The ”reference“ and ”drift“ measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the EUT’s output power and should vary max. ± 5 %.

The ”surface check“ measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles.

The difference between the optical surface detection and the actual surface depends on the Probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged.

After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

Zoom Scan

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

Spatial Peak Detection

The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses. The DASY5 system allows evaluations that combine measured data and robot positions, such as:

· maximum search

· extrapolation

· boundary correction

· peak search for averaged SAR

During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

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. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Sheppard's method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

5. DATA STORAGE AND EVALUATION

5.1.Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

5.2.Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters: - Sensitivity Normi, ai0, ai1, ai2
- Conversion factor ConvFi
- Diode compression point Dcpi

Device parameters: - Frequency
- Crest factor cf

Media parameters: - Conductivity
- Density

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the millimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used. The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.
If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$Vi = Ui + Ui2 \cdot c f / d c pi$$

With Vi = compensated signal of channel i (i = x, y, z)

Ui = input signal of channel i (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcpi = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: Ei = (Vi / Normi · ConvF)1/2

H-field probes: Hi = (Vi)1/2 · (ai0 + ai1 f + ai2f2) / f

With Vi = compensated signal of channel i (i = x, y, z)

Normi = sensor sensitivity of channel i (i = x, y, z)

ConvF = sensitivity enhancement in solution

aij = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

Ei = electric field strength of channel i in V/m

Hi = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

Etot = (Ex2+ EY2+ Ez2)1/2

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with

SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

= conductivity in [mho/m] or [Siemens/m]

= equivalent tissue density in g/cm3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

Ppwe = Etot2 / 3770 or Ppwe = Htot2 · 37.7

with Ppwe = equivalent power density of a plane wave in mW/cm2

Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m

6. SYSTEM CHECK

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulates, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the ANNEX A.

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system (±10 %).

System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.

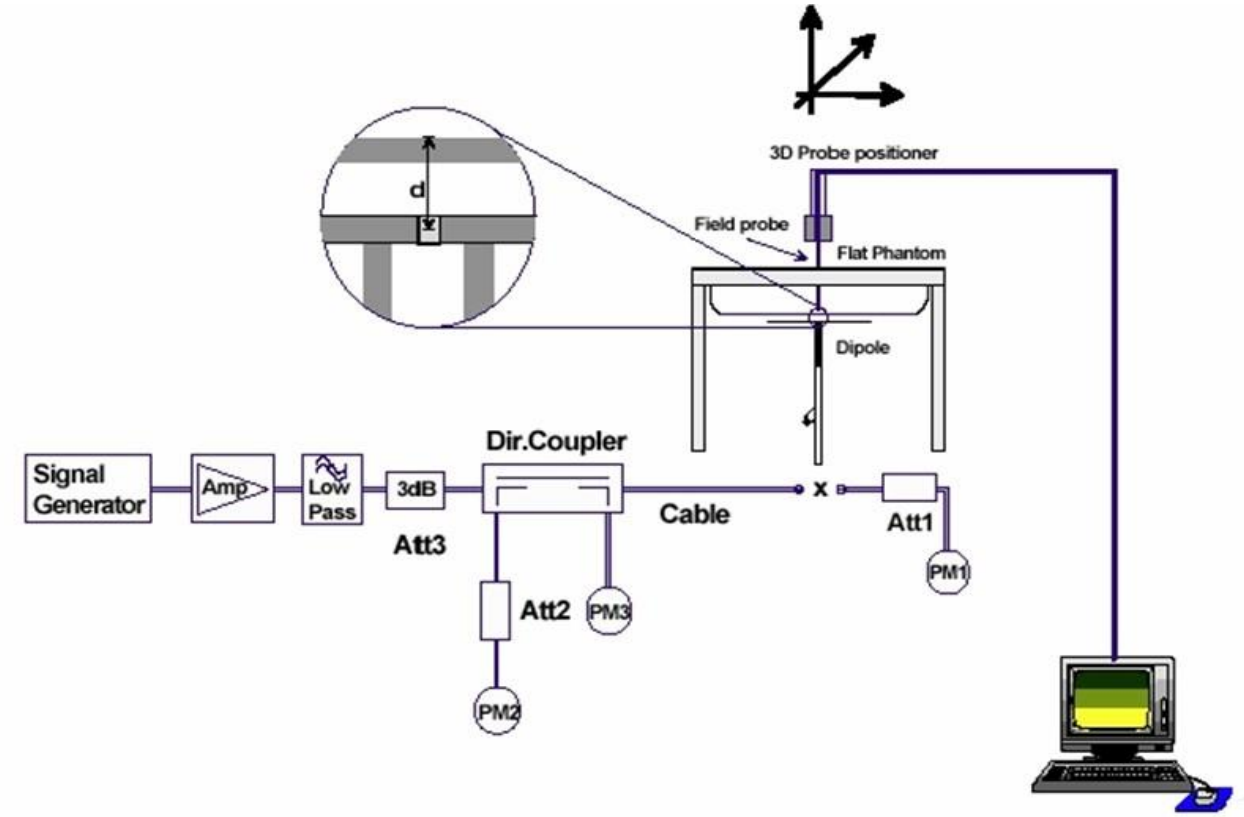


Figure 6.1: System Check Set-up

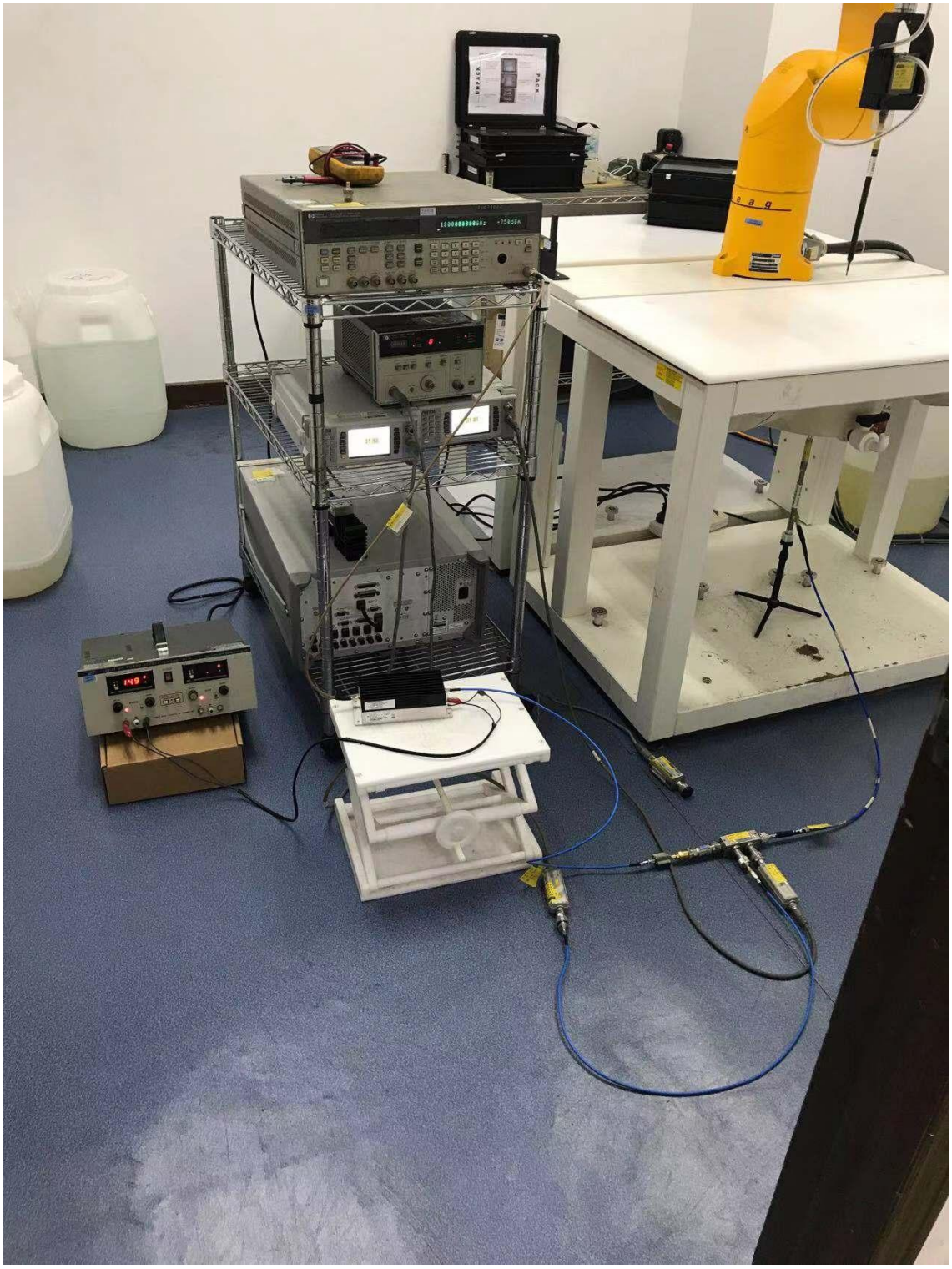


Figure 6.3: photos of system

7. TEST RESULTS

7.1.Output power

Bluetooth

Band	Mode	Data Rate	Channel	Frequency (MHz)	Antenna	Avg Pwr (dBm)	Tune-up Pwr (dBm)
2.4GHz	Bluetooth v5.0	Basic rate GFSK	0	2402	Chain A	10.46	10.50
			39	2441		10.46	10.50
			78	2480		9.85	10.50
	Bluetooth v5.0	Basic rate π/4 DQPSK	0	2402		NR[1]	10.00
			39	2441			10.00
			78	2480			10.00
	Bluetooth v5.0	Basic rate 8-DPSK	0	2402			10.00
			39	2441			10.00
			78	2480			10.00
	Bluetooth v5.0	Low energy GFSK	0	2412			9.00
			20	2437			9.00
			39	2480			9.00

Initial test configuration

1. NR: Not Required

WiFi 2.4GHz

Table 7-12 HrP2 1216 ETSI max Tx power

HrP 1216 2.4GHz – 20MHz ETSI						
		20MHz CCK		20MHz OFDM		
Central Freq.	Control / Central Channel	CCK SISO A	CCK SISO B	OFDM SISO A	OFDM SISO B	OFDM MIMO
2412	1	**15.5**	**15.5**	**16**	**16**	**13**
2417	2	15.5	15.5	16	16	13
2422	3	15.5	15.5	16	16	13
2427	4	15.5	15.5	16	16	13
2432	5	15.5	15.5	16	16	13
2437	6	15.5	15.5	16	16	13
2442	7	**15.5**	**15.5**	**16**	**16**	**13**
2447	8	15.5	15.5	16	16	13
2452	9	15.5	15.5	16	16	13
2457	10	15.5	15.5	16	16	13
2462	11	15.5	15.5	16	16	13
2467	12	15.5	15.5	16	16	13
2472	13	**15.5**	**15.5**	**16**	**16**	**13**

Note: 40MHz CCK is not supported by this product.

