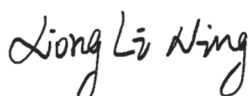


# TEST REPORT

**Applicant:** Realtek Semiconductor Corp.  
**Address:** No. 2, Innovation Road II, Hsinchu Science Park,  
Hsinchu 300, Taiwan  
**Equipment Type:** 11ax RTL8852CE Combo module  
**Model Name:** RTL8852CE  
**Brand Name:** N/A  
**FCC ID:** TX2-RTL8852CE  
**Test Standard:** FCC 47 CFR Part 2.1093  
(refer to section 3.1)  
**Maximum SAR:** Body 2.4GHz(1 g): 0.54 W/kg  
Body 5GHz(1 g): 1.01 W/kg  
Body 6GHz(1 g): 1.14 W/kg  
Limbs 2.4GHz(10 g): 0.49 W/kg  
Limbs 5GHz(10 g): 1.20 W/kg  
Limbs 6GHz(10 g): 0.40 W/kg  
**Sample Arrival Date:** Nov. 06, 2023  
**Test Date:** Dec. 09, 2023 - Dec. 13, 2023  
**Date of Issue:** Dec. 27, 2023

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu

(Testing Director)



<b>Revision History</b>		
Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Dec. 27, 2023</u>	<u>Initial Issue</u>

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# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

## 1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	<input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	<input type="checkbox"/> 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

## 1.3 Test Environment Condition

Ambient Temperature	18°C to 25°C
Ambient Relative Humidity	30% to 70%

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	Realtek Semiconductor Corp.
Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

### 2.2 Manufacturer Information

Manufacturer	Realtek Semiconductor Corp.
Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

### 2.3 General Description for Equipment under Test (EUT)

EUT Name	11ax RTL8852CE Combo module
Model Name Under Test	RTL8852CE
Series Model Name	N/A
Description of Model Name Differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

#### 2.3.1 Host Information:

Product Name	Notebook Computer
Model Name	IdeaPad 5 2-in-1 16AHP9
Brand Name	Lenovo

### 2.3.2 Antenna Information:

Antenna Port	Model Name	Antenna Manufacturer	Antenna Type	Antenna Gain (dBi)								
				2.4 GHz	5.15 - 5.25 GHz	5.25 - 5.35 GHz	5.47 - 5.725 GHz	5.725 - 5.895 GHz	5.925 - 6.425 GHz	6.425 - 6.525 GHz	6.525 - 6.875 GHz	6.875 - 7.125 GHz
Main Antenna	AYP6Y-100469	AWAN	PIFA	2.26	3.16	3.08	2.43	3.22	2.85	3.88	3.14	2.25
Auxiliary Antenna	AYP6Y-100470		PIFA	2.16	3.41	3.33	2.89	3.82	3.38	3.40	3.40	3.53
Main Antenna	3.N201.0263	South Star	PIFA	1.79	2.31	1.52	2.73	2.61	2.83	2.29	1.82	1.77
Auxiliary Antenna	3.N201.0264		PIFA	1.69	1.87	2.28	2.82	3.18	2.86	3.18	2.21	2.97

## 2.4 Ancillary Equipment

Note: Not applicable.

## 2.5 Technical Information

Network and Wireless connectivity	Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40), VHT20/40 and 802.11ax(HE20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80/160) and 802.11ax(HE20/40/80/160), U-NII-1/2A/2C/3/4 6G WIFI 802.11ax(HE20/40/80/160), U-NII-5/6/7/8
-----------------------------------	---

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	2.4G WLAN, 5G WLAN, 6G WLAN, Bluetooth	
Frequency Range	802.11b/g	2412 MHz ~ 2472 MHz
	VHT20/VHT40	2412 MHz ~ 2472 MHz
	802.11ax(HE20/HE40)	2412 MHz ~ 2472 MHz
	802.11a	5150 MHz ~ 5250 MHz
		5250 MHz ~ 5350 MHz
		5470 MHz ~ 5725 MHz
		5725 MHz ~ 5850 MHz
		5850 MHz ~ 5895 MHz
	802.11n(HT20/HT40)	5150 MHz ~ 5250 MHz
		5250 MHz ~ 5350 MHz
		5470 MHz ~ 5725 MHz
		5725 MHz ~ 5850 MHz
		5850 MHz ~ 5895 MHz
	802.11ac(VHT20/VHT40/VHT80)	5150 MHz ~ 5250 MHz
		5250 MHz ~ 5350 MHz
		5470 MHz ~ 5725 MHz
		5725 MHz ~ 5850 MHz
		5850 MHz ~ 5895 MHz
	802.11ax(HE20/HE40/HE80)	5150 MHz ~ 5250 MHz
		5250 MHz ~ 5350 MHz
5470 MHz ~ 5725 MHz		
5725 MHz ~ 5850 MHz		
5850 MHz ~ 5895 MHz		
802.11ac(VHT160)/ax(HE160)	5150 MHz ~ 5250 MHz	
	5470 MHz ~ 5725 MHz	
	5850 MHz ~ 5895 MHz	
802.11ax(HE20/HE40/HE80/HE160)	5925 MHz ~ 6425 MHz	
	6425 MHz ~ 6525 MHz	
	6525 MHz ~ 6875 MHz	
	6875 MHz ~ 7125 MHz	
Bluetooth	2402 MHz ~ 2480 MHz	
Antenna Type	WLAN: PIFA Antenna Bluetooth: PIFA Antenna	
Hotspot Function	N/A	

Exposure Category	General Population/Uncontrolled exposure	
Product Type	Portable Device	
EUT Type	<input checked="" type="checkbox"/> Production unit	<input type="checkbox"/> Identical prototype



### 3 SUMMARY OF TEST RESULT

#### 3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	ANSI C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01
4	KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
5	KDB 865664 D02 v01r02	RF Exposure Reporting
6	KDB 248227 D01 v02r02	SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters
7	KDB 616217 D04v01r02	SAR for laptop and tablets
8	IEC/IEEE 62209- 1528:2020	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)

### 3.2 Device Category and SAR Limit

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.

Table of Exposure Limits:

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ Controlled Exposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (averaged over any 10 grams of tissue)	4.0	20.0

NOTE:

**General Population/Uncontrolled Exposure:** Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

**Occupational/Controlled Exposure:** Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

### 3.3 Test Result Summary

#### 3.3.1 Highest SAR (1 g Value)

Equipment Class	Band	Antenna	Maximum Scaled SAR (W/kg)	Maximum Report SAR (W/kg)
			Body (0mm)	Body (0mm)
DTS	2.4G WLAN	SISO-Aux.	0.42	<b>1.14</b>
	2.4G WLAN	SISO-Main	0.54	
U-NII-2A	5.3G WLAN	SISO-Aux.	1.01	
	5.3G WLAN	SISO-Main	0.45	
U-NII-2C	5.6G WLAN	SISO-Aux.	0.60	
	5.6G WLAN	SISO-Main	0.79	
U-NII-3	5.8G WLAN	SISO-Aux.	0.49	
	5.8G WLAN	SISO-Main	0.86	
U-NII-4	5.9G WLAN	SISO-Aux.	0.49	
	5.9G WLAN	SISO-Main	0.70	
U-NII-5/6/7/8	6G WLAN	SISO-Aux.	0.77	
	6G WLAN	SISO-Main	<b>1.14</b>	
DSSS	Bluetooth	Aux.	0.26	
Limit (W/kg)			1.60	
Verdict			Pass	

