TEST REPORT

Applicant Name :	HDTELECOM
Address :	#708, E&C Venture Dream Tower 6th,41, Digital-ro 31-gil, Guro-gu, Seoul, South Korea 08375
Report Number :	SZNS211118-59299E-SA
FCC ID:	2ASQU-PHOENIXNOTE

Test Standard (s)

FCC Part 2.1093

Sample Description

Product Type:	Phoenix Note
Model No.:	PPS2022-P156
Multiple Model(s) No.:	1501A,1502A,1503A
Trade Mark:	N/A
Date Received:	2021/11/20
Date of Test:	2022/2/12
Report Date:	2022/2/23

Test Result:	Pass*

* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Lance Li

EMC Engineer

Approved By:

Candy Li

RF Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

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<table>
<tr><th colspan="4">Attestation of Test Results</th></tr>
<tr><th colspan="2">MODE</th><th>Max. SAR Level(s) Reported(W/kg)</th><th>Limit (W/kg)</th></tr>
<tr><td>2.4G Wi-Fi</td><td>1g Body SAR</td><td>0.56</td><td rowspan="2">1.6</td></tr>
<tr><td>5G Wi-Fi</td><td>1g Body SAR</td><td>0.55</td></tr>
<tr><td rowspan="5">Applicable Standards</td><td colspan="3">FCC 47 CFR part 2.1093
Radiofrequency radiation exposure evaluation: portable devices</td></tr>
<tr><td colspan="3">RF Exposure Procedures: TCB Workshop October 2015</td></tr>
<tr><td colspan="3">IEEE1528:2013
IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques</td></tr>
<tr><td colspan="3">IEC 62209-1:2016
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 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz)</td></tr>
<tr><td colspan="3">KDB procedures
KDB 447498 D01 General RF Exposure Guidance v06
KDB 616217 D04 SAR for laptop and tablets v01r02
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 248227 D01 802 11 Wi-Fi SAR v02r02</td></tr>
<tr><td colspan="4">Note: This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for General Population/Uncontrolled Exposure limits specified in FCC 47 CFR part 2.1093 and has been tested in accordance with the measurement procedures specified in IEEE1528:2013 and RF exposure KDB procedures.The results and statements contained in this report pertain only to the device(s) evaluated.</td></tr>
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZNS211118-59299E-SA	Original Report	2022/2/23

EUT DESCRIPTION

This report has been prepared on behalf of ***HDTELECOM*** and their product ***Phoenix Note***, Model: ***PPS2022-P156***, FCC ID: ***2ASQU-PHOENIXNOTE*** or the EUT (Equipment under Test) as referred to in the rest of this report.

*Notes: This series products model: **1501A,1502A,1503A** and **PPS2022-P156** are identical; Model **PPS2022-P156**was selected for fully testing, the detailed information can be referred to the attached declaration which was stated and guaranteed by the applicant.*

Technical Specification

Device Type:	Portable
Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
DTM Type:	Class B
Body-Worn Accessories:	None
Face-Head Accessories:	None
Operation Mode :	Wi-Fi and Bluetooth
Frequency Band:	Wi-Fi 2.4G: 2412-2472 MHz Wi-Fi 5.2G: 5150-5250 MHz Wi-Fi 5.8G: 5725-5850 MHz Bluetooth: 2402 -2480 MHz
Power Source:	Rechargeable Battery
Normal Operation:	Body-Support

REFERENCE, STANDARDS, AND GUIDELINES

FCC:

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g as recommended by the ANSI/IEEE standard C95.1-1992 [6] for an uncontrolled environment (Paragraph 65). According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America is 1.6 mW/g average over 1 gram of tissue mass.

CE:

The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 2 mW/g as recommended by EN62209-1 for an uncontrolled environment. According to the Standard, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in Europe is 2 mW/g average over 10 gram of tissue mass.

The test configurations were laid out on a specially designed test fixture to ensure the reproducibility of measurements. Each configuration was scanned for SAR. Analysis of each scan was carried out to characterize the above effects in the device.

SAR Limits

FCC Limit(1g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	**1.60**	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

CE Limit(10g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 10 g of tissue)	2.0	10
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg (FCC) & 2 W/kg (CE) applied to the EUT.

FACILITIES

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358,the FCC Designation No.: CN1189.
Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01 .

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A.

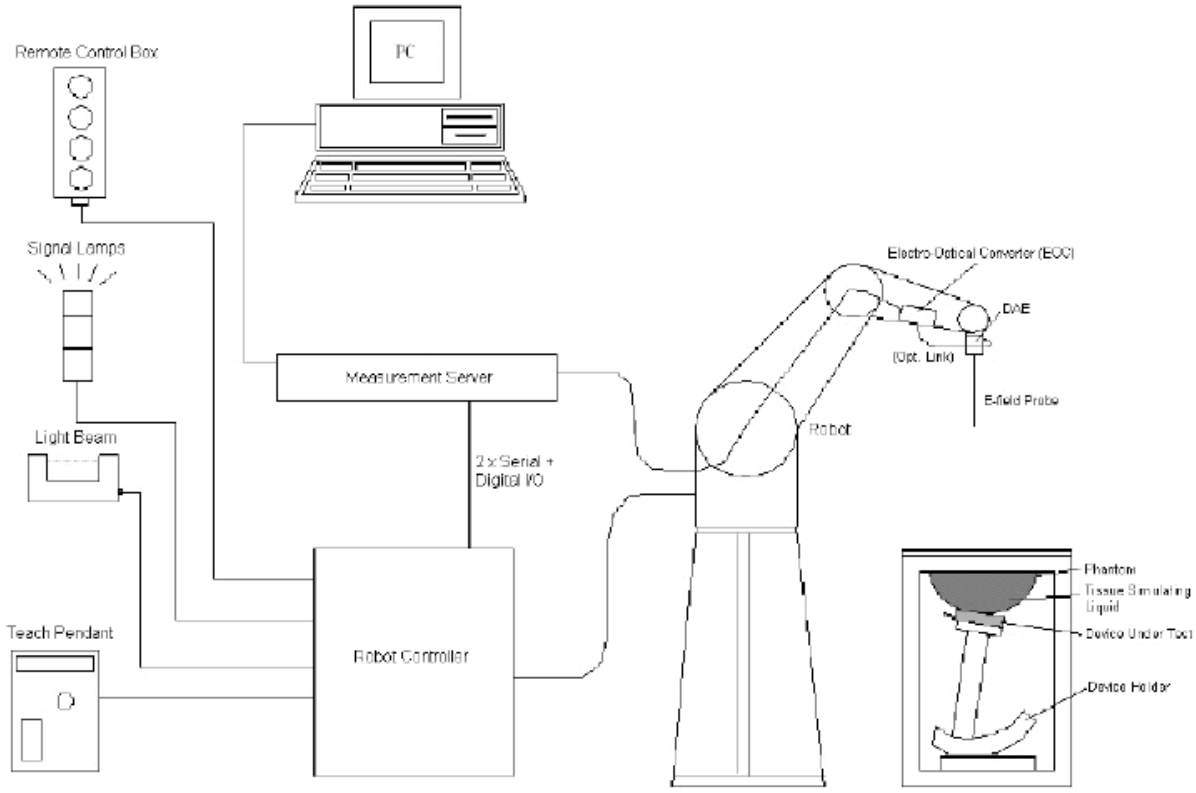
The test site has been registered with ISED Canada under ISED Canada Registration Number CN0016.

DESCRIPTION OF TEST SYSTEM

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:

DASY5 System Description

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



- A standard high precision 6-axis robot (Staubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal application, 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.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY52 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

DASY5 Measurement Server

The DASY5 measurement server is based on a PC/104 CPU board with a 400 MHz Intel ULV Celeron, 128 MB chip-disk and 128 MB RAM. The necessary circuits for communication with the DAE4 (or DAE3) electronics box, as well as the 16-bit AD converter system for optical detection and digital I/O interface are contained on the DASY6 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluations of field measurements and surface detection, controls robot movements, and handles safety operations. The PC operating system cannot interfere with these time-critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program- controlled robot movements. Furthermore, the measurement server is equipped with an expansion port, which is reserved for future applications. Please note that this expansion port does not have a standardized pinout, and therefore only devices provided by SPEAG can be connected. Connection of devices from any other supplier could seriously damage the measurement server.