HrP 1216 2.4GHz – 40MHz ETSI						
		40MHz CCK		40MHz OFDM		
Central Freq.	Control / Central Channel	CCK SISO A	CCK SISO B	OFDM SISO A	OFDM SISO B	OFDM MIMO
2422	3	15.5	15.5	**16**	**16**	**13**
2427	4	15.5	15.5	16	16	13
2432	5	15.5	15.5	16	16	13
2437	6	15.5	15.5	16	16	13
2442	7	15.5	15.5	**16**	**16**	**13**
2447	8	15.5	15.5	16	16	13
2452	9	15.5	15.5	16	16	13
2457	10	15.5	15.5	16	16	13
2462	11	15.5	15.5	**16**	**16**	**13**

WiFi 5GHz

HrP 1216 5GHz – 20MHz ETSI				
		20MHz OFDM		
Central Freq.	Control / Central Channel	OFDM SISO A	OFDM SISO B	MIMO
5180	36	**16**	**16**	**13**
5200	40	16	16	13
5220	44	16	16	13
5240	48	16	16	13
5260	52	16	16	13
5280	56	16	16	13
5300	60	16	16	13
5320	64	**16**	**16**	**13**
5340	68	Not Supported		
5360	72			
5380	76			
5400	80			
5420	84			
5440	88			
5460	92			
5480	96			
5500	100	**16**	**16**	**13**
5520	104	16	16	13
5540	108	16	16	13
5560	112	16	16	13

HrP 1216 5GHz – 20MHz ETSI				
		20MHz OFDM		
Central Freq.	Control / Central Channel	OFDM SISO A	OFDM SISO B	MIMO
5580	116	16	16	13
5600	120	16	16	13
5620	124	16	16	13
5640	128	16	16	13
5660	132	16	16	13
5680	136	16	16	13
5700	140	**16**	**16**	**13**
5720	144	16	16	13
5745	149	16	16	13
5765	153	16	16	13
5785	157	16	16	13
5805	161	16	16	13
5825	165	16	16	13
5845	169	Not Supported		
5865	173			
5885	177			
5905	181			

HrP 1216 5GHz – 40MHz ETSI				
		40MHz OFDM		
Central Freq.	Control / Central Channel	OFDM SISO A	OFDM SISO B	MIMO
5190	38	**17**	**17**	**14**
5230	46	17	17	14
5270	54	17	17	14
5310	62	**17**	**17**	**14**
5350	70	Not Supported		
5390	78			
5430	86			
5470	94			
5510	102	**17**	**17**	**14**
5550	110	17	17	14
5590	118	17	17	14
5630	126	17	17	14

HrP 1216 5GHz – 40MHz ETSI				
		40MHz OFDM		
Central Freq.	Control / Central Channel	OFDM SISO A	OFDM SISO B	MIMO
5670	134	**17**	**17**	**14**
5710	142	17	17	14
5755	151	17	17	14
5795	159	17	17	14
5835	167	Not Supported		
5875	175			

HrP 1216 5GHz – 80MHz ETSI				
		80MHz OFDM		
Central Freq.	Control / Central Channel	OFDM SISO A	OFDM SISO B	OFDM MIMO
5210	42	**17**	**17**	**14**
5290	58	**17**	**17**	**14**
5370	74	Not Supported		
5450	90			
5530	106	**17**	**17**	**14**
5610	122	**17**	**17**	**14**
5690	138	17	17	14
5775	155	17	17	14
5855	171	Not Supported		

HrP 1216 5GHz – 160MHz ETSI				
		160MHz OFDM		
Central Freq.	Control / Central Channel	OFDM SISO A	OFDM SISO B	OFDM MIMO
5250	50	**17**	**17**	**14**
5410	82	Not Supported		
5570	114	**17**	**17**	**14**
5815	163	Not Supported		

7.2.System Check & Tissue simulating liquid

Frequency	Description	SAR		Dielectric Parameters (±10% for window)		Temp
		1g	10g	εr	σ(s/m)	℃
2450MHz	Recommended value	13.5 10.962-16.038	6.29 5.11377-7.46623	39.2 35.28-43.12	1.80 1.62-1.98	/
	Measurement value 2024-11-11	12.4	5.51	39.440	1.818	22.05
5250MHz	Recommended value	8.20 6.1992-10.2008	2.32 1.75856-2.88144	35.5 31.95-39.05	5.07 4.563-5.577	/
	Measurement value 2024-11-13	8.34	2.53	35.49	4.72	22.03
5600MHz	Recommended value	8.20 6.1992-10.2008	2.32 1.75856-2.88144	35.5 31.95-39.05	5.07 4.563-5.577	/
	Measurement value 2024-11-15	7.43	2.17	35.134	4.851	22.03
5750MHz	Recommended value	8.20 6.1992-10.2008	2.32 1.75856-2.88144	35.5 31.95-39.05	5.07 4.563-5.577	/
	Measurement value 2024-11-19	7.21	2.36	35.211	5.29	22.03

Test Laboratory: Audix SAR Lab Date: 11/11/2024

CW 2450

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:862

Communication System: UID 0, CW (0); Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 2450 MHz; σ = 1.818 S/m; ε_r = 39.440; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI4.0; Type: QDOVA001BA; Serial: 1112
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CW 2450MHz/Area Scan (61x71x1): Interpolated grid: dx=2.000 mm, dy=2.000 mm

Maximum value of SAR (interpolated) = 16.6 W/kg

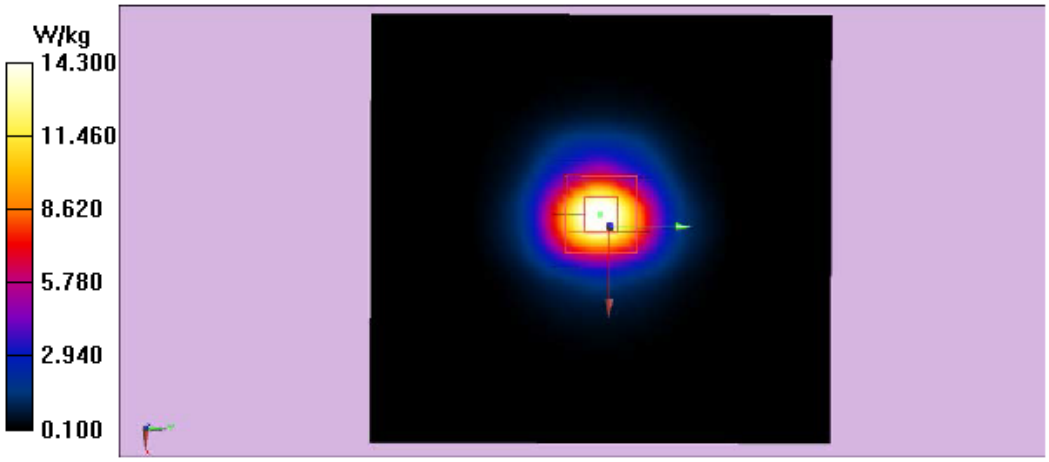
Configuration/CW 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 79.77 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 25.7 W/kg

SAR(1 g) = 12.4 W/kg; SAR(10 g) = 5.51 W/kg

Maximum value of SAR (measured) = 14.3 W/kg



Test Laboratory: Audix SAR Lab Date: 13/11/2024

CW 5250

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1102

Communication System: UID 0, CW (0); Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5250 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5250 MHz; σ = 4.72 S/m; ε_r = 35.49; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.5, 5.5, 5.5); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1112
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CW 5250MHz/Area Scan (61x71x1): Interpolated grid: dx=2.000 mm, dy=2.000 mm

Maximum value of SAR (interpolated) = 9.40 W/kg

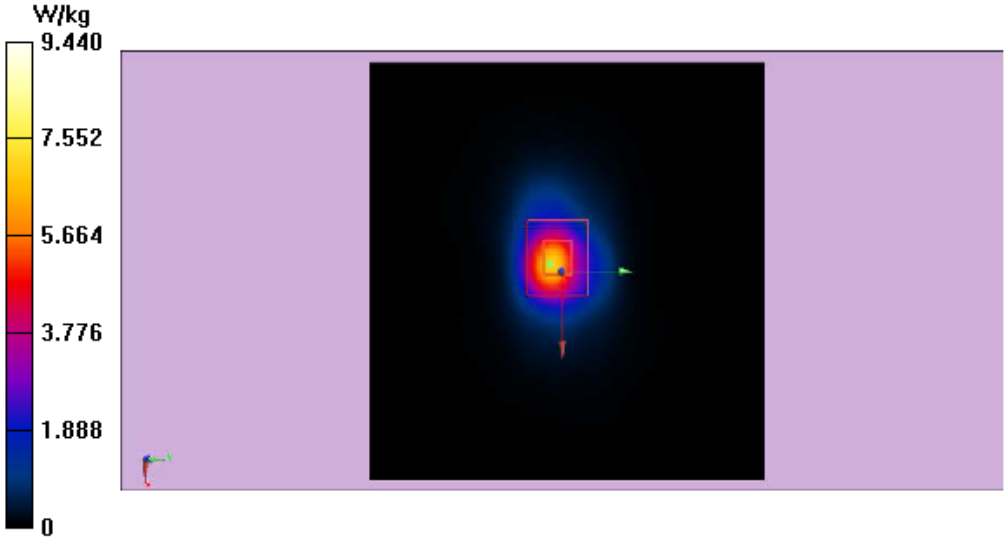
Configuration/CW 5250MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 42.21 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 27.9 W/kg

SAR(1 g) = 8.34 W/kg; SAR(10 g) = 2.53 W/kg

Maximum value of SAR (measured) = 9.44 W/kg



Test Laboratory: Audix SAR Lab Date: 15/11/2024

CW 5600

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1102

Communication System: UID 0, CW (0); Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5600 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5600 MHz; σ = 4.851 S/m; ε_r = 35.134; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.85, 4.85, 4.85); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1112
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CW 5600MHz/Area Scan (61x71x1): Interpolated grid: dx=2.000 mm, dy=2.000 mm