#### 3.3.2 Highest SAR (10 g Value)

Equipment Class	Band	Antenna	Maximum Scaled SAR (W/kg)	Maximum Report SAR (W/kg)
			Limbs (0mm)	Limbs (0mm)
DTS	2.4G WLAN	SISO-Aux.	0.43	<b>1.20</b>
	2.4G WLAN	SISO-Main	0.49	
U-NII-2A	5.3G WLAN	SISO-Aux.	0.45	
	5.3G WLAN	SISO-Main	0.72	
U-NII-2C	5.6G WLAN	SISO-Aux.	0.46	
	5.6G WLAN	SISO-Main	0.69	
U-NII-3	5.8G WLAN	SISO-Aux.	0.90	
	5.8G WLAN	SISO-Main	<b>1.20</b>	
U-NII-4	5.9G WLAN	SISO-Aux.	0.67	
	5.9G WLAN	SISO-Main	0.71	
U-NII-5/6/7/8	6G WLAN	SISO-Aux.	0.25	
	6G WLAN	SISO-Main	0.40	
DSSS	Bluetooth	Aux.	0.13	
Limit (W/kg)			4.00	
Verdict			Pass	

### 3.3.3 Highest Simultaneous Transmission SAR Values (1 g Value)

Equipment Class	Maximum Report SAR (W/kg)		SPLSR
	Body(0mm)		
	1g SAR		
DTS	1.54		/
NII	<b>1.90</b>		0.01
DSSS	1.40		/
Limit (W/Kg)	1.60		0.04
Verdict	Pass		Pass

Note: The simultaneous transmission SAR detail please refer to section 12.

### 3.3.4 Highest Simultaneous Transmission SAR Values (10 g Value)

Equipment Class	Maximum Report SAR (W/kg)		SPLSR
	Limbs (0mm)		
	1g SAR		
DTS	1.63		/
NII	<b>2.10</b>		/
DSSS	1.33		/
Limit (W/Kg)	4.00		/
Verdict	Pass		Pass

Note: The simultaneous transmission SAR detail please refer to section 12.

### 3.4 Test Uncertainty

According to KDB 865664 D01, when the highest measured 1 g SAR within a frequency band is  $< 1.5$  W/kg, the extensive SAR measurement uncertainty analysis is not required in SAR reports submitted for equipment approval.

The maximum 1 g SAR for the EUT in this report is 1.14 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

The maximum 10 g SAR for the EUT in this report is 1.20 W/kg, which is lower than 3.75 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

## 4 MEASUREMENT SYSTEM

### 4.1 Specific Absorption Rate (SAR) Definition

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

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

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

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

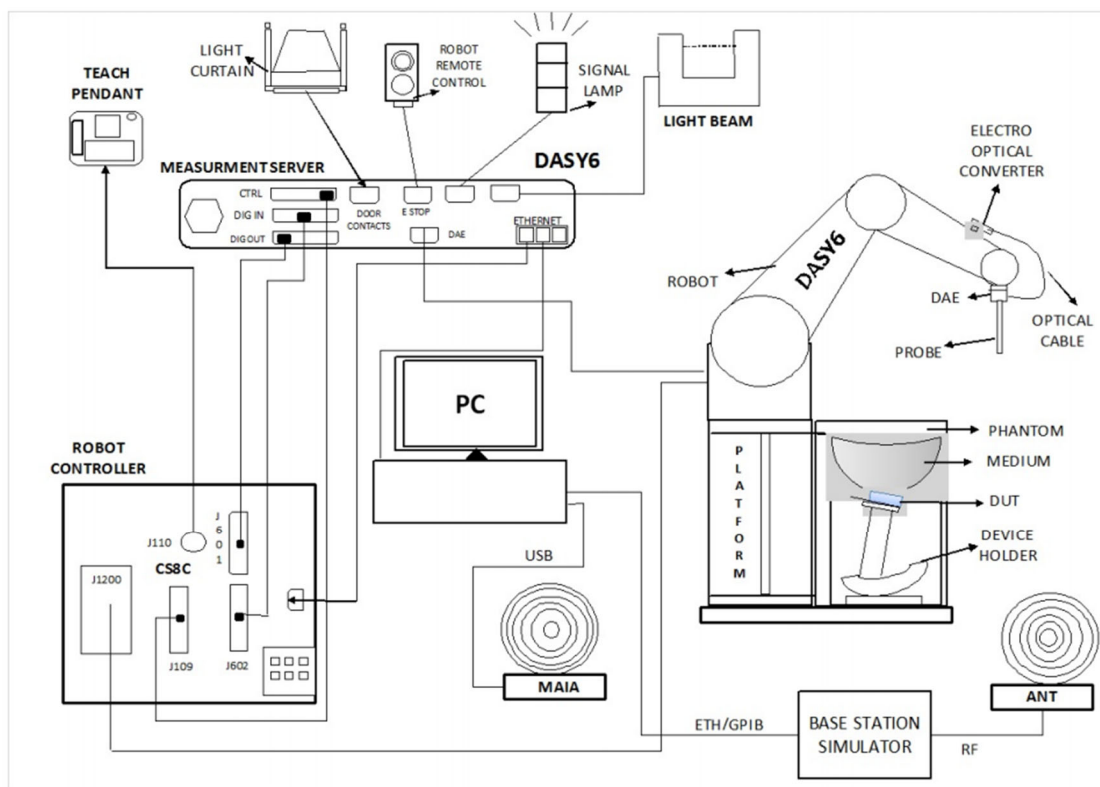
$$SAR = \frac{\sigma E^2}{\rho}$$

Where:  $\sigma$  is the conductivity of the tissue,

$\rho$  is the mass density of the tissue and  $E$  is the RMS electrical field strength.

## 4.2 DASY SAR System

### 4.2.1 DASY SAR System Diagram

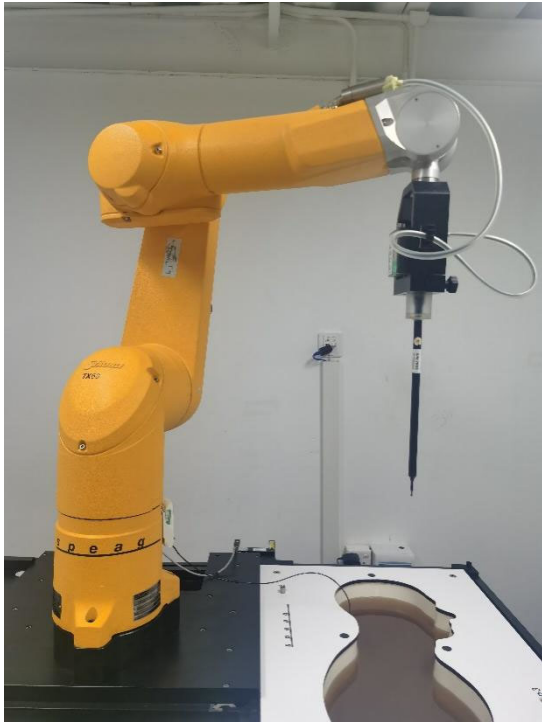


The DASY system for performing compliance tests consists of the following items:

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 in tissue 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 DASY measurement server.
6. The DASY measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
7. DASY 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.