Data Acquisition Electronics

The data acquisition electronics (DAE4) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of both the DAE4 as well as of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

EX3DV4 E-Field Probes

Frequency	10 MHz to > 6 GHz Linearity: ±0.2 dB (30 MHz to 6 GHz)
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	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
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

SAM Twin Phantom

The SAM Twin Phantom (shown in front of DASY5) is a fiberglass shell phantom with shell thickness 2 mm, except in the ear region where the thickness is increased to 6 mm..

When the phantom is mounted inside allocated slot of the DASY5 platform, phantom reference points can be taught directly in the DASY5 V5.2 software. When the DASY5 platform is used to mount the

Phantom, some of the phantom teaching points cannot be reached by the robot in DASY5 V5.2. A special tool called P1a-P2aX-Former is provided to transform two of the three points, P1 and P2, to reachable locations. To use these new teaching points, a revised phantom configuration file is required.
In addition to our standard broadband liquids, the phantom can be used with the following tissue simulating liquids:

Sugar-water-based liquids can be left permanently in the phantom. Always cover the liquid when the system is not in use to prevent changes in liquid parameters due to water evaporation.
DGBE-based liquids should be used with care. As DGBE is a softener for most plastics, the liquid should be taken out of the phantom, and the phantom should be dried when the system is not in use (desirable at least once a week).

Do not use other organic solvents without previously testing the solvent resistivity of the phantom.
Approximately 25 liters of liquid is required to fill the SAM Twin phantom.

Calibration Frequency Points for EX3DV4 E-Field Probes SN: 3619 Calibrated: 2021/08/25

Calibration Frequency Point(MHz)	Frequency Range(MHz)		Conversion Factor		
	From	To	X	Y	Z
450 Head	350	550	8.89	8.89	8.89
600 Head	500	680	8.96	8.96	8.96
750 Head	680	810	8.63	8.63	8.63
835 Head	810	860	8.50	8.50	8.50
900 Head	860	1000	8.28	8.28	8.28
1750 Head	1650	1810	7.33	7.33	7.33
1900 Head	1810	2000	7.07	7.07	7.07
2450 Head	2350	2500	6.69	6.69	6.69
2600 Head	2500	2700	6.53	6.53	6.53
5250 Head	5140	5360	4.37	4.37	4.37
5600 Head	5490	5700	4.03	4.03	4.03
5800 Head	5700	5910	3.93	3.93	3.93

Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 15mm 2 step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the DASY5 software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m^3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10mm,with the side length of the 10g cube is 21.5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 7 x7 x 7 (5mmx5mmx5mm) providing a volume of 30 mm in the X & Y & Z axis.

Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEC 62209-1:2016

Recommended Tissue Dielectric Parameters for Head

Table A.3 – Dielectric properties of the head tissue-equivalent liquid

Frequency MHz	Relative permittivity ε_r	Conductivity (σ) S/m
300	45,3	0,87
450	43,5	0,87
750	*41,9*	*0,89*
835	41,5	0,90
900	41,5	0,97
1 450	40,5	1,20
1 500	*40,4*	*1,23*
1 640	*40,2*	*1,31*
1 750	*40,1*	*1,37*
1 800	40,0	1,40
1 900	40,0	1,40
2 000	40,0	1,40
2 100	*39,8*	*1,49*
2 300	*39,5*	*1,67*
2 450	39,2	1,80
2 600	*39,0*	*1,96*
3 000	38,5	2,40
3 500	*37,9*	*2,91*
4 000	*37,4*	*3,43*
4 500	*36,8*	*3,94*
5 000	*36,2*	*4,45*
5 200	*36,0*	*4,66*
5 400	*35,8*	*4,86*
5 600	*35,5*	*5,07*
5 800	*35,3*	*5,27*
6 000	*35,1*	*5,48*

NOTE For convenience, permittivity and conductivity values at those frequencies which are not part of the original data provided by Drossos et al. [33] or the extension to 5 800 MHz are provided (i.e. the values shown *in italics*). These values were linearly interpolated between the values in this table that are immediately above and below these values, except the values at 6 000 MHz that were linearly extrapolated from the values at 3 000 MHz and 5 800 MHz.

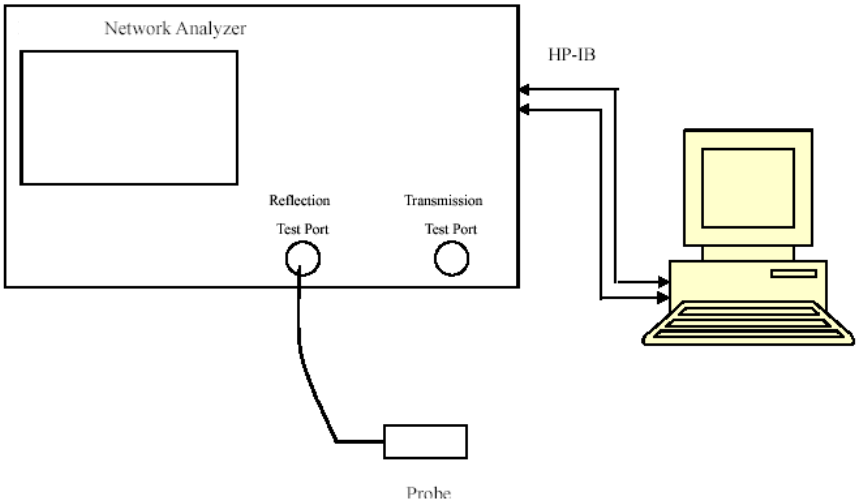
EQUIPMENT LIST AND CALIBRATION

Equipments List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
DASY5 Test Software	DASY52 52.10.4	N/A	NCR	NCR
DASY5 Measurement Server	DASY5 6.0.31	N/A	NCR	NCR
Data Acquisition Electronics	DAE4	1562	2021/12/13	2022/12/12
E-Field Probe	EX3DV4	3619	2021/08/25	2022/08/24
Mounting Device	MD4HHTV5	SD 000 H01 KA	NCR	NCR
SAM Twin Phantom	SAM-Twin V5.0	1744	NCR	NCR
Dipole,2450MHz	D2450V2	751	2020/10/13	2023/10/12
Dipole,5GHz	D5GHzV2	1301	2020/01/10	2023/01/09
Simulated Tissue Liquid Head(500-9500MHz)	HBBL600-10000V6	180622-2	Each Time	/
Network Analyzer	8753D	3410A08288	2021/7/07	2022/7/06
Dielectric Assessment Kit	DAK-3.5	1248	NCR	NCR
Signal Generator	SMB100A	108362	2021/12/23	2022/12/22
USB wideband power sensor	U2021XA	MY52350001	2021/12/23	2022/12/22
Power Amplifier	CBA 1G-070	T44328	2021/12/23	2022/12/22
Linear Power Amplifier	AS0860-40/45	1060913	2021/12/23	2022/12/22
Directional Coupler	4223-20	3.113.277	2021/12/23	2022/12/22
6dB Attenuator	8493B 6dB Attenuator	2708A 04769	2021/12/23	2022/12/22

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
2412	Simulated Tissue Liquid Head	39.247	1.763	39.28	1.77	-0.08	-0.4	±5
2442	Simulated Tissue Liquid Head	39.041	1.798	39.22	1.79	-0.46	0.45	±5
2450	Simulated Tissue Liquid Head	38.985	1.806	39.2	1.8	-0.55	0.33	±5
2472	Simulated Tissue Liquid Head	38.786	1.823	39.17	1.82	-0.98	0.16	±5

**Liquid Verification above was performed on 2022/2/12.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ	
5745	Simulated Tissue Liquid Head	34.861	5.358	35.36	5.22	-1.41	2.64	±5
5785	Simulated Tissue Liquid Head	34.734	5.392	35.32	5.26	-1.66	2.51	±5
5800	Simulated Tissue Liquid Head	34.628	5.395	35.3	5.27	-1.9	2.37	±5
5825	Simulated Tissue Liquid Head	34.556	5.401	35.28	5.3	-2.05	1.91	±5