Maximum value of SAR (interpolated) = 8.11 W/kg

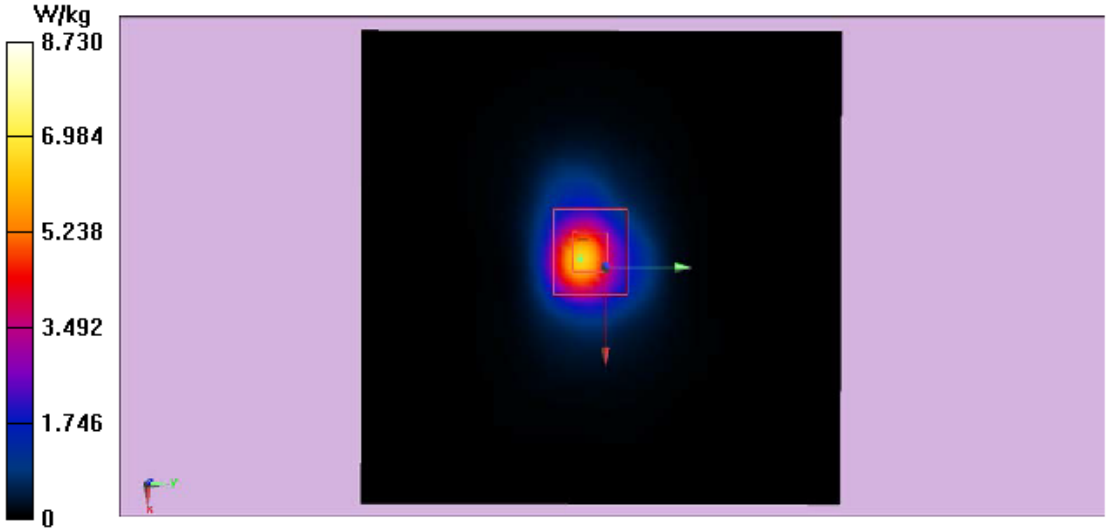
Configuration/CW 5600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 37.57 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 27.7 W/kg

SAR(1 g) = 7.43 W/kg; SAR(10 g) = 2.17 W/kg

Maximum value of SAR (measured) = 8.73 W/kg



Test Laboratory: Audix SAR Lab Date: 19/11/2024

CW 5750

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1102

Communication System: UID 0, CW (0); Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5750 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5750 MHz; σ = 5.29 S/m; ε_r = 35.211; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.91, 4.91, 4.91); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI4.0; Type: QDOVA001BA; Serial: 1112
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CW 5750MHz/Area Scan (61x71x1): Interpolated grid: dx=2.000 mm, dy=2.000 mm

Maximum value of SAR (interpolated) = 8.55 W/kg

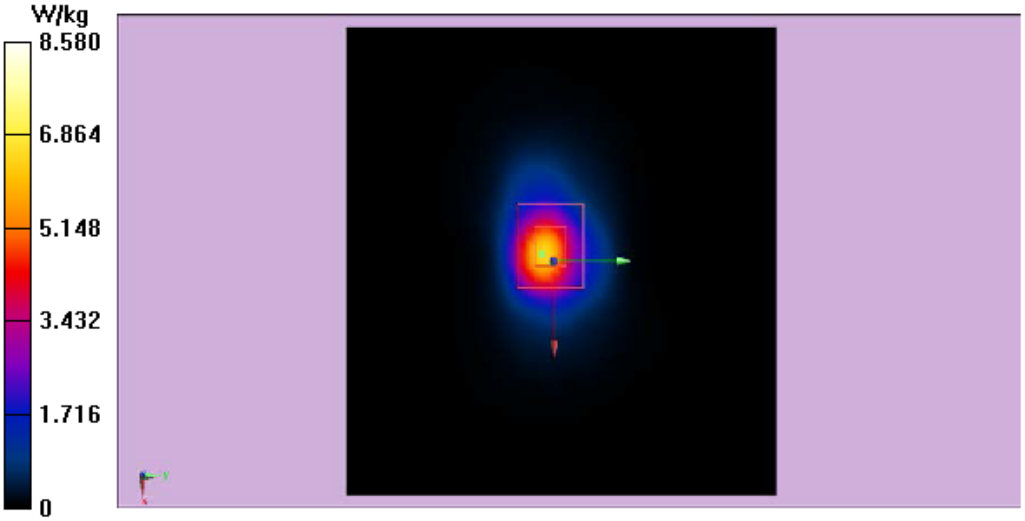
Configuration/CW 5750MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.99 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 23.9 W/kg

SAR(1 g) = 7.21 W/kg; SAR(10 g) = 2.36 W/kg

Maximum value of SAR (measured) = 8.58 W/kg



7.3.Dielectric Performance for Body Tissue simulating liquid

Frequency		Description	Dielectric Parameters (±10% window)		Temp
			εr	σ(s/m)	℃
WiFi 2.4GHz (Ant 1)	2412MHz	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.849	1.841	22.05
	2442MHz	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.731	1.879	22.05
	2472MHz	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.627	1.908	22.05
WiFi 5GHz Band 1 (Ant 1)	5210MHz	Recommended value	35.90 32.31- 39.49	4.71 4.239 - 5.181	/
		Measurement value 2024-11-13	37.132	4.325	22.03
WiFi 5GHz Band 2 (Ant 1)	5250MHz	Recommended value	35.9 32.31-39.49	4.71 4.239-5.181	/
		Measurement value 2024-11-13	37.049	4.489	22.03
WiFi 5GHz Band 3 (Ant 1)	5570MHz	Recommended value	35.5 31.95-39.05	5.07 4.563-5.577	/
		Measurement value 2024-11-15	36.234	4.836	22.03
WiFi 5GHz Band 4 (Ant 1)	5755MHz	Recommended value	35.90 32.31- 39.49	4.71 4.239 - 5.181	/
		Measurement value 2024-11-19	34.861	5.125	21.04

Frequency		Description	Dielectric Parameters (±10% window)		Temp
			εr	σ(s/m)	℃
WiFi 2.4GHz (Ant 2)	2412MHz	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.849	1.841	22.05
	2442MHz (Back)	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.731	1.879	22.05
	2442MHz (Bottom)	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.731	1.879	22.05
	2472MHz	Recommended value	39.20 35.28-43.12	1.80 1.62-1.98	/
		Measurement value 2024-11-11	38.627	1.908	22.05
WiFi 5GHz Band 1 (Ant 2)	5210MHz (Back)	Recommended value	35.90 32.31- 39.49	4.71 4.239 - 5.181	/
		Measurement value 2024-11-13	37.132	4.253	22.03
	5210MHz (Bottom)	Recommended value	35.90 32.31- 39.49	4.71 4.239 - 5.181	/
		Measurement value 2024-11-13	37.132	4.253	22.03
WiFi 5GHz Band 2 (Ant 2)	5250MHz (Back)	Recommended value	35.9 32.31-39.49	4.71 4.239-5.181	/
		Measurement value 2024-11-13	37.049	4.489	22.03
	5250MHz (Bottom)	Recommended value	35.9 32.31-39.49	4.71 4.239-5.181	/
		Measurement value 2024-11-13	37.049	4.489	22.03
WiFi 5GHz Band 3 (Ant 2)	5570MHz (Back)	Recommended value	35.5 31.95-39.05	5.07 4.563-5.577	/
		Measurement value 2024-11-15	36.234	4.836	22.03
	5570MHz (Bottom)	Recommended value	35.5 31.95-39.05	5.07 4.563-5.577	/
		Measurement value 2024-11-15	36.234	4.836	22.03
WiFi 5GHz Band 4 (Ant 2)	5775MHz (Back)	Recommended value	35.9 32.31-39.49	4.71 4.239-5.181	/
		Measurement value 2024-11-19	34.861	5.125	21.04
	5775MHz (Bottom)	Recommended value	35.90 32.31- 39.49	4.71 4.239 - 5.181	/
		Measurement value 2024-11-19	34.861	5.125	21.04