## 4.2.2 Robot

The Dasy SAR system uses the high precision robots. Symmetrical design with triangular core Built-in optical fiber for surface detection system For the 6-axis controller system, Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents). The robot series have many features that are important for our application:



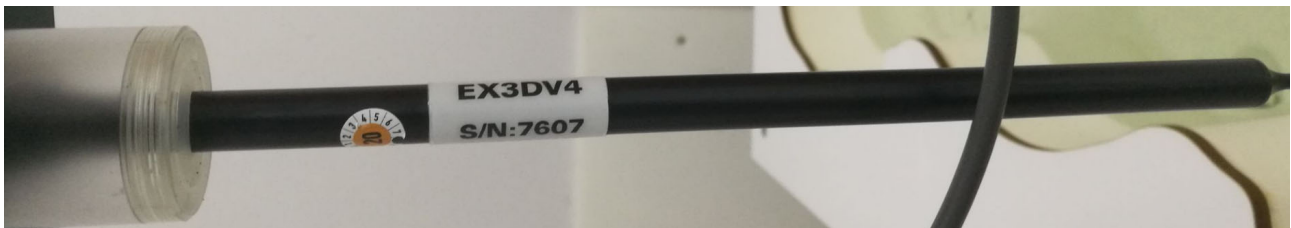
- High precision  
(repeatability  $\pm 0.02$  mm)
- High reliability  
(industrial design)
- Low maintenance costs  
(virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements  
(brush less synchron motors; no stepper motors)
- Low ELF interference  
(motor control fields shielded via the closed metallic construction shields)



### 4.2.3 E-Field Probe

The probe is specially designed and calibrated for use in liquids with high permittivities for the measurements the Specific Dosimetric E-Field Probe EX3DV4- SN: 7607 with following specifications is used.

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycoether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	4 MHz to 10 GHz; Linearity: $\pm 0.2$ dB
Directivity	$\pm 0.2$ dB in HSL (rotation around probe axis) ; $\pm 0.4$ dB in HSL (rotation normal to probe axis)
Dynamic range	5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB
Dimensions	Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms (EX3DV4)



#### E-Field Probe Calibration Process

Probe calibration is realized, in compliance with IEC/IEEE 62209-1528 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the IEC/IEEE 62209-1528 annexe technique using reference guide at the five frequencies.

#### 4.2.4 Data Acquisition Electronics

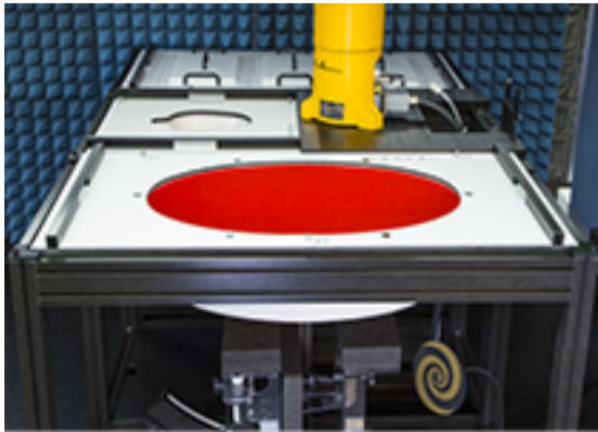
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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



- Input Impedance: 200M $\Omega$ m
- The Inputs: Symmetrical and Floating
- Commom Mode Rejection: Above 80dB

#### 4.2.5 Phantoms

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of below 10 GHz. ELI V8.0 is fully compatible with the latest draft of the standard IEC 62209 Part II and all known tissue simulating liquids. ELI V8.0 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.



· Flat phantom

**Photo of Phantom SN2159**



Serial Number	Shell Thickness (mm)	Major ellipse axis (mm)	Minor axis(mm)
SN 2159 ELI V8.0	2.0 ± 0.2	600	400

#### 4.2.6 Device Holder

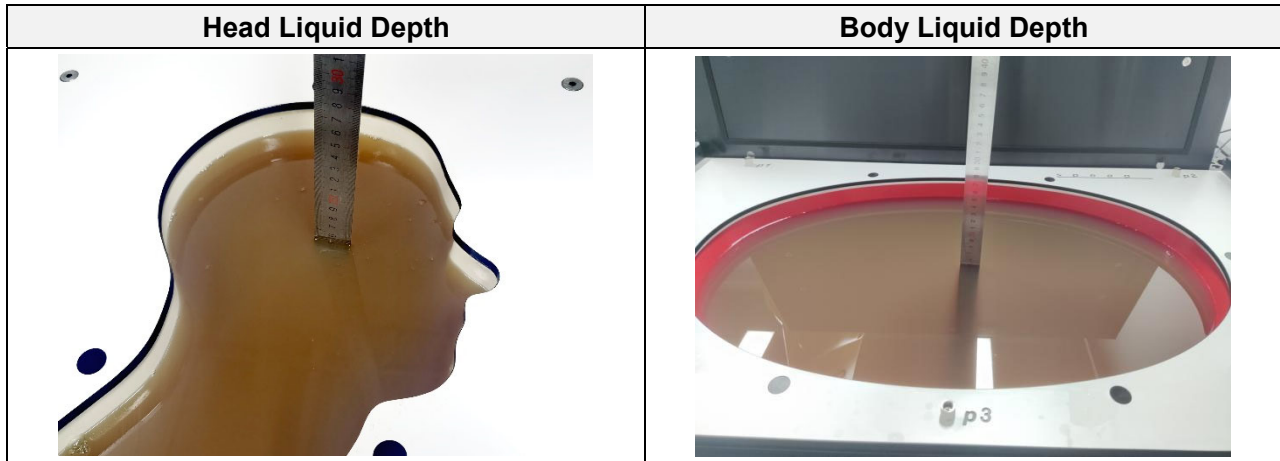
The DASY device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of  $65^\circ$ . The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard mobile phones or PDA"s only. If necessary an additional support of polystyrene material is used. Larger DUT"s (e.g. notebooks) cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values. Therefore those devices are normally only tested at the flat part of the SAM.



The positioning system allows obtaining cheek and tilting position with a very good accuracy. Incompliance with CENELEC, the tilt angle uncertainty is lower than  $1^\circ$ .

#### 4.2.7 Simulating Liquid

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



The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

The following table gives the recipes for tissue simulating liquid.

TSL	Manufacturer / Model	Freq Range (MHz)	Main Ingredients
Head WideBand	SPEAG HBBL600-10000V6	600-10000	Ethanediol, Sodium petroleum sulfonate, Hexylene Glycol / 2-Methyl-pentane-2.4-diol, Alkoxyated alcohol