**Liquid Verification was performed on 2022/2/12.*

System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

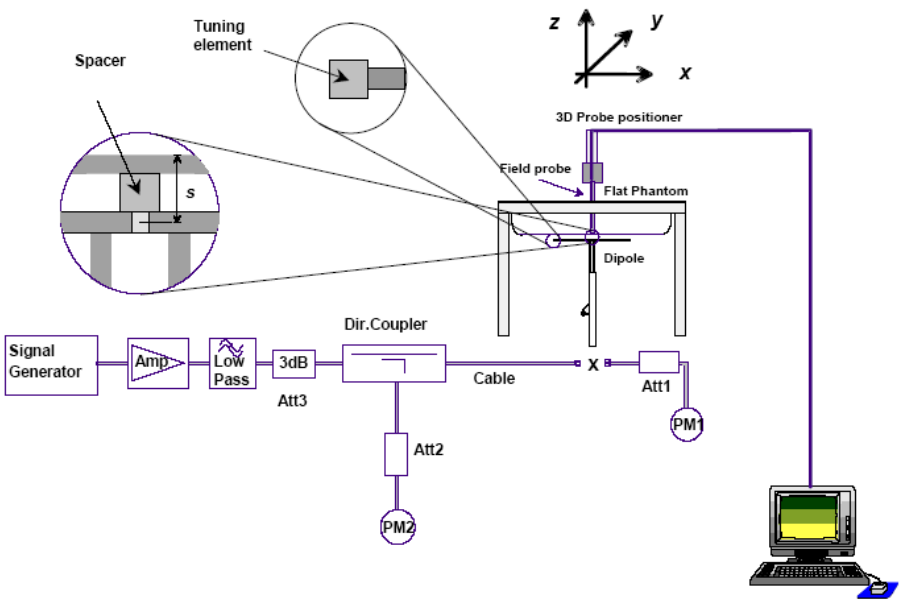
The spacing distances in the **System Verification Setup Block Diagram** is given by the following:

a) s = 15 mm ± 0,2 mm for 300 MHz ≤ f ≤ 1 000 MHz;

b) s = 10 mm ± 0,2 mm for 1 000 MHz < f ≤ 3 000 MHz;

c) s = 10 mm ± 0,2 mm for 3 000 MHz < f ≤ 6 000 MHz.

System Verification Setup Block Diagram



System Accuracy Check Results

Date	Frequency Band	Liquid Type	Input Power (mW)	Measured SAR (W/kg)		Normalized to 1W (W/kg)	Target Value (W/kg)	Delta (%)	Tolerance (%)
2022/2/12	2450 MHz	Head	100	1g	5.43	54.3	53.0	2.45	±10
2022/2/12	5800 MHz	Head	100	1g	7.96	79.6	80.2	-0.75	±10

*The SAR values above are normalized to 1 Watt forward power.

SAR SYSTEM VALIDATION DATA

System Performance 2450MHz

DUT: D2450V2; Type: 2450 MHz; Serial: 751

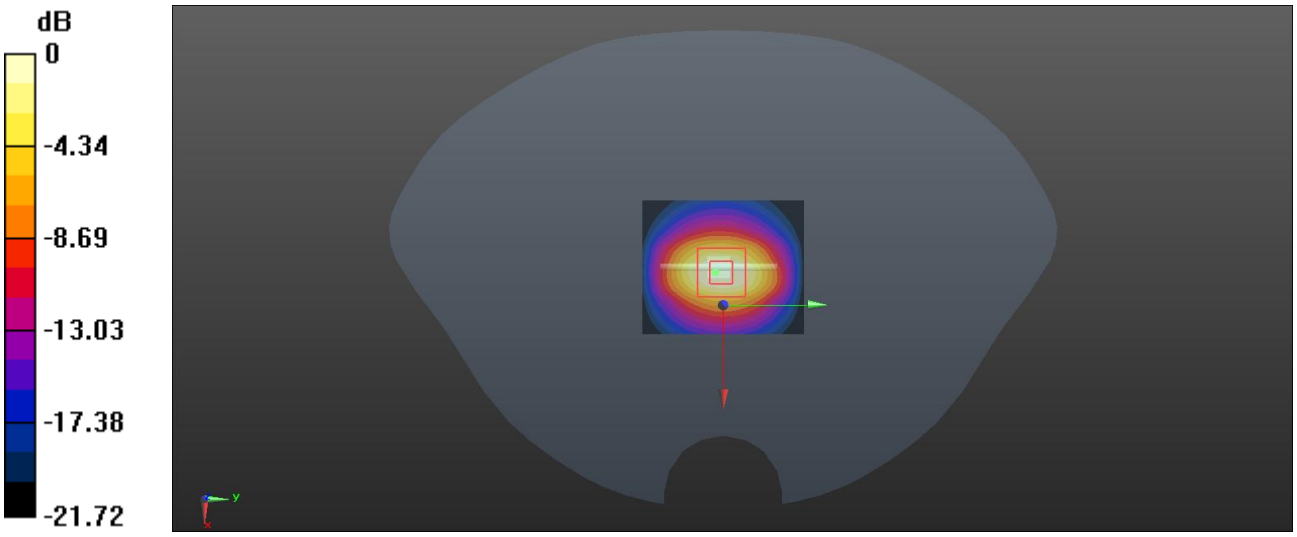
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.806 S/m; ε_r = 38.985; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(6.69, 6.69, 6.69); Calibrated: 2021/08/25
  - Sensor-Surface: 4mm (Mechanical Surface Detection)
  - Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
  - Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Area Scan (51x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 10.6 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.98 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 11.9 W/kg
SAR(1 g) = 5.43 W/kg; SAR(10 g) = 2.49 W/kg
Maximum value of SAR (measured) = 9.13 W/kg



0 dB = 9.13 W/kg = 9.60 dBW/kg

System Performance 5800MHz

DUT: D5GHzV2; Type: 5800MHz; Serial: 1301

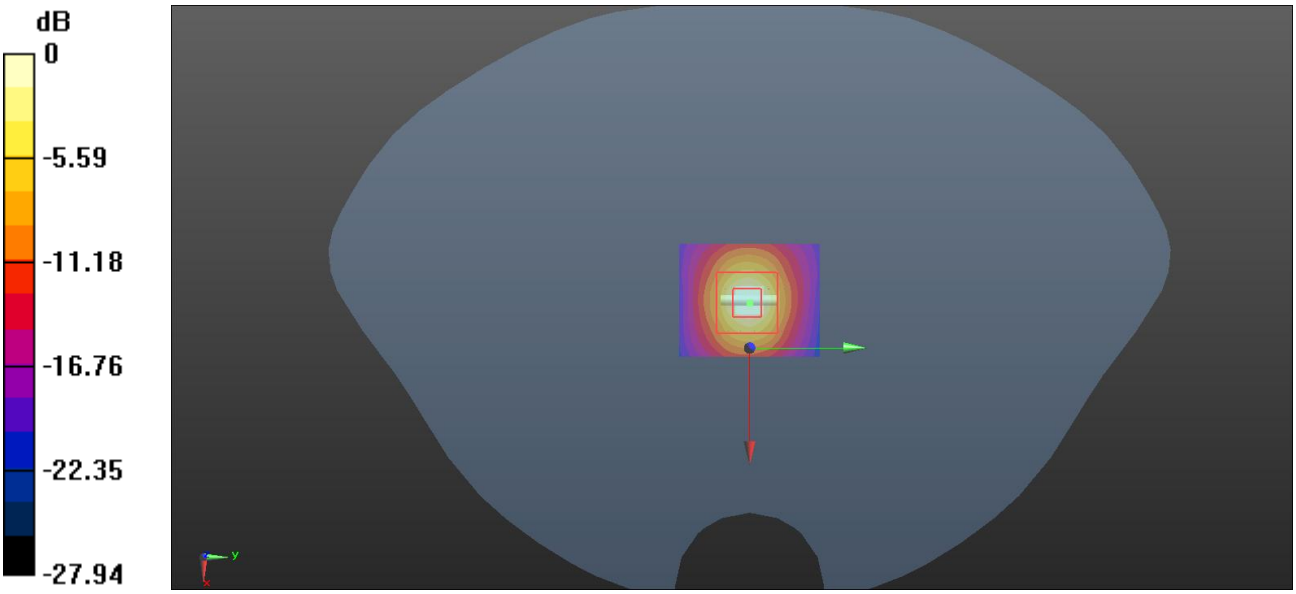
Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.395 S/m; ε_r = 34.628; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(3.93, 3.93, 3.93); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Area Scan (41x51x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 24.6 W/kg

Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 41.72 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 39.7 W/kg
SAR(1 g) = 7.96 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg = 13.38 dBW/kg

EUT TEST STRATEGY AND METHODOLOGY

Test positions for body Supported and other configurations

A typical example of a body supported device is a wireless enabled laptop device that among other orientations may be supported on the thighs of a sitting user. To represent this orientation, the device shall be positioned with its base against the flat phantom.Other orientations may be specified by the manufacturer in the user instructions. If the intended use is not specified, the device shall be tested directly against the flat phantom in all usable orientations

The screen portion of the device shall be in an open position at a 90 °angle as seen in Figure 7a (left side), or at an operating angle specified for intended use by the manufacturer in the operating instructions. Where a body supported device has an integral screen required for normal operation, then the screen-side will not need to be tested if it ordinarily remains 200 mm from the body. Where a screen mounted antenna is present, this position shall be repeated with the screen against the flat phantom as shown in Figure 7a) (right side), if this is consistent with the intended use.

Other devices that fall into this category include tablet type portable computers and credit card transaction authorisation terminals, point-of-sale and/or inventory terminals. Where these devices may be torso or limb-supported, the same principles for body-supported devices are applied.The example in Figure 7b) shows a tablet form factor portable computer for which SAR should be separately assessed with

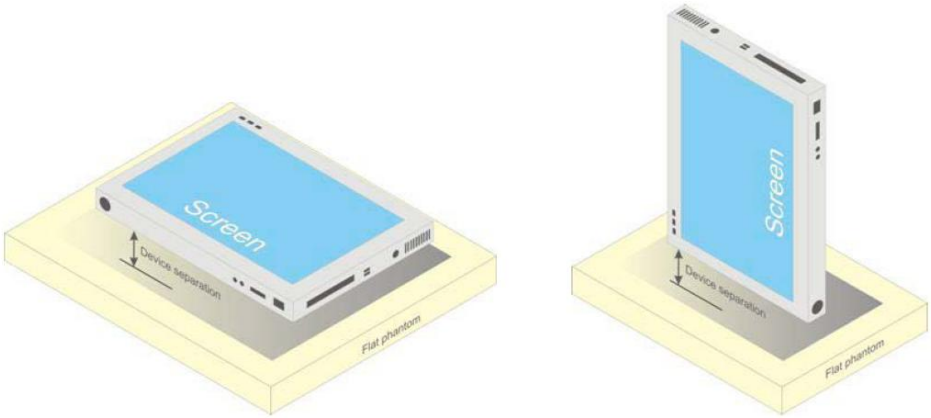
d) each surface and

e) the separation distances

positioned against the flat phantom that correspond to the intended use as specified by the manufacturer. If the intended use is not specified in the user instructions, the device shall be tested directly against the flat phantom in all usable orientations.

Some body-supported devices may allow testing with an external power supply (e.g. a.c.adapter) supplemental to the battery, but it shall be verified and documented in the measurement report that SAR is still conservative.

For devices that employ an external antenna with variable positions (e.g. swivel antenna), see 6.1.4.5 and Figure 6.



b) Tablet form factor portable computer

Test Distance for SAR Evaluation

For this case the EUT(Equipment Under Test) is set 0mm away from the phantom, the test distance is 0mm.

SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or radiating structures of the EUT, the horizontal grid spacing was 15 mm x 15 mm, and the SAR distribution was determined by integrated grid of 1.5mm x 1.5mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the “Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

CONDUCTED OUTPUT POWER MEASUREMENT

Maximum Target Output Power

Max Target Power(dBm)			
Mode/Band	Channel		
	Low	Middle	High
WLAN 2.4G	13.0	13.0	13.0
WLAN 5.2G	7.5	7.5	7.5
WLAN 5.8G	12.0	12.0	12.0
Bluetooth BDR/EDR	8.0	8.0	8.0
BLE	6.0	6.0	6.0

Test Results:

Wi-Fi 2.4G:

Mode	Channel frequency (MHz)	Data Rate	Conducted Average Output
802.11b	2412	1Mbps	12.71
	2442		12.14
	2472		12.23
802.11g	2412	6Mbps	8.00
	2442		7.21
	2472		7.10
802.11n HT20	2412	MCS0	6.75
	2442		5.92
	2472		6.03

Bluetooth:

Mode	Channel frequency (MHz)	RF Output Power (dBm)
BDR(GFSK)	2402	5.89
	2441	5.31
	2480	5.60
EDR(π/4-DQPSK)	2402	7.02
	2441	6.33
	2480	6.92
EDR(8DPSK)	2402	7.58
	2441	6.86
	2480	7.54
BLE(1M)	2402	5.84
	2440	4.56
	2480	4.90
BLE(2M)	2402	5.37
	2440	4.30
	2480	4.75

5.2G:

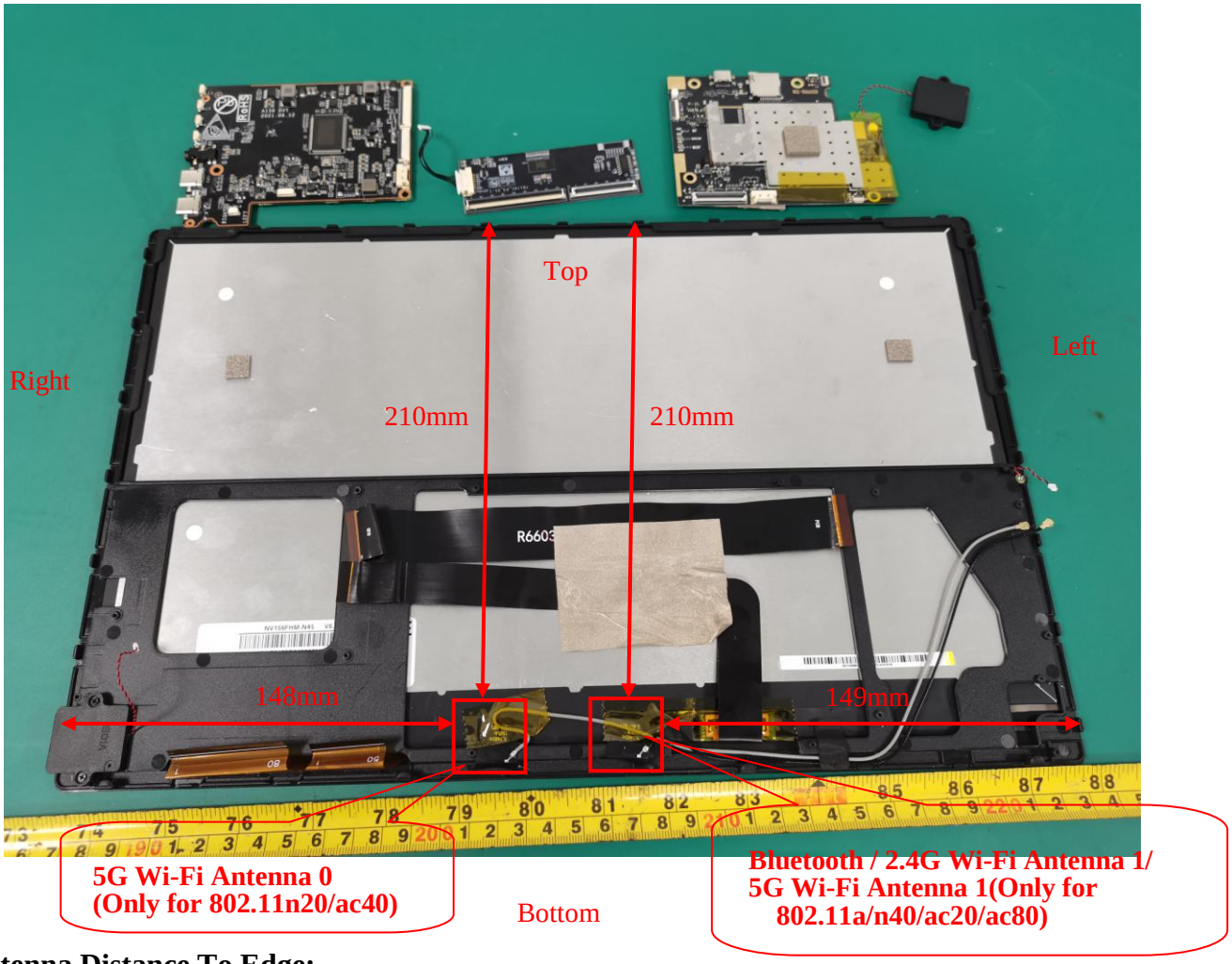
Frequency (MHz)	Conducted Average Output Power (dBm)
802.11a	
5180	6.61
5200	6.50
5240	5.23
802.11n20	
5180	7.10
5200	6.68
5240	5.59
802.11n40	
5190	6.59
5230	6.08
802.11ac20	
5180	6.96
5200	6.68
5240	5.44
802.11ac40	
5190	6.27
5230	6.05
802.11ac80	
5210	6.23