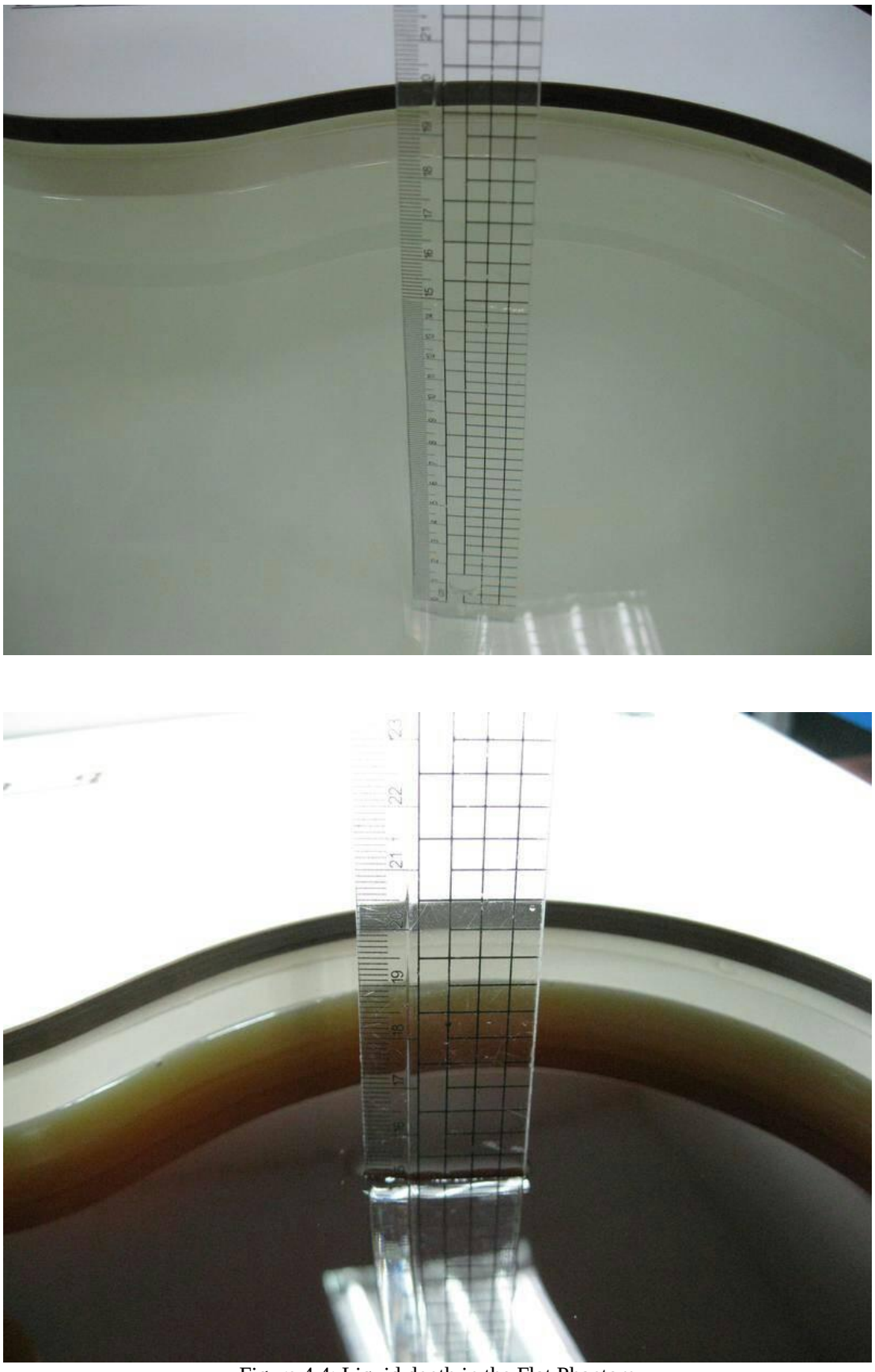


Figure 4.4: Liquid depth in the Flat Phantom

7.4.Test Results

Test Mode: WIFI 2.4GHz

Remark	Test Position	distance	Band	Mode	Test CH	SAR(W/kg) 1g	SAR(W/kg) 10g	Power Drift (dB)	Duty cycle	Conducted	Tune up	SAR 1g
Ant1	Back	0mm	2.4G	11b	1	0.681	0.349	-0.18	1	15.5	16	0.764
Ant1	Back	0mm	2.4G	11b	7	0.685	0.349	-0.14	1	15.5	16	0.769
Ant1	Back	0mm	2.4G	11b	13	0.7	0.351	-0.14	1	15.5	16	0.785
Ant2	Bottom	0mm	2.4G	11b	1	0.367	0.186	0.08	1	15.5	16	0.412
Ant2	Back	0mm	2.4G	11b	7	0.212	0.117	-0.05	1	15.5	16	0.238
Ant2	Bottom	0mm	2.4G	11b	7	0.369	0.187	-0.05	1	15.5	16	0.414
Ant2	Bottom	0mm	2.4G	11b	13	0.363	0.191	0.19	1	15.5	16	0.407
BT	Back	0mm	BT	DH5	14	0.0378	0.00897	0.01	0.95	10.46	10.5	0.04
Conclusion: PASS												
Note: Factor= Max. Scaled AV Power(W)/Measured Power(W) Scaled SAR-1= Measured SAR*Factor Scaled-Final= Scaled SAR-1*(1/Duty Cycle)												

Test Mode: WIFI 5GHz

Remark	Test Position	distance	Band	Mode	Test CH	SAR(W/kg) 1g	SAR(W/kg) 10g	Power Drift (dB)	Duty cycle	Conducted	Tune up	SAR 1g
Ant1	Back	0mm	Band1	11ac80	42	0.303	0.203	-0.13	1	17	18	**0.381**
Ant1	Back	0mm	Band2	11ac160	50	0.301	0.207	0.08	1	17	18	**0.379**
Ant1	Back	0mm	Band3	11ac160	114	0.416	0.264	0.17	1	17	18	**0.524**
Ant1	Back	0mm	Band4	11ac80	155	0.395	0.253	-0.16	1	17	18	**0.497**
Ant2	Bottom	0mm	Band1	11ac80	42	0.182	0.145	-0.2	1	17	18	**0.229**
Ant2	Back	0mm	Band1	11ac80	42	0.204	0.162	0.13	1	17	18	**0.257**
Ant2	Back	0mm	Band2	11ac160	50	0.189	0.158	0.12	1	17	18	**0.238**
Ant2	Bottom	0mm	Band2	11ac160	50	0.148	0.131	0.13	1	17	18	**0.186**
Ant2	Back	0mm	Band3	11ac160	114	0.203	0.174	0.19	1	17	18	**0.256**
Ant2	Bottom	0mm	Band3	11ac160	114	0.176	0.163	0.06	1	17	18	**0.222**
Ant2	Back	0mm	Band4	11ac80	155	0.197	0.137	-0.05	1	17	18	**0.248**
Ant2	Bottom	0mm	Band4	11ac80	155	0.157	0.131	0.2	1	17	18	**0.198**
Conclusion: PASS												
Note: Factor= Max. Scaled AV Power(W)/Measured Power(W) Scaled SAR-1= Measured SAR*Factor Scaled-Final= Scaled SAR-1*(1/Duty Cycle)												

Total SAR:

WLAN 5G			Total SAR 1g	Limit
Position	Band1			
	Ant1	Ant2		
Back	0.381	0.257	0.638	1.6W/kg
Bottom	---	0.229	0.229	

WLAN 5G			Total SAR 1g	Limit
Position	Band2			
	Ant1	Ant2		
Back	0.379	0.238	0.617	1.6W/kg
Bottom	---	0.186	0.186	

WLAN 5G			Total SAR 1g	Limit
Position	Band3			
	Ant1	Ant2		
Back	0.524	0.256	0.780	1.6W/kg
Bottom	---	0.222	0.222	

WLAN 5G			Total SAR 1g	Limit
Position	**Band4**			
	Ant1	**Ant2**		
Back	0.497	0.248	0.745	1.6W/kg
Bottom	---	0.198	0.198	

WLAN 2.4G			Total SAR 1g	Limit
Position	**Ant1**	**Ant2**		
Back	0.785	0.238	**1.023**	1.6W/kg
Bottom	---	0.414	0.414	

WLAN 2.4G+BT			Total SAR 1g	Limit
Position	BT	Ant2		
Back	0.040	0.238	0.278	1.6W/kg
Bottom	---	0.414	0.414	

WLAN 5G+BT			Total SAR 1g
Position	Band1		
	Ant2	BT	
Back	0.257	0.040	0.297
Bottom	0.229	---	0.229

WLAN 5G+BT			Total SAR 1g	Limit (W/kg)
Position	Band1			
	Ant1+2	BT		
Back	0.638	0.040	0.678	1.6
Bottom	0.229	---	0.229	

WLAN 5G+BT			Total SAR 1g
Position	Band2		
	Ant2	BT	
Back	0.238	0.040	0.278
Bottom	0.186	---	0.186

WLAN 5G+BT			Total SAR 1g
Position	Band2		
	Ant1+2	BT	
Back	0.617	0.040	0.657
Bottom	0.186	---	0.186

WLAN 5G+BT			Total SAR 1g
Position	Band3		
	Ant2	BT	
Back	0.256	0.040	0.296
Bottom	0.222	---	0.222

WLAN 5G+BT			Total SAR 1g
Position	Band3		
	Ant1+2	BT	
Back	0.780	0.040	0.820
Bottom	0.222	---	0.222

WLAN 5G+BT			Total SAR 1g
Position	Band4		
	Ant2	BT	
Back	0.248	0.040	0.288
Bottom	0.198	---	0.198

WLAN 5G+BT			Total SAR 1g
Position	Band4		
	Ant1+2	BT	
Back	0.745	0.040	0.785
Bottom	0.198	---	0.198

APPENDIX A

Graph Results
(WIFI 2.4GHz & WIFI 5GHz)

Test Mode: WIFI 2.4GHz(ANT1):

Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH1(2412MHz Back)

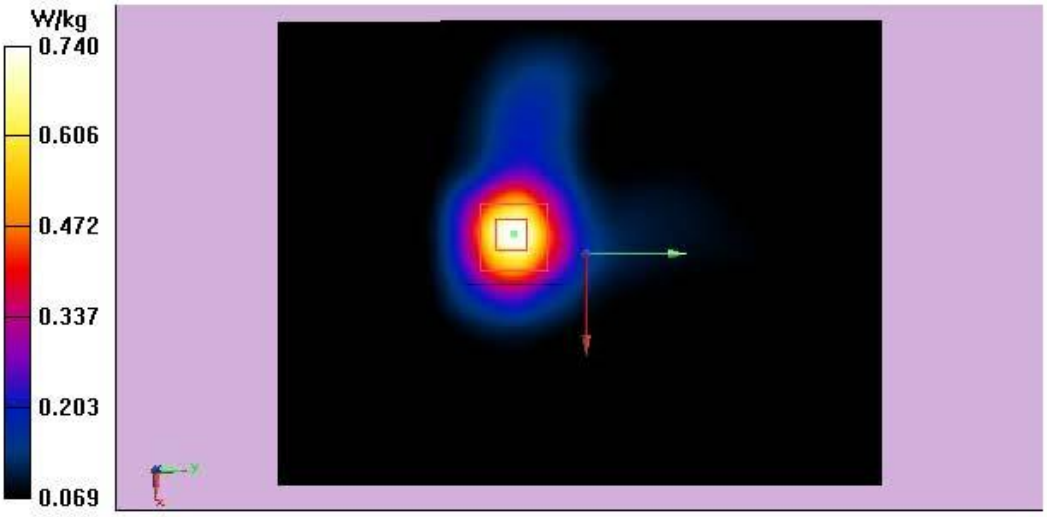
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2412 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2412 MHz; σ = 1.841 S/m; ε_r = 38.849; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH1(2412MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.789 W/kg

Configuration/CH1(2412MHz Back)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.801 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.681 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 0.740 W/kg



Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH7(2442MHz Back)

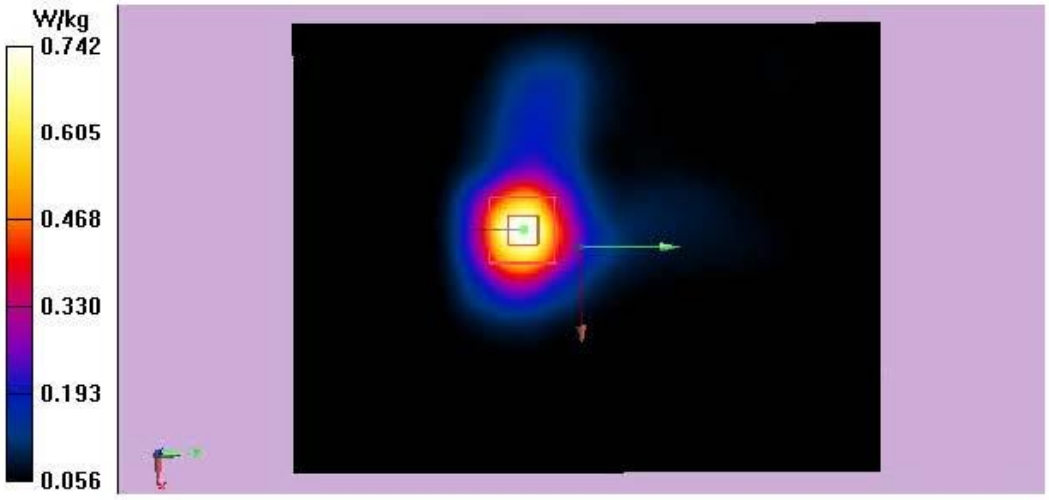
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2442 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2442 MHz; σ = 1.879 S/m; ε_r = 38.731; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH7(2442MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.803 W/kg