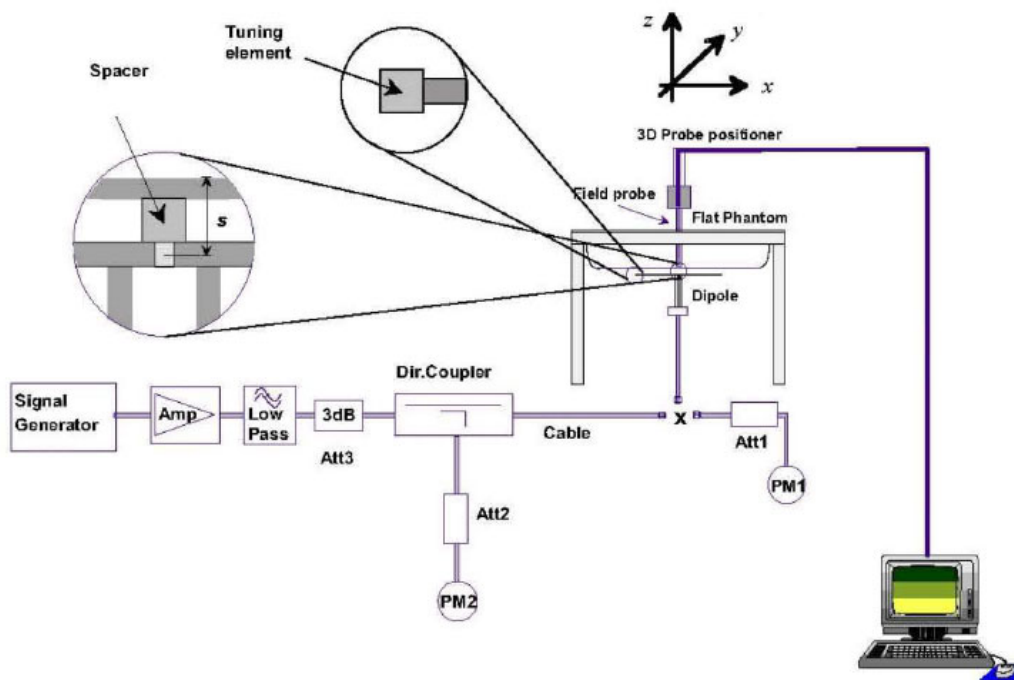
## 5 SYSTEM VERIFICATION

### 5.1 Purpose of System Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

### 5.2 System Check Setup

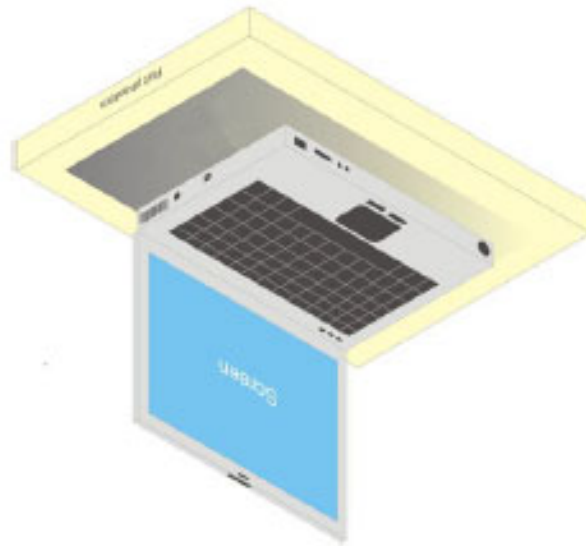
In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



## 6 TEST POSITION CONFIGURATIONS

### 6.1 Laptop Exposure Condition

This DUT should consider one position which is bottom of laptop touching with phantom 0 mm air gap and the screen portion of the device shall be an open position at a 90° angle.



## 6.2 Tablet Exposure Condition

This DUT was tested in two different positions. They are back side and top edge in these positions, the surface of DUT is touching with phantom 0mm.

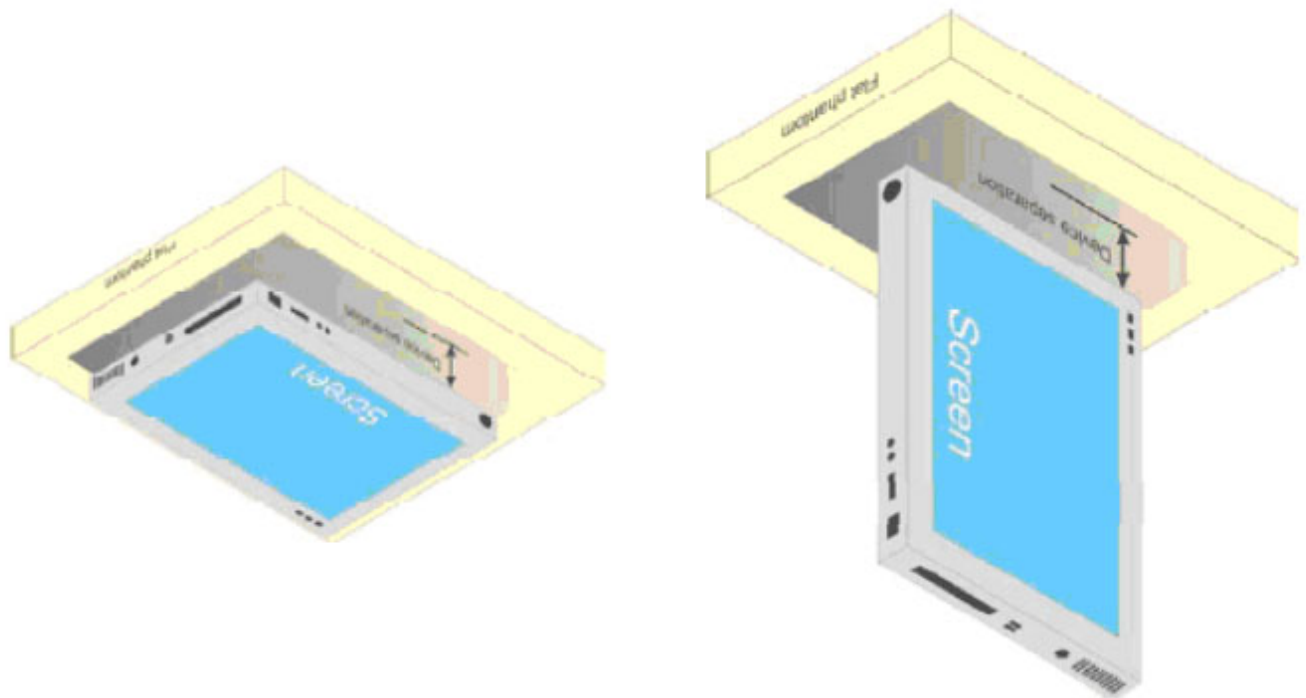
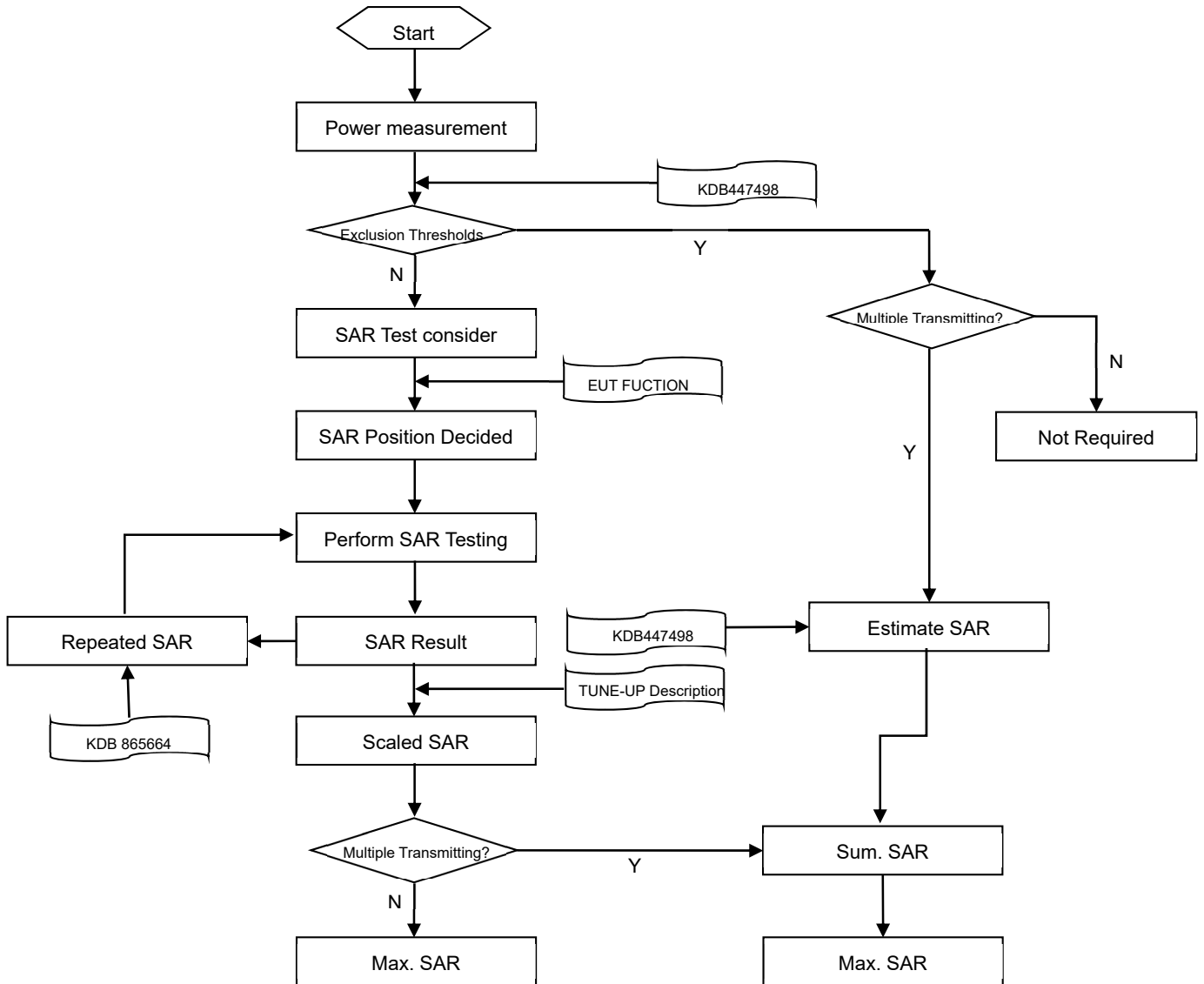