5.8G:

Frequency (MHz)	Conducted Average Output Power (dBm)
802.11a	
5745	11.25
5785	11.73
5825	11.28
802.11n20	
5745	10.28
5785	10.46
5825	10.42
802.11n40	
5755	9.45
5795	9.38
802.11ac20	
5745	8.32
5785	8.18
5825	8.45
802.11ac40	
5755	6.01
5795	6.16
802.11ac80	
5775	4.20

Standalone SAR test exclusion considerations

Antennas Location:



Antenna Distance To Edge:

Antenna Distance To Edge(mm)					
Antenna	**Back**	**Left**	**Right**	**Top**	**Bottom**
WLAN ANT 1	<5	149	198	210	<5
WLAN ANT 0	<5	203	148	210	<5

Standalone SAR test exclusion considerations

ANT 1:

Air-Interface	Freq. (MHz)	Max Tune up Power		Rear Face			Bottom Side		
		(dBm)	(mW)	Separation (mm)	Calculated Result	SAR Require	Separation (mm)	Calculated Result	SAR Require
WLAN 2.4G	2472	13	19.95	5	6.3	Yes	5	6.3	Yes
WLAN 5.2G	5240	7.5	5.62	5	2.6	No	5	2.6	No
WLAN 5.8G	5825	12	15.85	5	7.7	Yes	5	7.7	Yes
BT	2480	8	6.31	5	2.0	No	5	2.0	No

Air-Interface	Freq. (MHz)	Max Tune up Power		Right Side		Top Side		Left Side		SAR Require
		(dBm)	(mW)	Separation (mm)	Calculated Result	Separation (mm)	Calculated Result	Separation (mm)	Calculated Result	
WLAN 2.4G	2472	13	19.95	198	1575 mW	210	1695 mW	149	1085 mW	No
WLAN 5.2G	5240	7.5	5.62	198	1546 mW	210	1666 mW	149	1056 mW	No
WLAN 5.8G	5825	12	15.85	198	1542 mW	210	1662 mW	149	1052 mW	No
BT	2480	8	6.31	198	1575 mW	210	1695 mW	149	1085 mW	No

ANT 0:

Air-Interface	Freq. (MHz)	Max Tune up Power		Rear Face			Bottom Side		
		(dBm)	(mW)	Separation (mm)	Calculated Result	SAR Require	Separation (mm)	Calculated Result	SAR Require
WLAN 5.2G	5240	7.5	5.62	5	2.6	No	5	2.6	No
WLAN 5.8G	5825	12	15.85	5	7.7	Yes	5	7.7	Yes

Air-Interface	Freq. (MHz)	Max Tune up Power		Right Side		Top Side		Left Side		SAR Require
		(dBm)	(mW)	Separation (mm)	Calculated Result	Separation (mm)	Calculated Result	Separation (mm)	Calculated Result	
WLAN 5.2G	5240	7.5	5.62	148	1046 mW	210	1666 mW	203	1596 mW	No
WLAN 5.8G	5825	12	15.85	148	1042 mW	210	1662 mW	203	1592 mW	No

NOTE:

The 1-g and 10-g SAR test exclusion thresholds 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 and ≤7.5 for 10-g extremity SAR, where

1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

1. {[Power allowed at numeric threshold for 50 mm)] + [(test separation distance – 50 mm) ·10]} mW, for > 1500 MHz and ≤ 6 GHz

SAR test exclusion for the EUT edge considerations Result

Antenna Distance To Edge(mm)					
Mode	**Back**	**Left**	**Right**	**Top**	**Bottom**
Wi-Fi 2.4G	**Required**	Exclusion	Exclusion	Exclusion	**Required**
Wi-Fi 5.2G	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion
Wi-Fi 5.8G	**Required**	Exclusion	Exclusion	Exclusion	**Required**
BT	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion

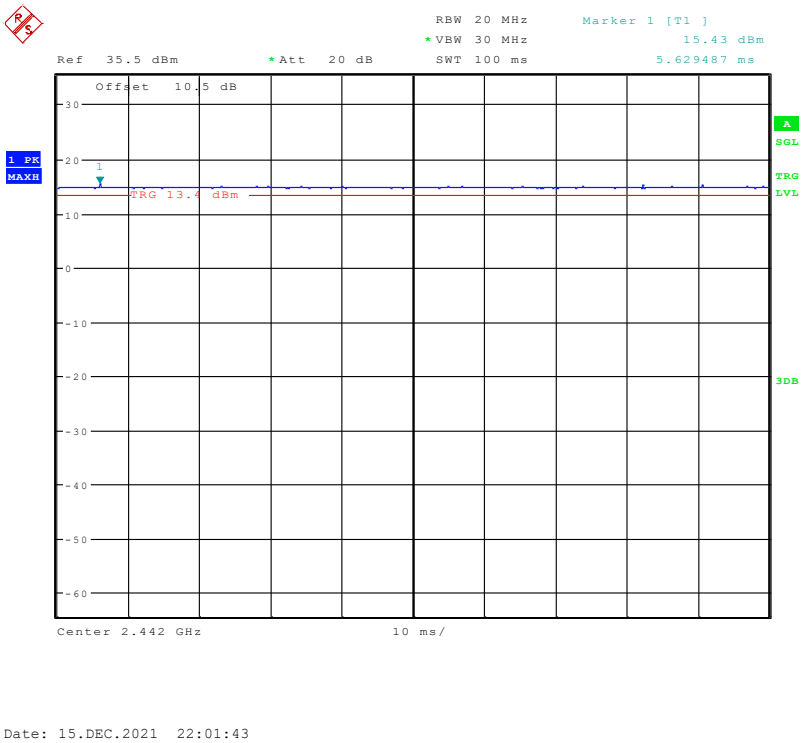
Note:
Required: SAR test exclusion evaluation has been done above, the SAR test is required.
Exclusion: SAR test exclusion evaluation has been done above; the SAR test is not required.