Configuration/CH7(2442MHz Back)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.621 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.685 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 0.742 W/kg



Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH13(2472MHz Back)

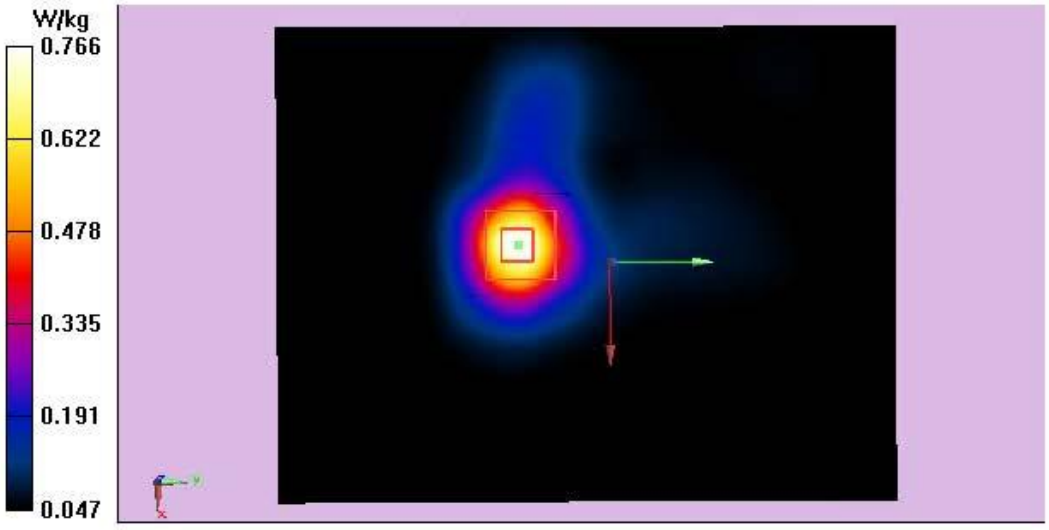
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2472 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2472 MHz; σ = 1.908 S/m; ε_r = 38.627; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH13(2472MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.821 W/kg

Configuration/CH13(2472MHz Back)/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.435 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.700 W/kg; SAR(10 g) = 0.351 W/kg
Maximum value of SAR (measured) = 0.766 W/kg



Test Mode: WIFI 2.4GHz(ANT2):

Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH1(2412MHz Bottom)

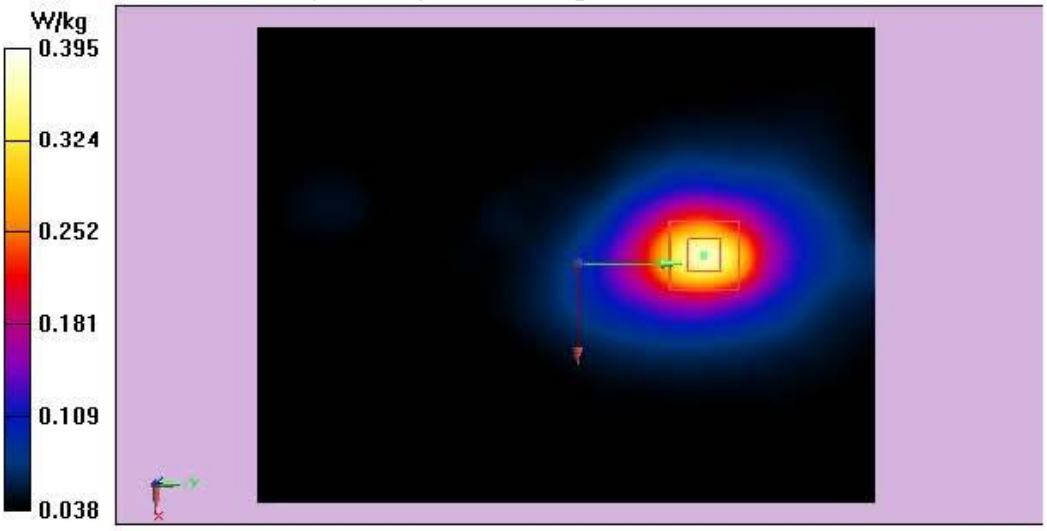
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2412 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2412 MHz; σ = 1.841 S/m; ε_r = 38.849; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH1(2412MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.380 W/kg

Configuration/CH1(2412MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.639 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.869 W/kg
SAR(1 g) = 0.367 W/kg; SAR(10 g) = 0.186 W/kg
Maximum value of SAR (measured) = 0.395 W/kg



Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH7(2442MHz Back)

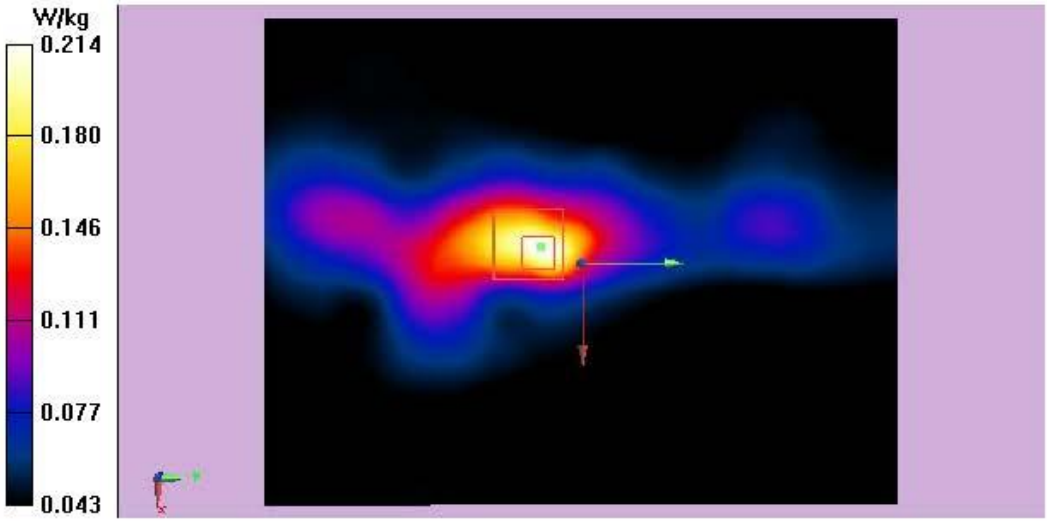
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2442 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2442 MHz; σ = 1.879 S/m; ε_r = 38.731; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH7(2442MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.221 W/kg

Configuration/CH7(2442MHz Back)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.187 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.618 W/kg
SAR(1 g) = 0.212 W/kg; SAR(10 g) = 0.117 W/kg
Maximum value of SAR (measured) = 0.214 W/kg



Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH7(2442MHz Bottom)

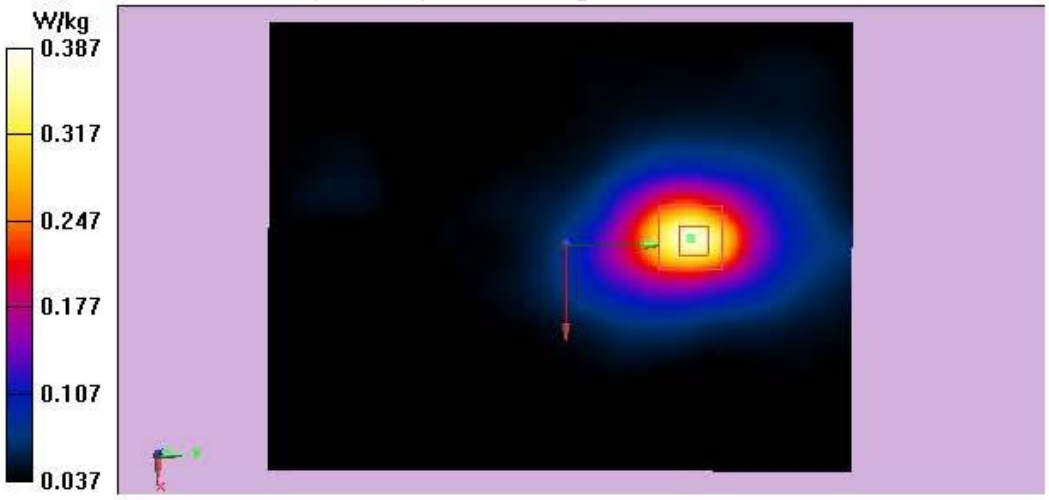
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2442 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2442 MHz; σ = 1.879 S/m; ε_r = 38.731; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH7(2442MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.378 W/kg

Configuration/CH7(2442MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.583 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.930 W/kg
SAR(1 g) = 0.369 W/kg; SAR(10 g) = 0.187 W/kg
Maximum value of SAR (measured) = 0.387 W/kg



Test Laboratory: Audix SAR Lab Date: 11/11/2024

CH13(2472MHz Bottom)

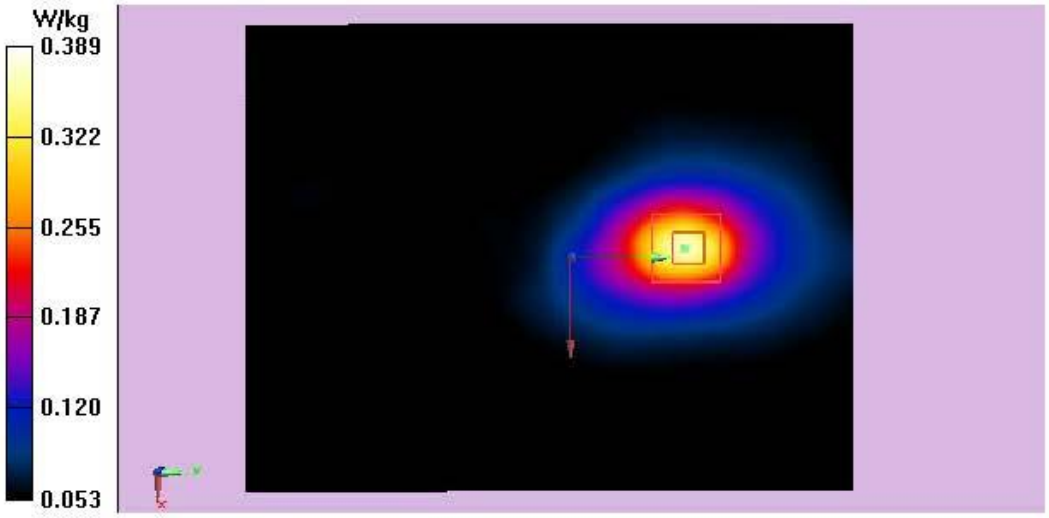
DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) (0);
Communication System Band: ISM 2.4GHz Band (2400.0-2483.5MHz) ; Frequency: 2472 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 2472 MHz; σ = 1.908 S/m; ε_r = 38.627; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(7.6, 7.6, 7.6); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH13(2472MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.370 W/kg