Fig Illustration for Lap-touching Position



# 7 MEASUREMENT PROCEDURE

## 7.1 Measurement Process Diagram



## 7.2 SAR Scan General Requirement

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1 g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013.

		≤3GHz	>3GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		5±1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location		30°±1°	20°±1°
Maximum area scan spatial resolution: $\Delta x$ Area, $\Delta y$ Area		≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3–4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x$ Zoom, $\Delta y$ Zoom		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3–4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z$ Zoom (n)	≤ 5 mm	3–4 GHz: ≤ 4 mm
			4–5 GHz: ≤ 3 mm
			5–6 GHz: ≤ 2 mm
	graded grid	$\Delta z$ Zoom (1): between 1st two points closest to phantom surface	≤ 4 mm
4–5 GHz: ≤ 2.5 mm			
	$\Delta z$ Zoom (n>1): between subsequent points	≤ 1.5· $\Delta z$ Zoom (n-1)	
Minimum zoom scan volume	x, y, z	≥30 mm	3–4 GHz: ≥ 28 mm
			4–5 GHz: ≥ 25 mm
			5–6 GHz: ≥ 22 mm

### Note:

- $\delta$  is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
- \* When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

### 7.3 Measurement Procedure

The following steps are used for each test position

- a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- c. Measurement of the SAR distribution with a grid of 8 to 16mm \* 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- d. Around this point, a cube of 30 \* 30 \* 30 mm or 32 \* 32 \* 32 mm is assessed by measuring 5 or 8 \* 5 or 8\*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

### 7.4 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below.

When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

### 7.5 Interim Procedures for WLAN 6E

Interim procedures for FCC radio frequency (RF) exposure evaluations of U-NII 6-7 GHz band portable devices have been made available during the TCB workshop in April 2021. The procedure is summarized below:

- a. Evaluate SAR / APD with DASY6 Module SAR V16.0 or higher. The configurations to be tested are defined in the relevant Knowledge Database (KDB). The psSAR and absorbed psPD are reported.
- b. For the configuration with the highest SAR, evaluate the incident power density with DASY6 Module mmWave V2.4.2 or higher. The incident psPD must be adjusted per amount that the measurement uncertainty exceeds 30% before it is included in the test report.

## 8 CONDUCTED RF OUPUT POWER

### 8.1 WIFI

#### 8.1.1 2.4G WIFI (SISO-Main Antenna) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	14.99	15.50	Yes
		6	2437	15.01	15.50	Yes
		10	2457	15.11	15.50	No
		11	2462	<b>14.98</b>	15.50	Yes
		12	2467	15.47	15.50	No
		13	2472	11.97	13.00	No
	802.11g	1	2412	14.92	15.50	No
		2	2417	14.87	15.50	No
		6	2437	14.88	15.50	No
		10	2457	15.16	15.50	No
		11	2462	15.04	15.50	No
		12	2467	15.18	15.50	No
		13	2472	14.81	15.50	No
	VHT20	1	2412	14.80	15.50	No
		2	2417	14.88	15.50	No
		6	2437	15.46	15.50	No
		10	2457	15.14	15.50	No
		11	2462	15.02	15.50	No
		12	2467	15.06	15.50	No
		13	2472	10.43	11.00	No
	VHT40	3	2422	14.87	15.50	No
		6	2437	15.04	15.50	No
		9	2452	14.99	15.50	No
		10	2457	15.06	15.50	No
		11	2462	14.85	15.50	No
	802.11ax(HE20) (SU)	1	2412	15.17	15.50	No
		2	2417	14.93	15.50	No
		6	2437	14.91	15.50	No
		10	2457	15.14	15.50	No
		11	2462	14.84	15.50	No
		12	2467	14.85	15.50	No
		13	2472	10.56	11.00	No
	802.11ax(HE40)	3	2422	15.11	15.50	No

	(SU)	6	2437	15.15	15.50	No
		9	2452	15.19	15.50	No
		10	2457	15.06	15.50	No
		11	2462	14.97	15.50	No
	802.11ax(HE20) (RU26)	1	2412	15.07	15.50	No
		6	2437	14.96	15.50	No
		11	2462	12.64	13.00	No
		12	2467	8.14	9.00	No
		13	2472	-3.52	-3.00	No
	802.11ax(HE20) (RU52)	1	2412	14.98	15.50	No
		6	2437	14.98	15.50	No
		11	2462	14.75	15.50	No
		12	2467	10.29	11.00	No
		13	2472	2.45	3.00	No
	802.11ax(HE20) (RU106)	1	2412	15.07	15.50	No
		6	2437	14.83	15.50	No
		11	2462	15.49	15.50	No
		12	2467	13.36	15.00	No
		13	2472	5.34	6.00	No

Note: According KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.

Adjusted SAR = Report SAR \* (max power (OFDM)/ max power (DSSS)) = 0.366 \* (35.48mW/35.48mW) = 0.366 W/Kg, so the 2.4G OFDM SAR test is not required.

## 8.1.2 2.4G WIFI (SISO-Aux. Antenna) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	<b>15.11</b>	16.00	Yes
		6	2437	14.99	16.00	Yes
		10	2457	15.69	16.00	No
		11	2462	15.22	16.00	Yes
		12	2467	15.80	16.00	No
		13	2472	12.54	13.00	No
	802.11g	1	2412	15.44	16.00	No
		2	2417	15.59	16.00	No
		6	2437	15.59	16.00	No
		10	2457	15.91	16.00	No
		11	2462	15.60	16.00	No
		12	2467	15.83	16.00	No
	VHT20	1	2412	15.48	16.00	No
		2	2417	15.58	16.00	No
		6	2437	15.61	16.00	No
		10	2457	15.59	16.00	No
		11	2462	15.65	16.00	No
		12	2467	15.75	16.00	No
	VHT40	3	2422	15.56	16.00	No
		6	2437	15.53	16.00	No
		9	2452	15.54	16.00	No
		10	2457	15.38	16.00	No
		11	2462	14.85	16.00	No
	802.11ax(HE20) (SU)	1	2412	15.58	16.00	No
		2	2417	15.48	16.00	No
		6	2437	15.43	16.00	No
		10	2457	15.53	16.00	No
		11	2462	15.48	16.00	No
		12	2467	15.47	16.00	No
	802.11ax(HE40) (SU)	3	2422	15.41	16.00	No
		6	2437	15.39	16.00	No
		9	2452	15.82	16.00	No
10		2457	15.97	16.00	No	

		11	2462	15.30	16.00	No
	802.11ax(HE20) (RU26)	1	2412	15.61	16.00	No
		6	2437	15.83	16.00	No
		11	2462	12.87	13.00	No
		12	2467	8.24	9.00	No
		13	2472	-3.29	-3.00	No
	802.11ax(HE20) (RU52)	1	2412	15.65	16.00	No
		6	2437	15.45	16.00	No
		11	2462	15.08	15.50	No
		12	2467	10.56	11.00	No
		13	2472	2.28	3.00	No
	802.11ax(HE20) (RU106)	1	2412	15.73	16.00	No
		6	2437	15.40	16.00	No
		11	2462	15.80	16.00	No
		12	2467	13.61	15.00	No
		13	2472	5.48	6.00	No

Note: According KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.