Duty Cycle Factor

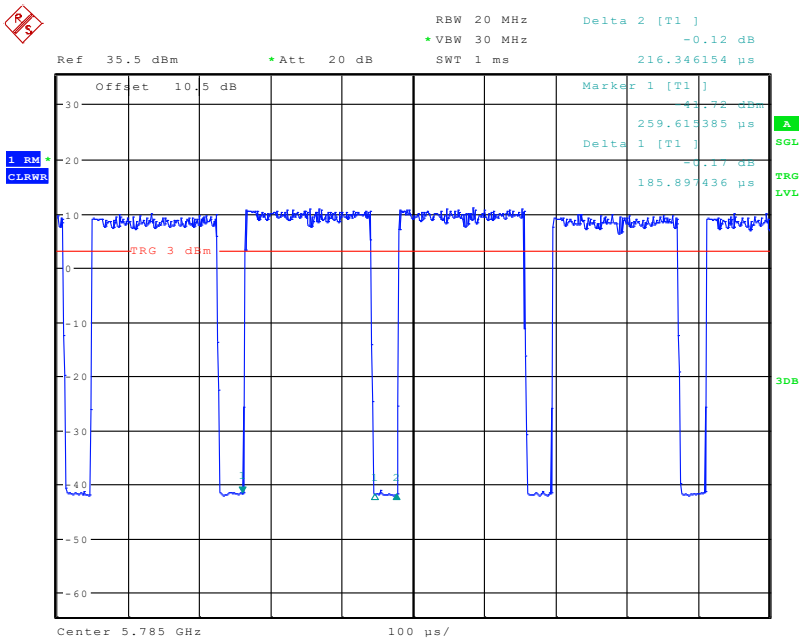
Band	Band	T(ms)	1/T(kHz)	Duty Cycle (%)
2412-2472 MHz	802.11 b	/	/	100
5725 – 5850MHz	802.11a	0.186	0.216	86.11
	802.11n20	0.173	0.204	84.80

Note: Duty cycle factor=10*log(1/duty cycle)

802.11b mode



802.11a mode



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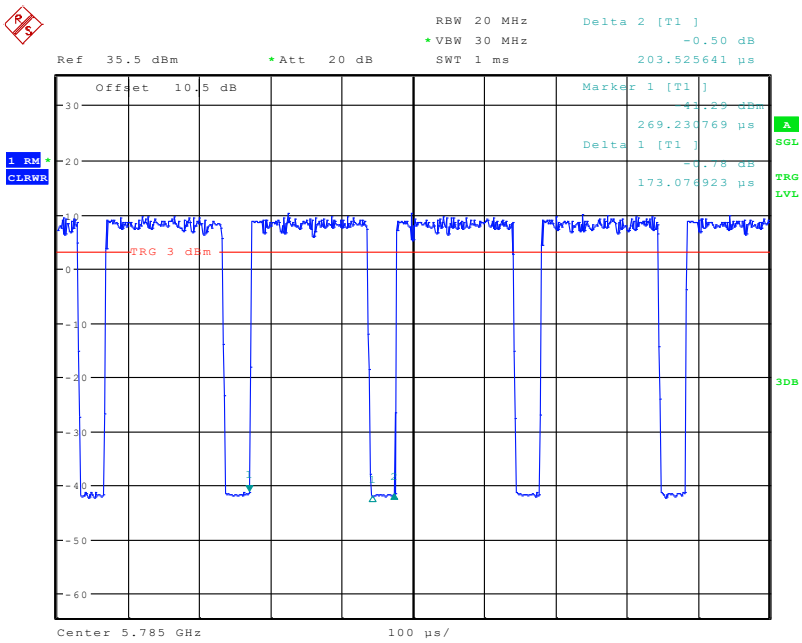
802.11n20 mode



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SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetric evaluation.

SAR Test Data

Environmental Conditions

Temperature:	21.9-24.0 ℃
Relative Humidity:	42-55 %
ATM Pressure:	101.4 kPa
Test Date:	2022/2/12

Testing was performed by Seven Liang, Jacky Yang

WLAN 2.4G:

ANT 1

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)					
					Power Scaled Factor	duty cycle %	Duty cycle Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	2412	802.11b	12.71	13.0	1.069	100%	1	0.525	0.56	1#
	2442	802.11b	/	/	/	/	/	/	/	/
	2472	802.11b	/	/	/	/	/	/	/	/
Body Bottom (0mm)	2412	802.11b	12.71	13.0	1.069	100%	1	0.476	0.51	2#
	2442	802.11b	/	/	/	/	/	/	/	/
	2472	802.11b	/	/	/	/	/	/	/	/

WLAN 5.8G:

ANT 0

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)					
					Power Scaled Factor	duty cycle %	Duty cycle Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	5745	802.11n-20	/	/	/			/	/	/
	5785	802.11n-20	10.46	12.0	1.426	84.8%	1.17	0.331	0.55	3#
	5825	802.11n-20	/	/	/		/	/	/	/
Body Bottom (0mm)	5745	802.11n-20	/	/	/		/	/	/	/
	5785	802.11n-20	10.46	12.0	1.426	84.8%	1.17	0.306	0.51	4#
	5825	802.11n-20	/	/	/			/	/	/

ANT 1

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)					
					Power Scaled Factor	duty cycle %	Duty cycle Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	5745	802.11a	/	/	/			/	/	/
	5785	802.11a	11.73	12.0	1.064	86.11%	1.16	0.448	0.55	5#
	5825	802.11a	/	/	/			/	/	/
Body Bottom (0mm)	5745	802.11a	/	/	/			/	/	/
	5785	802.11a	11.73	12.0	1.064	86.11%	1.16	0.421	0.52	6#
	5825	802.11a	/	/	/			/	/	/

Note:

1. When the 1-g SAR is≤ 0.8W/Kg, testing for other channels are optional.
2. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, OFDM SAR is not required.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. For SAR testing of WLAN/BT signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”.

SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Note: The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

The Highest Measured SAR Configuration in Each Frequency Band

Body

SAR probe calibration point	Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
				Original	Repeated	
/	/	/	/	/	/	/

Note:

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.
2. The measured SAR results **do not** have to be scaled to the maximum tune-up tolerance to determine if repeated measurements are required.
3. SAR measurement variability must be assessed for each frequency band, which is determined by the **SAR probe calibration point and tissue-equivalent medium** used for the device measurements.

SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities	
Transmitter Combination	**Simultaneous?**
WLAN + Bluetooth	×
WLAN + WLAN	×

SAR Plots

Test Plot 1#:Procedure Name: ANT1 WLAN 802.11b Low

DUT: Phoenix Note; Type: PPS2022-P156; Serial: RSNS211118-59299E-SA-S1

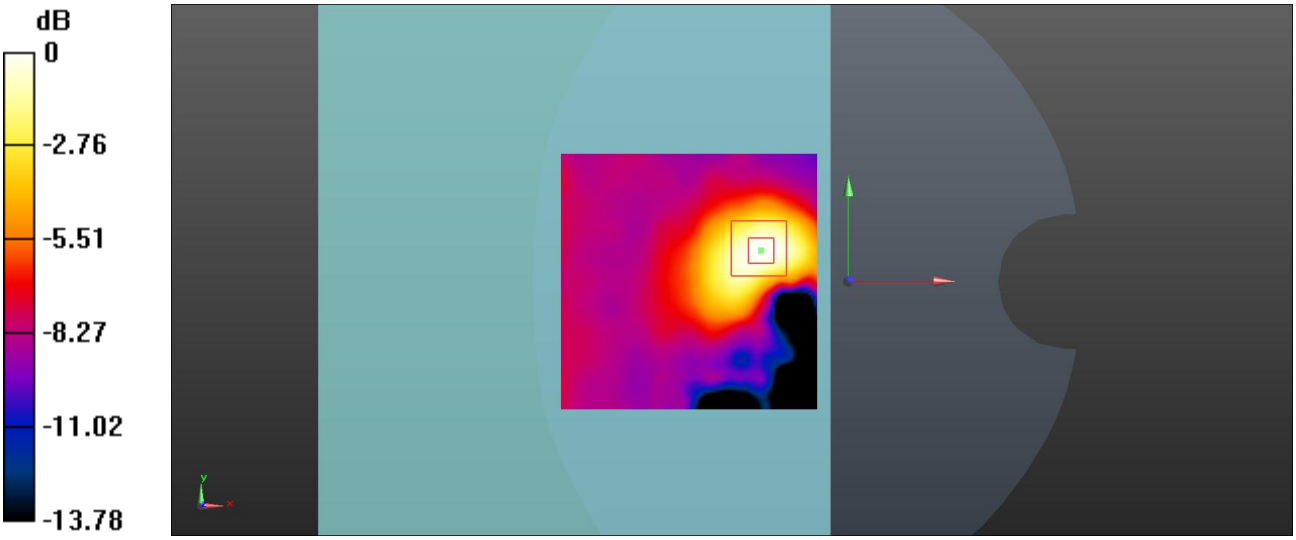
Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.763 S/m; ε_r = 39.247; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(6.69, 6.69, 6.69); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Body Back/ ANT1 WLAN 802.11b Low/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.658 W/kg

Body Back/ ANT1 WLAN 802.11b Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.072 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.525 W/kg; SAR(10 g) = 0.291 W/kg
Maximum value of SAR (measured) = 0.604 W/kg