Configuration/CH13(2472MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.903 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.845 W/kg
SAR(1 g) = 0.363 W/kg; SAR(10 g) = 0.191 W/kg
Maximum value of SAR (measured) = 0.389 W/kg



Test Mode: WIFI 5GHz-Band 1(ANT1):

Test Laboratory: Audix SAR Lab Date: 13/11/2024

CH42(5210MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a80 WiFi 5.2GHz (0); Communication System Band: IEEE 802.11a80 WiFi 5.2GHz; Frequency: 5210 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5210 MHz; σ = 4.253 S/m; ε_r = 37.132; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.5, 5.5, 5.5); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH42(5210MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.351 W/kg

Configuration/CH42(5210MHz Back)/Zoom Scan (5x5x7)/Cube 0:

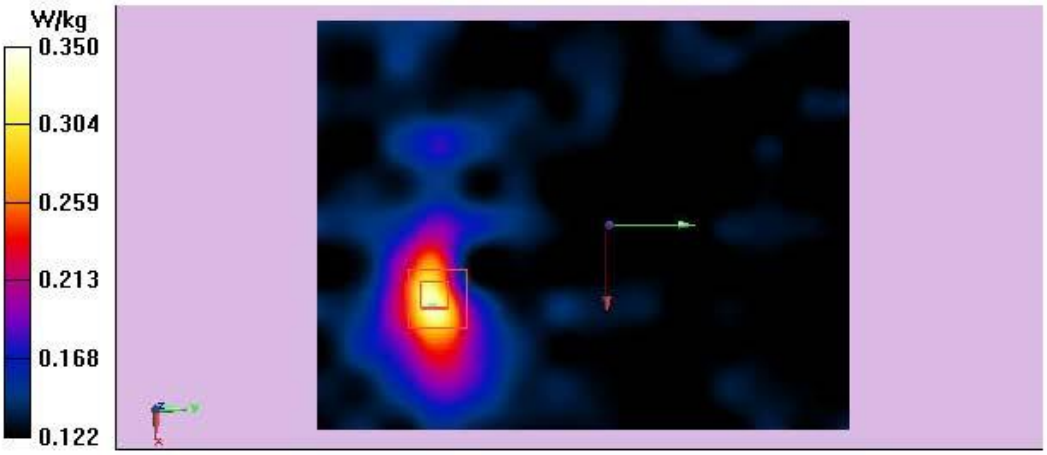
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.110 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.521 W/kg

SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.203 W/kg

Maximum value of SAR (measured) = 0.350 W/kg



Test Mode: WIFI 5GHz-Band 1(ANT2):

Test Laboratory: Audix SAR Lab Date: 13/11/2024

CH42(5210MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a80 WiFi 5.2GHz (0); Communication System Band: IEEE 802.11a80 WiFi 5.2GHz; Frequency: 5210 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5210 MHz; σ = 4.253 S/m; ε_r = 37.132; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.5, 5.5, 5.5); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH42(5210MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Configuration/CH42(5210MHz Back)/Zoom Scan (5x5x7)/Cube 0:

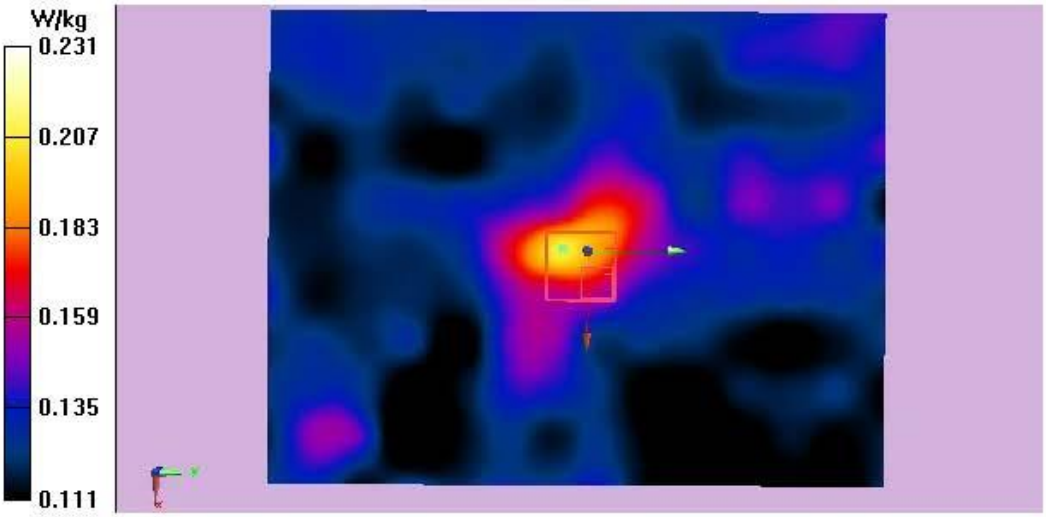
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.474 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.268 W/kg

SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.162 W/kg

Maximum value of SAR (measured) = 0.231 W/kg



Test Laboratory: Audix SAR Lab Date: 13/11/2024

CH42(5210MHz Bottom)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11n40 WiFi 5.2GHz (0); Communication System Band: IEEE 802.11n40 WiFi 5.2GHz; Frequency: 5210 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5210 MHz; σ = 4.253 S/m; ε_r = 37.132; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.5, 5.5, 5.5); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH42(5210MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.333 W/kg

Configuration/CH42(5210MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:

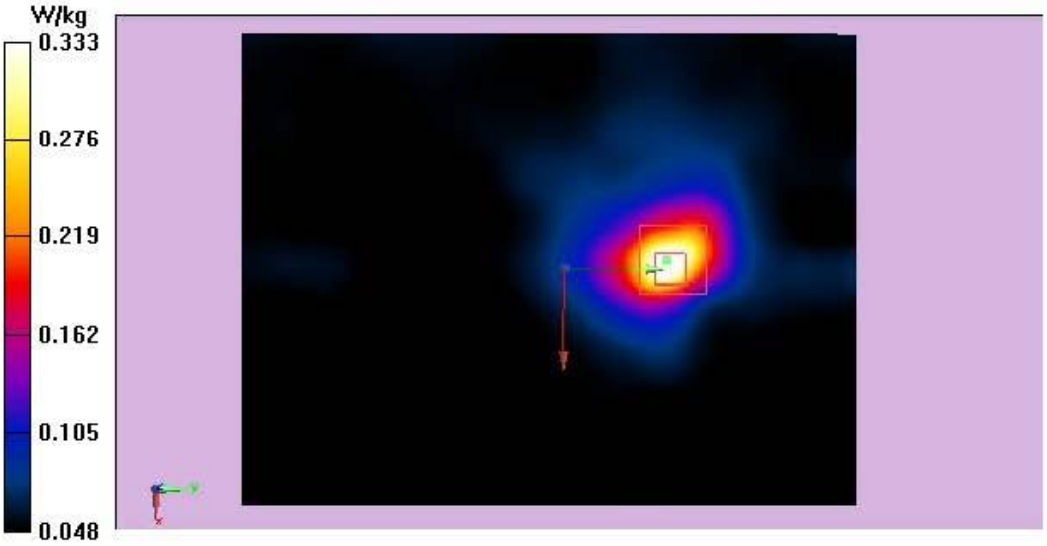
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.044 V/m; Power Drift = -0.20 dB

Peak SAR (extrapolated) = 0.612 W/kg

SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.145 W/kg

Maximum value of SAR (measured) = 0.333 W/kg



Test Mode: WIFI 5GHz-Band 2(ANT1):

Test Laboratory: Audix SAR Lab Date: 13/11/2024

CH50(5250MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a160 WiFi 5.3GHz (0); Communication System Band: IEEE 802.11a160 WiFi 5.3GHz ; Frequency: 5250 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5250 MHz; σ = 4.489 S/m; ε_r = 37.049; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.32, 5.32, 5.32); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH50(5250MHz Front)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.312 W/kg

Configuration/CH50(5250MHz Front)/Zoom Scan (5x5x7)/Cube 0:

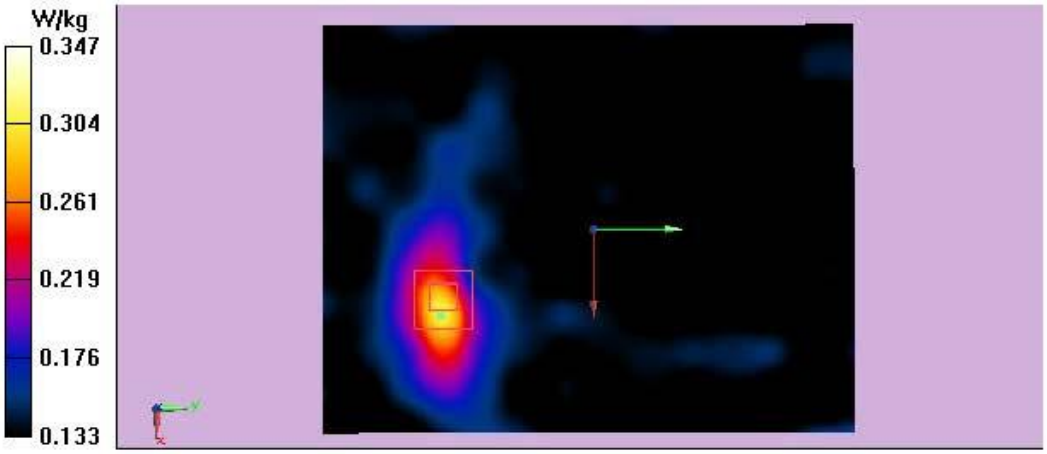
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.695 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.514 W/kg

SAR(1 g) = 0.301 W/kg; SAR(10 g) = 0.207 W/kg

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



Test Mode: WIFI 5GHz-Band 2(ANT2):

Test Laboratory: Audix SAR Lab Date: 13/11/2024

CH50(5250MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a160 WiFi 5.3GHz (0); Communication System Band: IEEE 802.11a160 WiFi 5.3GHz ; Frequency: 5250 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5250 MHz; σ = 4.489 S/m; ε_r = 37.049; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.32, 5.32, 5.32); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH50(5250MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.156 W/kg

Configuration/CH50(5250MHz Back)/Zoom Scan (5x5x7)/Cube 0:

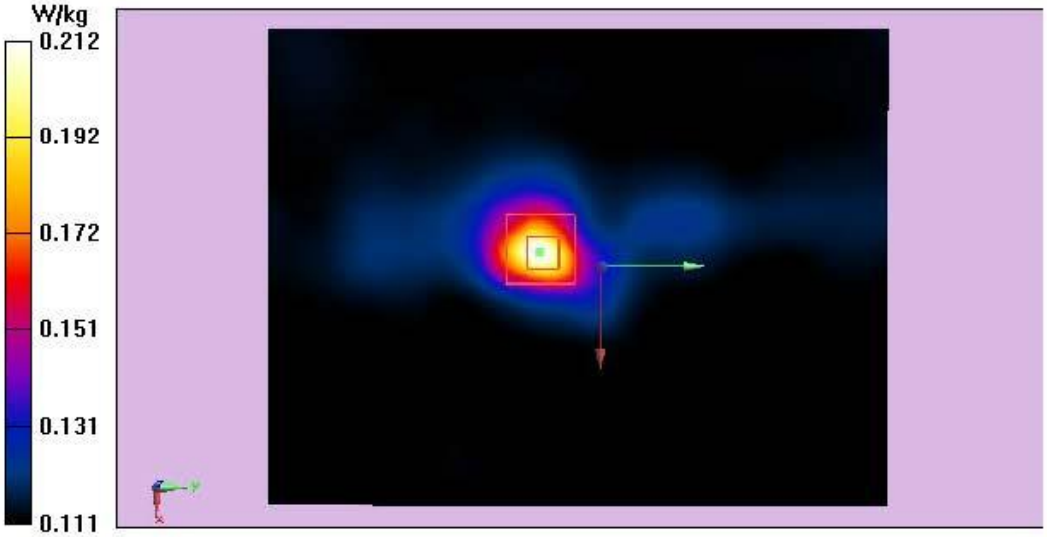
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.594 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.221 W/kg

SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.158 W/kg

Maximum value of SAR (measured) = 0.654 W/kg



Test Laboratory: Audix SAR Lab Date: 13/11/2024

CH50(5250MHz Bottom)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a160 WiFi 5.3GHz (0); Communication System Band: IEEE 802.11a160 WiFi 5.3GHz ; Frequency: 5250 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5250 MHz; σ = 4.489 S/m; ε_r = 37.049; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(5.32, 5.32, 5.32); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH50(5250MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.147 W/kg

Configuration/CH50(5250MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:

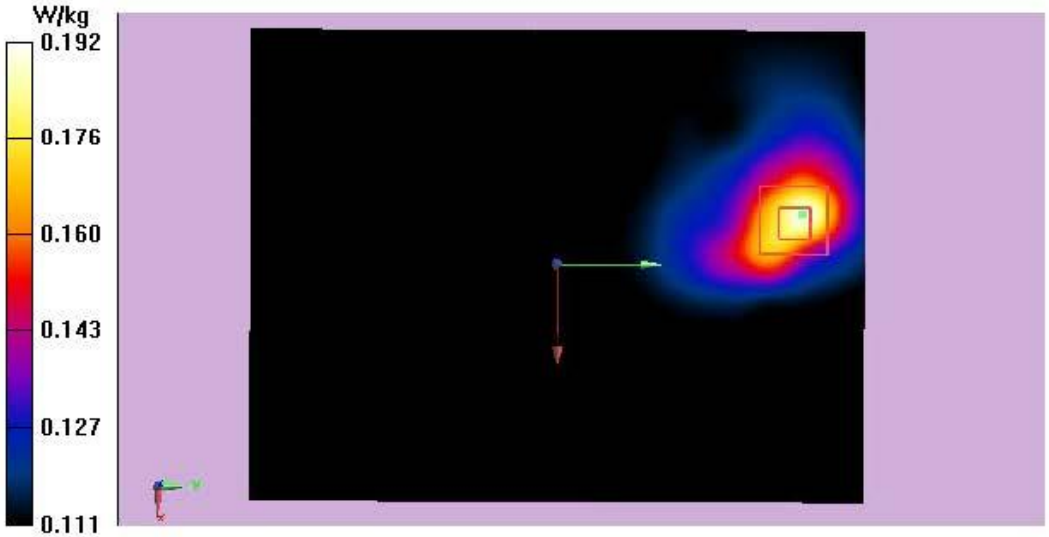
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.612 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.213 W/kg

SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.131 W/kg

Maximum value of SAR (measured) = 0.192 W/kg



Test Mode: WIFI 5GHz- Band 3(ANT1):

Test Laboratory: Audix SAR Lab Date: 15/11/2024

CH114(5570MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a160 WiFi 5.5GHz (0); Communication System Band: IEEE 802.11a160 WiFi 5.5GHz; Frequency: 5570 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5570 MHz; σ = 4.836 S/m; ε_r = 36.234; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.85, 4.85, 4.85); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH114(5570MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.456 W/kg

Configuration/CH114(5570MHz Back)/Zoom Scan (5x5x7)/Cube 0:

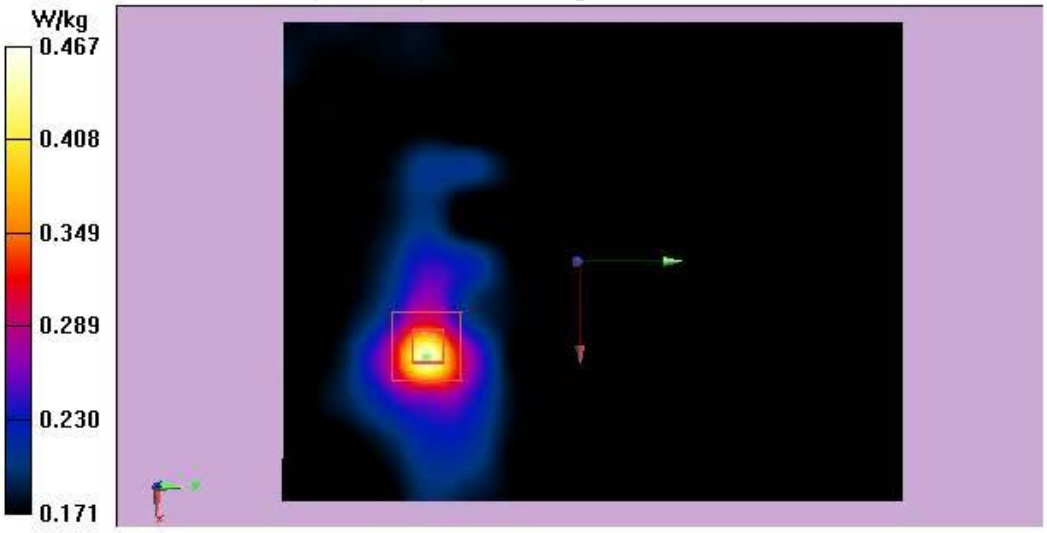
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.329 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.745 W/kg

SAR(1 g) = 0.416 W/kg; SAR(10 g) = 0.264 W/kg

Maximum value of SAR (measured) = 0.467 W/kg



Test Mode: WIFI 5GHz- Band 3(ANT2):

Test Laboratory: Audix SAR Lab Date: 15/11/2024

CH114(5570MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a160 WiFi 5.5GHz (0); Communication System Band: IEEE 802.11a160 WiFi 5.5GHz; Frequency: 5570 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5570 MHz; σ = 4.836 S/m; ε_r = 36.234; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.85, 4.85, 4.85); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH114(5570MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.178 W/kg

Configuration/CH114(5570MHz Back)/Zoom Scan (5x5x7)/Cube 0:

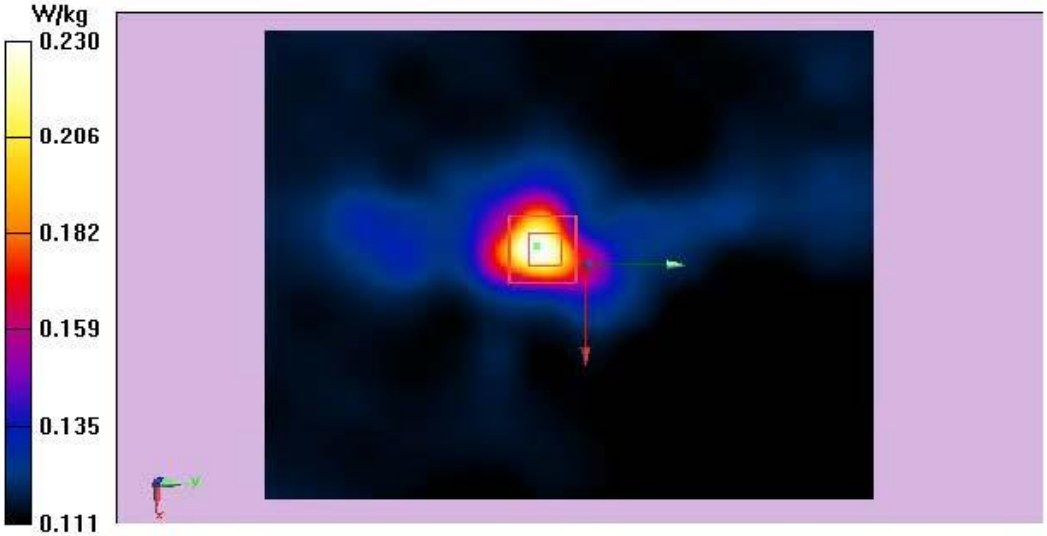
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.508 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.238 W/kg

SAR(1 g) = 0.203 W/kg; SAR(10 g) = 0.174 W/kg

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



Test Laboratory: Audix SAR Lab Date: 15/11/2024

CH114(5570MHz Bottom)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a160 WiFi 5.5GHz (0); Communication System Band: IEEE 802.11a160 WiFi 5.5GHz; Frequency: 5570 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5570 MHz; σ = 4.836 S/m; ε_r = 36.234; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.85, 4.85, 4.85); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH114(5570MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.204 W/kg

Configuration/CH114(5570MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:

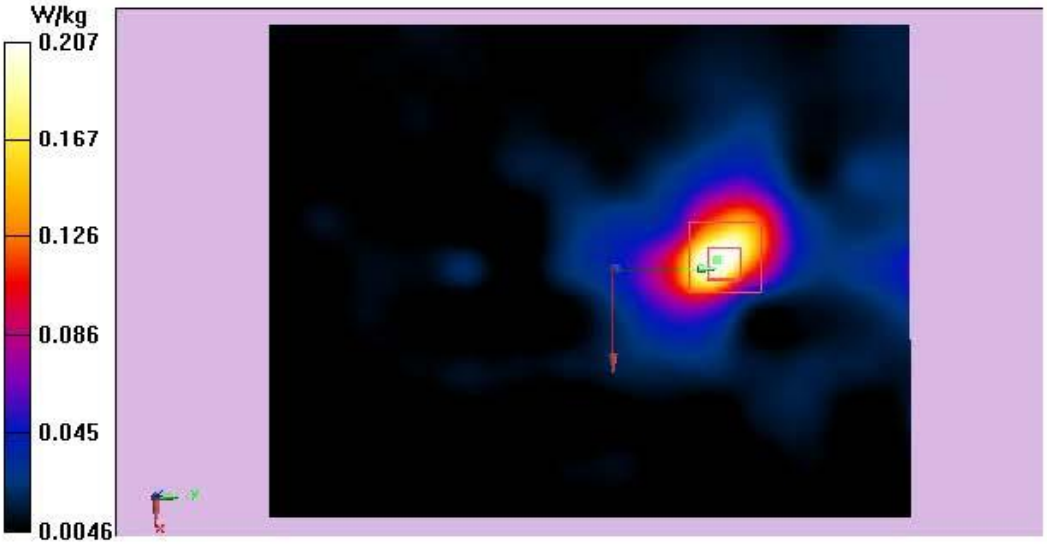
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.901 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.211 W/kg

SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.163 W/kg

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



Test Mode: WIFI 5GHz-Band 4(ANT1):

Test Laboratory: Audix SAR Lab Date: 19/11/2024

CH155(5775MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a80 WiFi 5.8GHz (0); Communication System Band: IEEE 802.11a80 WiFi 5.8GHz ; Frequency: 5775 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5775 MHz; σ = 5.125 S/m; ε_r = 34.861; ρ = 1000 kg /m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.91, 4.91, 4.91); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH155(5775MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.409 W/kg

Configuration/CH155(5775MHz Back)/Zoom Scan (5x5x7)/Cube 0:

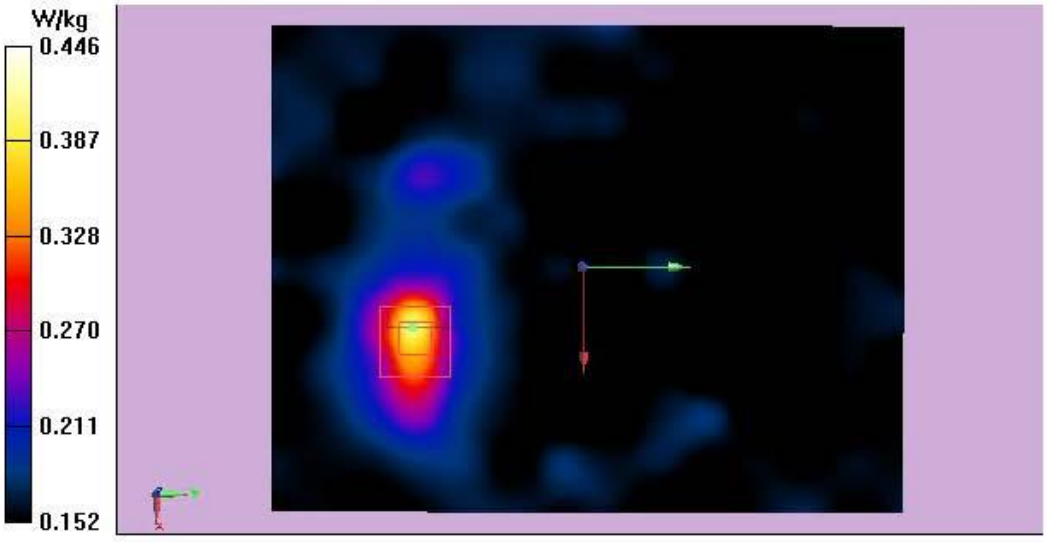
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.416 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.395 W/kg; SAR(10 g) = 0.253 W/kg

Maximum value of SAR (measured) = 0.444 W/kg



Test Mode: WIFI 5GHz-Band 4(ANT2):

Test Laboratory: Audix SAR Lab Date: 19/11/2024

CH155(5775MHz Back)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a80 WiFi 5.8GHz (0); Communication System Band: IEEE 802.11a80 WiFi 5.8GHz ; Frequency: 5775 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5775 MHz; σ = 5.125 S/m; ε_r = 34.861; ρ = 1000 kg /m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.91, 4.91, 4.91); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH155(5775MHz Back)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.205 W/kg

Configuration/CH155(5775MHz Back)/Zoom Scan (5x5x7)/Cube 0:

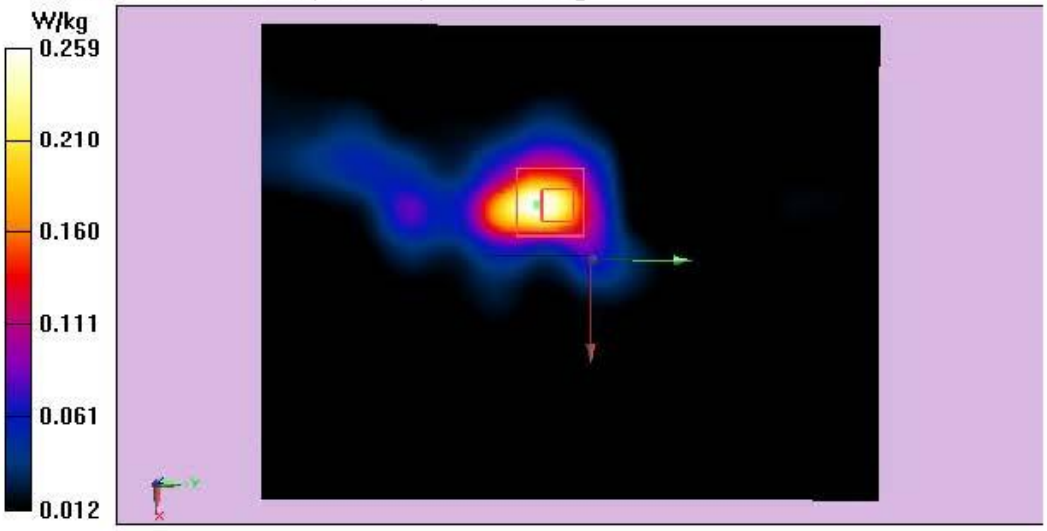
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.134 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.308 W/kg

SAR(1 g) = 0.197 W/kg; SAR(10 g) = 0.137 W/kg

Maximum value of SAR (measured) = 0.215 W/kg



Test Laboratory: Audix SAR Lab Date: 19/11/2024

CH155(5775MHz Bottom)

DUT: Notebook computer M/N:N24G1

Communication System: UID 0, IEEE 802.11a80 WiFi 5.8GHz (0); Communication System Band: IEEE 802.11a80 WiFi 5.8GHz ; Frequency: 5775 MHz;Communication System PAR: 0 dB

Medium parameters used: f = 5775 MHz; σ = 5.125 S/m; ε_r = 34.861; ρ = 1000 kg /m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3767; ConvF(4.91, 4.91, 4.91); Calibrated: 01/08/2024;
- Modulation Compensation:
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn899; Calibrated: 06/06/2024
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/CH155(5775MHz Bottom)/Area Scan (101x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.182 W/kg

Configuration/CH155(5775MHz Bottom)/Zoom Scan (5x5x7)/Cube 0:

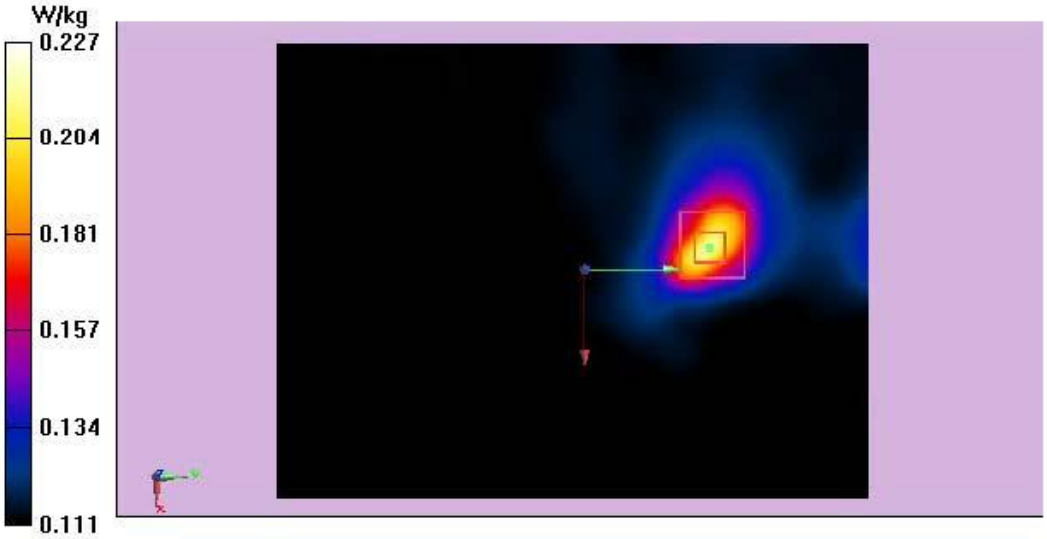
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.052 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 0.317 W/kg

SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.131 W/kg

Maximum value of SAR (measured) = 0.227 W/kg



APPENDIX B

DASY Calibration Certificate

In Collaboration with
CALIBRATION LABORATORY
Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191
Tel: +86-10-62304633-2117
E-mail: cttl@chinattl.com http://www.caict.ac.cn

CNAS 中国认可 国际互认 校准 CALIBRATION CNAS L0570

Client audix Certificate No: J23Z60244

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 862
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	May 18, 2023

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	22-Sep-22 (CTTL, No.J22X09561)	Sep-23
Power sensor NRP8S	104291	22-Sep-22 (CTTL, No.J22X09561)	Sep-23
Reference Probe EX3DV4	SN 3617	31-Mar-23(CTTL-SPEAG,No.Z23-60161)	Mar-24
DAE4	SN 1556	11-Jan-23(CTTL-SPEAG,No.Z23-60034)	Jan-24
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	05-Jan-23 (CTTL, No. J23X00107)	Jan-24
NetworkAnalyzer E5071C	MY46110673	10-Jan-23 (CTTL, No. J23X00104)	Jan-24

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: May 24, 2023

In Collaboration with
s p e a g
CALIBRATION LABORATORY

Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2117
E-mail: cttl@chinattl.com http://www.caict.ac.cn

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure for The Assessment of Specific Absorption Rate of Human Exposure to Radio Frequency Fields from Hand-held and Body-mounted Wireless Communication Devices- Part 1528: Human Models, Instrumentation and Procedures (Frequency range of 4 MHz to 10 GHz)", October 2020

b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2, which for a normal distribution Corresponds to a coverage probability of approximately 95%.