Adjusted SAR = Report SAR \* (max power (OFDM)/ max power (DSSS)) = 0.222 \* (39.81mW/39.81mW) = 0.222 W/Kg, so the 2.4G OFDM SAR test is not required.

## 8.1.3 2.4G WIFI (MIMO) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	18.44	18.50	No
		6	2437	18.41	18.50	No
		10	2457	18.39	18.50	No
		11	2462	18.50	18.50	No
		12	2467	15.09	16.00	No
		13	2472	8.41	9.00	No
	802.11g	1	2412	18.25	18.50	No
		2	2417	18.30	18.50	No
		6	2437	18.37	18.50	No
		10	2457	18.48	18.50	No
		11	2462	18.27	18.50	No
		12	2467	18.48	18.50	No
	VHT20	1	2412	18.32	18.50	No
		2	2417	18.34	18.50	No
		6	2437	18.43	18.50	No
		10	2457	18.49	18.50	No
		11	2462	18.41	18.50	No
		12	2467	18.43	18.50	No
	VHT40	3	2422	18.34	18.50	No
		6	2437	18.21	18.50	No
		9	2452	17.60	18.50	No
		10	2457	17.41	18.50	No
		11	2462	15.47	16.00	No
	802.11ax(HE20) (SU)	1	2412	18.44	18.50	No
		2	2417	18.26	18.50	No
		6	2437	18.23	18.50	No
		10	2457	18.27	18.50	No
		11	2462	18.32	18.50	No
		12	2467	18.25	18.50	No
	802.11ax(HE40) (SU)	13	2472	8.15	9.00	No
		3	2422	18.31	18.50	No
		6	2437	18.34	18.50	No
9		2452	17.72	18.50	No	
		10	2457	17.50	18.50	No



		11	2462	15.52	16.00	No
	802.11ax(HE20) (RU26)	1	2412	18.48	18.50	No
		6	2437	18.25	18.50	No
		11	2462	14.99	15.00	No
		12	2467	10.16	11.00	No
		13	2472	-3.18	-3.00	No
	802.11ax(HE20) (RU52)	1	2412	18.25	18.50	No
		6	2437	18.25	18.50	No
		11	2462	16.46	17.00	No
		12	2467	11.59	12.00	No
		13	2472	2.78	3.00	No
	802.11ax(HE20) (RU106)	1	2412	18.42	18.50	No
		6	2437	18.23	18.50	No
		11	2462	18.37	18.50	No
		12	2467	15.61	16.00	No
		13	2472	5.83	6.00	No

Note: For WiFi SAR testing was performed on single antenna RF power in SISO mode that is larger to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission used more conservative “Max. (main ant) + Max. (aux. ant)” method to determine SAR compliance. When the sum of 1-g SISO transmission SAR measurement is <1.6 W/kg, MIMO SAR test is not required.

## 8.1.4 5G WIFI (SISO-Main Antenna) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	14.61	15.00	No
		40	5200	14.50	15.00	No
		48	5240	14.34	15.00	No
	802.11n(HT20)	36	5180	14.37	15.00	No
		40	5200	14.32	15.00	No
		48	5240	14.60	15.00	No
	802.11n(HT40)	38	5190	14.32	15.00	No
		46	5230	14.41	15.00	No
	802.11ac(VHT20)	36	5180	14.51	15.00	No
		40	5200	14.59	15.00	No
		48	5240	14.37	15.00	No
	802.11ac(VHT40)	38	5190	14.31	15.00	No
		46	5230	14.55	15.00	No
	802.11ac(VHT80)	42	5210	14.70	15.00	No
	802.11ac(VHT160)	50	5250	10.95	11.00	No
	802.11ax(HE20) (SU)	36	5180	14.44	15.00	No
		40	5200	14.59	15.00	No
		48	5240	14.35	15.00	No
	802.11ax(HE40) (SU)	38	5190	14.35	15.00	No
		46	5230	14.38	15.00	No
	802.11ax(HE80) (SU)	42	5210	14.60	15.00	No
802.11ax(HE160) (SU)	50	5250	10.77	11.00	No	
802.11ax(HE20) (RU26)	36	5180	13.68	15.00	No	
	40	5200	14.01	15.00	No	
	48	5240	14.12	15.00	No	
802.11ax(HE20) (RU52)	36	5180	14.33	15.00	No	
	40	5200	14.41	15.00	No	
	48	5240	14.57	15.00	No	
802.11ax(HE20) (RU106)	36	5180	14.53	15.00	No	
	40	5200	14.70	15.00	No	
	48	5240	14.38	15.00	No	
5.3 (5.25~5.35)	802.11a	52	5260	14.49	15.00	No
		60	5300	14.65	15.00	No
		64	5320	14.69	15.00	No
	802.11n(HT20)	52	5260	14.57	15.00	No
		60	5300	14.51	15.00	No
		64	5320	14.43	15.00	No
	802.11n(HT40)	54	5270	14.60	15.00	No

		62	5310	14.69	15.00	No
	802.11ac(VHT20)	52	5260	14.61	15.00	No
		60	5300	14.64	15.00	No
		64	5320	14.47	15.00	No
	802.11ac(VHT40)	54	5270	14.31	15.00	No
		62	5310	14.34	15.00	No
	802.11ac(VHT80)	58	5290	<b>13.81</b>	15.00	Yes
	802.11ax(HE20) (SU)	52	5260	14.62	15.00	No
		60	5300	14.47	15.00	No
		64	5320	14.41	15.00	No
	802.11ax(HE40) (SU)	54	5270	14.52	15.00	No
		62	5310	14.49	15.00	No
	802.11ax(HE80) (SU)	58	5290	13.95	15.00	No
	802.11ax(HE20) (RU26)	52	5260	13.63	15.00	No
		60	5300	14.44	15.00	No
		64	5320	14.29	15.00	No
	802.11ax(HE20) (RU52)	52	5260	14.55	15.00	No
		60	5300	14.67	15.00	No
		64	5320	14.58	15.00	No
	802.11ax(HE20) (RU106)	52	5260	14.32	15.00	No
60		5300	14.58	15.00	No	
64		5320	14.37	15.00	No	
5.6 (5.47~5.725)	802.11a	100	5500	15.55	16.00	No
		116	5580	15.53	16.00	No
		140	5700	15.64	16.00	No
		144	5720	15.27	16.00	No
	802.11n(HT20)	100	5500	15.40	16.00	No
		116	5580	15.71	16.00	No
		140	5700	15.21	16.00	No
		144	5720	15.67	16.00	No
	802.11n(HT40)	102	5510	15.63	16.00	No
		110	5550	15.31	16.00	No
		134	5670	15.43	16.00	No
		142	5710	15.73	16.00	No
	802.11ac(VHT20)	100	5500	15.73	16.00	No
		116	5580	15.42	16.00	No
		140	5700	15.15	16.00	No
		144	5720	15.98	16.00	No
	802.11ac(VHT40)	102	5510	15.68	16.00	No
		110	5550	15.42	16.00	No
		134	5670	15.53	16.00	No
		142	5710	15.32	16.00	No