0 dB = 0.604 W/kg = -2.19 dBW/kg

Test Plot 2#:Procedure Name: ANT1 WLAN 802.11b Low

DUT: Phoenix Note; Type: PPS2022-P156; Serial: RSNS211118-59299E-SA-S1

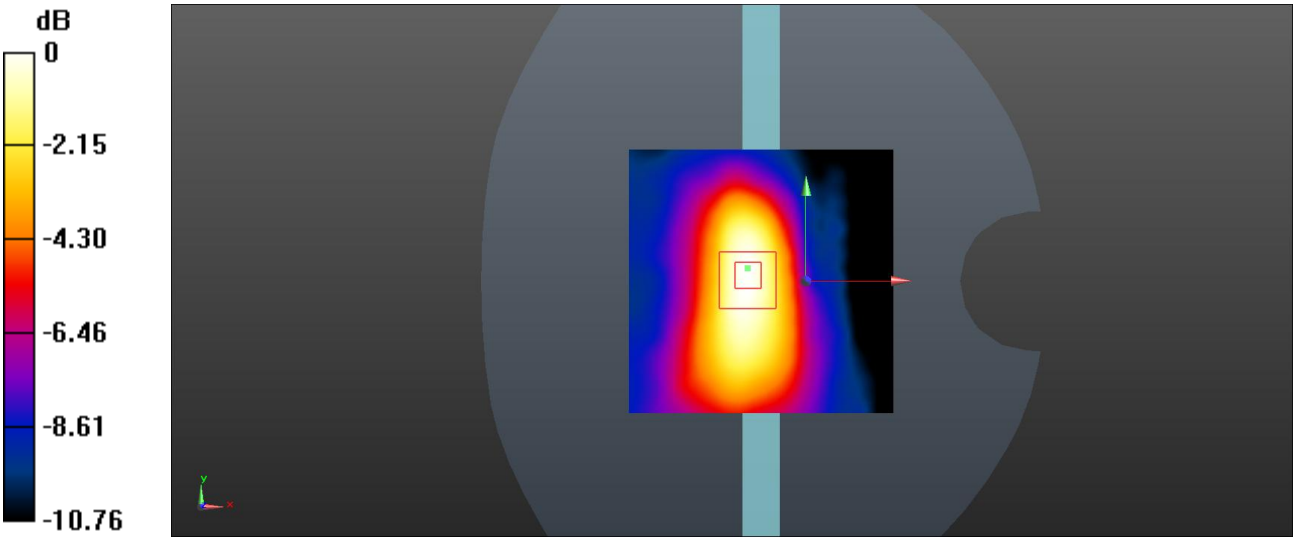
Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.763 S/m; ε_r = 39.247; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(6.69, 6.69, 6.69); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Body Bottom/ ANT1 WLAN 802.11b Low/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.757 W/kg

Body Bottom/ ANT1 WLAN 802.11b Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.191 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.917 W/kg
SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.139 W/kg
Maximum value of SAR (measured) = 0.737 W/kg



0 dB = 0.737 W/kg = -1.33 dBW/kg

Test Plot 3#:Procedure Name: ANT0 WLAN 5.8G 802.11n20 Mid

DUT: Phoenix Note; Type: PPS2022-P156; Serial: RSNS211118-59299E-SA-S1

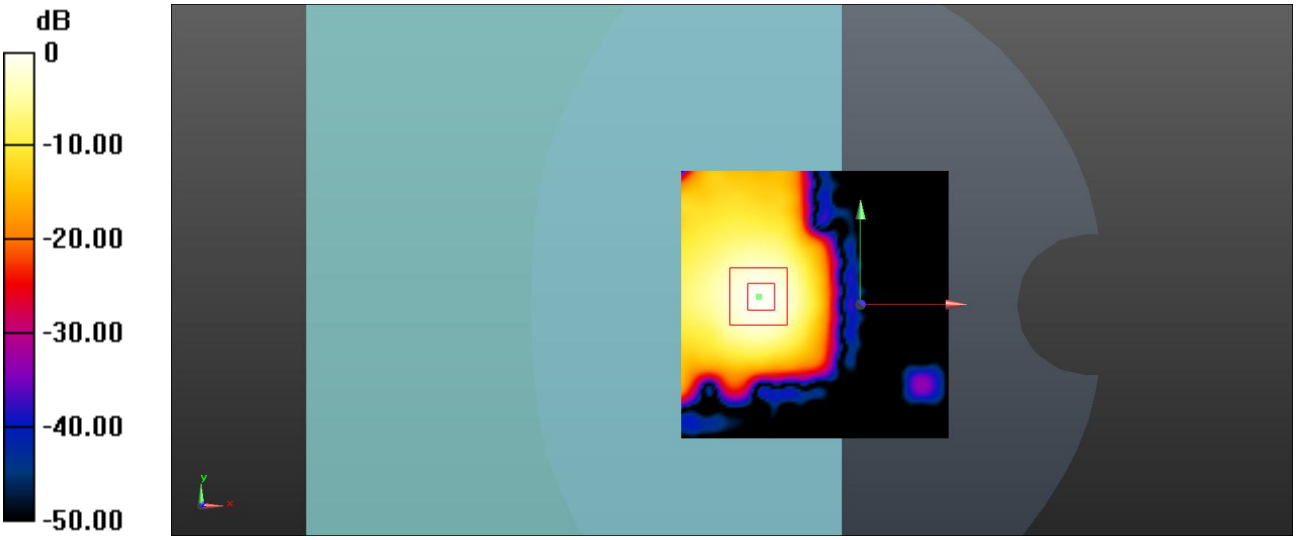
Communication System: UID 0, 5.8G Wi-Fi (0); Frequency: 5785 MHz;Duty Cycle: 1:1.17
Medium parameters used (interpolated): f = 5785 MHz; σ = 5.392 S/m; ε_r = 34.734; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(3.93, 3.93, 3.93); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Body Back/ ANT0 WLAN 5.8G 802.11n20 Mid/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.482 W/kg

Body Back/ ANT0 WLAN 5.8G 802.11n20 Mid/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.314 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.702 W/kg
SAR(1 g) = 0.331 W/kg; SAR(10 g) = 0.191 W/kg
Maximum value of SAR (measured) = 0.473 W/kg



0 dB = 0.473 W/kg = -3.25 dBW/kg

Test Plot 4#:Procedure Name: ANT0 WLAN 5.8G 802.11n20 Mid

DUT: Phoenix Note; Type: PPS2022-P156; Serial: RSNS211118-59299E-SA-S1

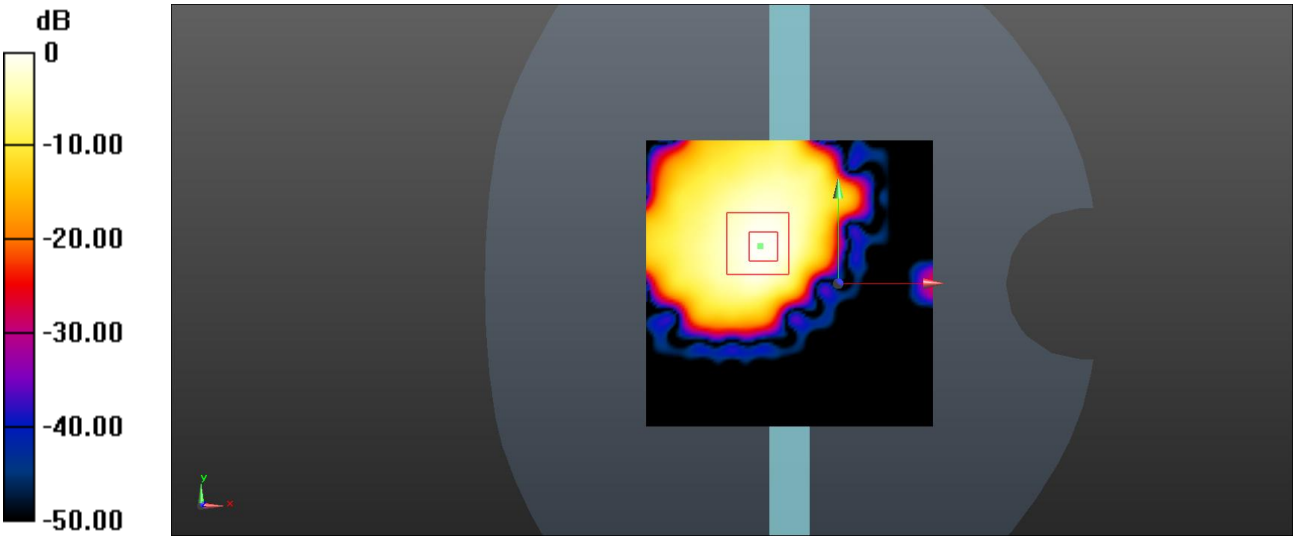
Communication System: UID 0, 5.8G Wi-Fi (0); Frequency: 5785 MHz;Duty Cycle: 1:1.17
Medium parameters used (interpolated): f = 5785 MHz; σ = 5.392 S/m; ε_r = 34.734; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(3.93, 3.93, 3.93); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Body Bottom/ ANT0 WLAN 5.8G 802.11n20 Mid/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.550 W/kg