	802.11ac(VHT80)	106	5530	<b>15.80</b>	16.00	Yes
		122	5610	15.58	16.00	No
		138	5690	15.43	16.00	No
	802.11ac(VHT160)	114	5570	11.69	12.00	No
	802.11ax(HE20) (SU)	100	5500	15.48	16.00	No
		116	5580	15.66	16.00	No
		140	5700	15.44	16.00	No
		144	5720	15.85	16.00	No
	802.11ax(HE40) (SU)	102	5510	15.83	16.00	No
		110	5550	15.47	16.00	No
		134	5670	15.40	16.00	No
		142	5710	14.94	16.00	No
	802.11ax(HE80) (SU)	106	5530	15.84	16.00	No
		122	5610	15.62	16.00	No
		138	5690	15.03	16.00	No
	802.11ax(HE160) (SU)	114	5570	11.71	12.00	No
	802.11ax(HE20) (RU26)	100	5500	14.44	15.00	No
		116	5580	14.14	15.00	No
		140	5700	11.96	13.00	No
		144	5720	14.63	15.00	No
	802.11ax(HE20) (RU52)	100	5500	15.50	16.00	No
		116	5580	15.89	16.00	No
		140	5700	15.35	16.00	No
		144	5720	9.35	11.00	No
802.11ax(HE20) (RU106)	100	5500	15.29	16.00	No	
	116	5580	15.76	16.00	No	
	140	5700	15.28	16.00	No	
	144	5720	15.33	16.00	No	
5.8 (5.725~5.85)	802.11a	149	5745	15.34	16.00	No
		157	5785	15.62	16.00	No
		165	5825	15.38	16.00	No
	802.11n(HT20)	149	5745	15.28	16.00	No
		157	5785	15.72	16.00	No
		165	5825	15.26	16.00	No
	802.11n(HT40)	151	5755	15.47	16.00	No
		159	5795	15.77	16.00	No
	802.11ac(VHT20)	149	5745	15.37	16.00	No
		157	5785	15.60	16.00	No
		165	5825	15.43	16.00	No
	802.11ac(VHT40)	151	5755	15.46	16.00	No
		159	5795	15.86	16.00	No
	802.11ac(VHT80)	155	5775	<b>15.40</b>	16.00	Yes

	802.11ax(HE20) (SU)	149	5745	15.01	16.00	No	
		157	5785	15.53	16.00	No	
		165	5825	15.86	16.00	No	
	802.11ax(HE40) (SU)	151	5755	15.45	16.00	No	
		159	5795	15.73	16.00	No	
	802.11ax(HE80) (SU)	155	5775	15.36	16.00	No	
	802.11ax(HE20) (RU26)	149	5745	15.78	16.00	No	
		157	5785	15.39	16.00	No	
		165	5825	15.63	16.00	No	
	802.11ax(HE20) (RU52)	149	5745	15.68	16.00	No	
		157	5785	15.32	16.00	No	
		165	5825	15.72	16.00	No	
	802.11ax(HE20) (RU106)	149	5745	15.89	16.00	No	
		157	5785	15.51	16.00	No	
		165	5825	15.83	16.00	No	
	5.9 (5.805~5.89 5)	802.11a	169	5845	15.80	16.00	No
			173	5865	15.86	16.00	No
			177	5885	15.97	16.00	No
		802.11n(HT20)	169	5845	15.80	16.00	No
			173	5865	15.46	16.00	No
			177	5885	15.57	16.00	No
		802.11n(HT40)	167	5835	15.55	16.00	No
			175	5875	15.63	16.00	No
		802.11ac(VHT20)	169	5845	15.80	16.00	No
173			5865	15.52	16.00	No	
177			5885	15.62	16.00	No	
802.11ac(VHT40)		167	5835	15.51	16.00	No	
		175	5875	15.86	16.00	No	
802.11ac(VHT80)		171	5855	15.77	16.00	No	
802.11ac(VHT160)		163	5815	<b>15.90</b>	16.00	Yes	
802.11ax(HE20) (SU)		169	5845	15.80	16.00	No	
		173	5865	15.37	16.00	No	
		177	5885	15.47	16.00	No	
802.11ax(HE40) (SU)		167	5835	15.43	16.00	No	
		175	5875	15.53	16.00	No	
802.11ax(HE80) (SU)		171	5855	15.88	16.00	No	
802.11ax(HE160) (SU)		163	5815	15.66	16.00	No	
802.11ax(HE20) (RU26)		169	5845	12.69	14.00	No	
		173	5865	12.39	13.00	No	
	177	5885	9.90	10.00	No		

	802.11ax(HE20) (RU52)	169	5845	15.44	16.00	No
		173	5865	15.26	16.00	No
		177	5885	15.50	16.00	No
	802.11ax(HE20) (RU106)	169	5845	15.82	16.00	No
		173	5865	15.80	16.00	No
		177	5885	15.58	16.00	No

Note: When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

## 8.1.5 5G WIFI (SISO-Aux. Antenna) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	14.60	15.00	No
		40	5200	14.62	15.00	No
		48	5240	14.44	15.00	No
	802.11n(HT20)	36	5180	14.67	15.00	No
		40	5200	14.60	15.00	No
		48	5240	14.61	15.00	No
	802.11n(HT40)	38	5190	14.57	15.00	No
		46	5230	14.68	15.00	No
	802.11ac(VHT20)	36	5180	14.56	15.00	No
		40	5200	14.40	15.00	No
		48	5240	14.59	15.00	No
	802.11ac(VHT40)	38	5190	14.39	15.00	No
		46	5230	14.54	15.00	No
	802.11ac(VHT80)	42	5210	14.58	15.00	No
	802.11ac(VHT160)	50	5250	10.62	11.00	No
	802.11ax(HE20) (SU)	36	5180	14.61	15.00	No
		40	5200	14.67	15.00	No
		48	5240	14.33	15.00	No
	802.11ax(HE40) (SU)	38	5190	14.64	15.00	No
		46	5230	14.33	15.00	No
	802.11ax(HE80) (SU)	42	5210	14.58	15.00	No
	802.11ax(HE160) (SU)	50	5250	11.06	12.00	No
	802.11ax(HE20) (RU26)	36	5180	13.66	15.00	No
		40	5200	13.89	15.00	No
48		5240	13.71	15.00	No	
802.11ax(HE20) (RU52)	36	5180	14.54	15.00	No	
	40	5200	14.47	15.00	No	
	48	5240	14.47	15.00	No	
802.11ax(HE20) (RU106)	36	5180	14.34	15.00	No	
	40	5200	14.31	15.00	No	
	48	5240	14.41	15.00	No	
5.3 (5.25~5.35)	802.11a	52	5260	14.46	15.00	No
		60	5300	14.54	15.00	No
		64	5320	14.36	15.00	No
	802.11n(HT20)	52	5260	14.61	15.00	No
		60	5300	14.49	15.00	No
		64	5320	14.50	15.00	No
	802.11n(HT40)	54	5270	14.60	15.00	No