Body Bottom/ ANT0 WLAN 5.8G 802.11n20 Mid/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.572 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.118 W/kg
Maximum value of SAR (measured) = 0.505 W/kg



0 dB = 0.505 W/kg = -2.97 dBW/kg

Test Plot 5#:Procedure Name: ANT1 WLAN 5.8G 802.11a Mid

DUT: Phoenix Note; Type: PPS2022-P156; Serial: RSNS211118-59299E-SA-S1

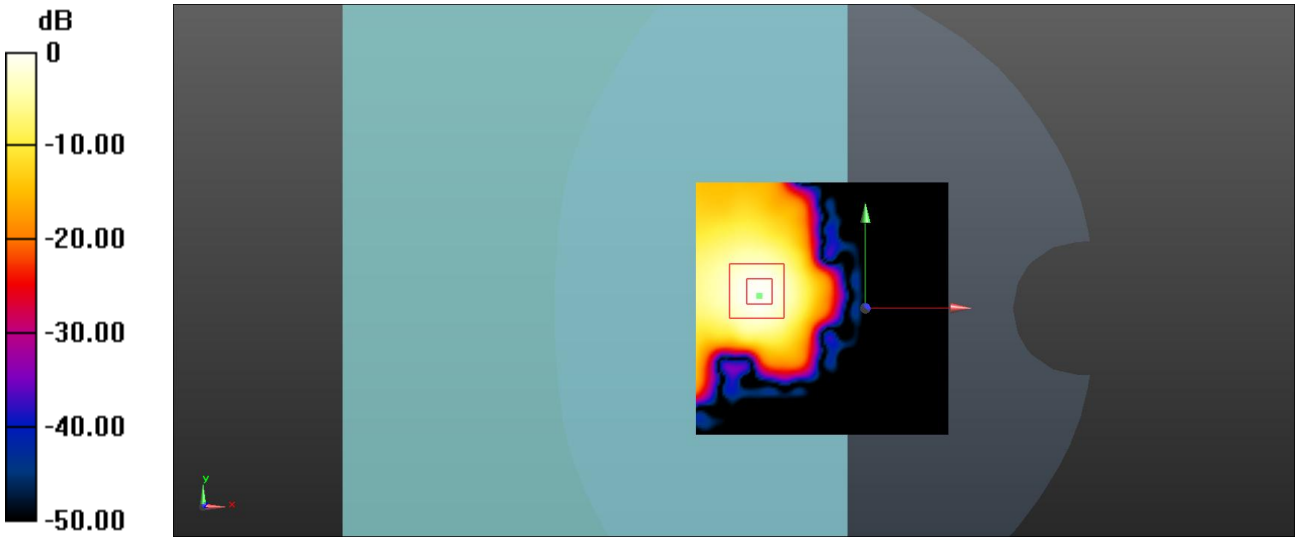
Communication System: UID 0, 5.8G Wi-Fi (0); Frequency: 5785 MHz;Duty Cycle: 1:1.16
Medium parameters used (interpolated): f = 5785 MHz; σ = 5.392 S/m; ε_r = 34.734; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(3.93, 3.93, 3.93); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Body Back/ ANT1 WLAN 5.8G 802.11a Mid/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.678 W/kg

Body Back/ ANT1 WLAN 5.8G 802.11a Mid/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.798 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.954 W/kg
SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.206 W/kg
Maximum value of SAR (measured) = 0.659 W/kg



0 dB = 0.659 W/kg = -1.81 dBW/kg

Test Plot 6#:Procedure Name: ANT1 WLAN 5.2G 802.11a Mid

DUT: Phoenix Note; Type: PPS2022-P156; Serial: RSNS211118-59299E-SA-S1

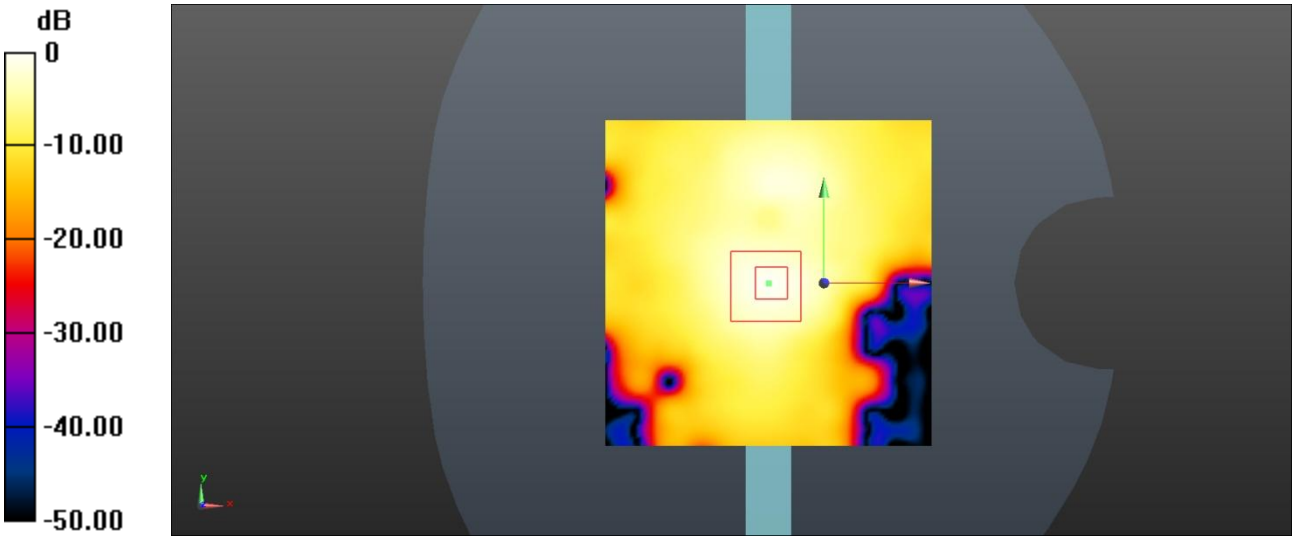
Communication System: UID 0, 5.8G Wi-Fi (0); Frequency: 5785 MHz;Duty Cycle: 1:1.16
Medium parameters used (interpolated): f = 5785 MHz; σ = 5.392 S/m; ε_r = 34.734; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3619; ConvF(3.93, 3.93, 3.93); Calibrated: 2021/08/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/12/13
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Body Bottom/ ANT1 WLAN 5.8G 802.11a Mid/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.620 W/kg

Body Bottom/ ANT1 WLAN 5.8G 802.11a Mid/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.295 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.724 W/kg
SAR(1 g) = 0.421 W/kg; SAR(10 g) = 0.242 W/kg
Maximum value of SAR (measured) = 0.601 W/kg



0 dB = 0.601 W/kg = -2.21 dBW/kg

APPENDIX A MEASUREMENT UNCERTAINTY

KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report

APPENDIX B EUT TEST POSITION PHOTOS

Please Refer to the Attachment.

APPENDIX C PROBE CALIBRATION CERTIFICATES

Please Refer to the Attachment.

APPENDIX D DIPOLE CALIBRATION CERTIFICATES

Please Refer to the Attachment.

******* END OF REPORT *******