		62	5310	14.40	15.00	No
	802.11ac(VHT20)	52	5260	14.31	15.00	No
		60	5300	14.69	15.00	No
		64	5320	14.48	15.00	No
	802.11ac(VHT40)	54	5270	14.33	15.00	No
		62	5310	14.52	15.00	No
	802.11ac(VHT80)	58	5290	<b>13.73</b>	15.00	Yes
	802.11ax(HE20) (SU)	52	5260	14.30	15.00	No
		60	5300	14.65	15.00	No
		64	5320	14.56	15.00	No
	802.11ax(HE40) (SU)	54	5270	14.55	15.00	No
		62	5310	14.37	15.00	No
	802.11ax(HE80) (SU)	58	5290	13.76	15.00	No
	802.11ax(HE20) (RU26)	52	5260	13.94	15.00	No
		60	5300	14.45	15.00	No
		64	5320	14.23	15.00	No
	802.11ax(HE20) (RU52)	52	5260	14.49	15.00	No
		60	5300	14.46	15.00	No
		64	5320	14.70	15.00	No
	802.11ax(HE20) (RU106)	52	5260	14.46	15.00	No
60		5300	14.50	15.00	No	
64		5320	14.64	15.00	No	
5.6 (5.47~5.725)	802.11a	100	5500	15.46	16.00	No
		116	5580	15.32	16.00	No
		140	5700	15.89	16.00	No
		144	5720	15.39	16.00	No
	802.11n(HT20)	100	5500	15.52	16.00	No
		116	5580	15.68	16.00	No
		140	5700	15.48	16.00	No
		144	5720	15.96	16.00	No
	802.11n(HT40)	102	5510	15.89	16.00	No
		110	5550	15.82	16.00	No
		134	5670	15.82	16.00	No
		142	5710	15.90	16.00	No
	802.11ac(VHT20)	100	5500	15.53	16.00	No
		116	5580	15.74	16.00	No
		140	5700	15.41	16.00	No
		144	5720	15.65	16.00	No
	802.11ac(VHT40)	102	5510	15.74	16.00	No
		110	5550	15.69	16.00	No
		134	5670	15.98	16.00	No
		142	5710	15.51	16.00	No



	802.11ac(VHT80)	106	5530	<b>15.70</b>	16.00	Yes
		122	5610	15.50	16.00	No
		138	5690	15.53	16.00	No
	802.11ac(VHT160)	114	5570	11.81	12.00	No
	802.11ax(HE20) (SU)	100	5500	15.56	16.00	No
		116	5580	15.46	16.00	No
		140	5700	15.12	16.00	No
		144	5720	15.56	16.00	No
	802.11ax(HE40) (SU)	102	5510	15.97	16.00	No
		110	5550	15.87	16.00	No
		134	5670	15.74	16.00	No
		142	5710	15.75	16.00	No
	802.11ax(HE80) (SU)	106	5530	15.62	16.00	No
		122	5610	15.84	16.00	No
		138	5690	15.63	16.00	No
	802.11ax(HE160) (SU)	114	5570	11.84	12.00	No
	802.11ax(HE20) (RU26)	100	5500	14.33	15.00	No
		116	5580	14.64	15.00	No
		140	5700	12.00	13.00	No
		144	5720	14.39	15.00	No
802.11ax(HE20) (RU52)	100	5500	15.50	16.00	No	
	116	5580	15.40	16.00	No	
	140	5700	15.49	16.00	No	
	144	5720	9.30	11.00	No	
802.11ax(HE20) (RU106)	100	5500	15.51	16.00	No	
	116	5580	15.23	16.00	No	
	140	5700	15.66	16.00	No	
	144	5720	15.79	16.00	No	
5.8 (5.725~5.85)	802.11a	149	5745	15.47	16.00	No
		157	5785	15.64	16.00	No
		165	5825	15.82	16.00	No
	802.11n(HT20)	149	5745	15.84	16.00	No
		157	5785	15.72	16.00	No
		165	5825	15.64	16.00	No
	802.11n(HT40)	151	5755	15.63	16.00	No
		159	5795	15.74	16.00	No
	802.11ac(VHT20)	149	5745	15.79	16.00	No
		157	5785	15.57	16.00	No
		165	5825	15.72	16.00	No
	802.11ac(VHT40)	151	5755	15.42	16.00	No
		159	5795	15.60	16.00	No
	802.11ac(VHT80)	155	5775	<b>15.76</b>	16.00	Yes

	802.11ax(HE20) (SU)	149	5745	15.56	16.00	No	
		157	5785	15.40	16.00	No	
		165	5825	15.53	16.00	No	
	802.11ax(HE40) (SU)	151	5755	15.43	16.00	No	
		159	5795	15.57	16.00	No	
	802.11ax(HE80) (SU)	155	5775	15.43	16.00	No	
	802.11ax(HE20) (RU26)	149	5745	15.71	16.00	No	
		157	5785	15.70	16.00	No	
		165	5825	15.75	16.00	No	
	802.11ax(HE20) (RU52)	149	5745	15.69	16.00	No	
		157	5785	15.28	16.00	No	
		165	5825	15.30	16.00	No	
	802.11ax(HE20) (RU106)	149	5745	15.82	16.00	No	
		157	5785	15.29	16.00	No	
		165	5825	15.80	16.00	No	
	5.9 (5.805~5.89 5)	802.11a	169	5845	15.80	16.00	No
			173	5865	15.77	16.00	No
			177	5885	15.69	16.00	No
		802.11n(HT20)	169	5845	15.78	16.00	No
			173	5865	15.47	16.00	No
			177	5885	15.67	16.00	No
		802.11n(HT40)	167	5835	15.58	16.00	No
			175	5875	15.57	16.00	No
		802.11ac(VHT20)	169	5845	15.43	16.00	No
173			5865	15.52	16.00	No	
177			5885	15.60	16.00	No	
802.11ac(VHT40)		167	5835	15.38	16.00	No	
		175	5875	15.60	16.00	No	
802.11ac(VHT80)		171	5855	15.77	16.00	No	
802.11ac(VHT160)		163	5815	<b>15.96</b>	16.00	Yes	
802.11ax(HE20) (SU)		169	5845	15.81	16.00	No	
		173	5865	15.61	16.00	No	
		177	5885	15.49	16.00	No	
802.11ax(HE40) (SU)		167	5835	15.50	16.00	No	
		175	5875	15.59	16.00	No	
802.11ax(HE80) (SU)		171	5855	15.63	16.00	No	
802.11ax(HE160) (SU)		163	5815	15.64	16.00	No	
802.11ax(HE20) (RU26)		169	5845	13.00	14.00	No	
		173	5865	12.34	13.00	No	
	177	5885	9.77	10.00	No		

	802.11ax(HE20) (RU52)	169	5845	15.11	16.00	No
		173	5865	15.53	16.00	No
		177	5885	15.62	16.00	No
	802.11ax(HE20) (RU106)	169	5845	15.55	16.00	No
		173	5865	15.44	16.00	No
		177	5885	15.65	16.00	No

Note: When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

## 8.1.6 5G WIFI (MIMO) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	17.62	18.00	No
		40	5200	17.57	18.00	No
		48	5240	17.40	18.00	No
	802.11n(HT20)	36	5180	17.53	18.00	No
		40	5200	17.47	18.00	No
		48	5240	17.62	18.00	No
	802.11n(HT40)	38	5190	17.46	18.00	No
		46	5230	17.56	18.00	No
	802.11ac(VHT20)	36	5180	17.55	18.00	No
		40	5200	17.51	18.00	No
		48	5240	17.49	18.00	No
	802.11ac(VHT40)	38	5190	17.36	18.00	No
		46	5230	17.56	18.00	No
	802.11ac(VHT80)	42	5210	15.75	16.00	No
	802.11ac(VHT160)	50	5250	12.02	13.00	No
	802.11ax(HE20) (SU)	36	5180	17.54	18.00	No
		40	5200	17.64	18.00	No
		48	5240	17.35	18.00	No
	802.11ax(HE40) (SU)	38	5190	17.51	18.00	No
		46	5230	17.37	18.00	No
	802.11ax(HE80) (SU)	42	5210	15.73	16.00	No
802.11ax(HE160) (SU)	50	5250	12.33	13.00	No	
802.11ax(HE20) (RU26)	36	5180	11.84	12.00	No	
	40	5200	12.11	13.00	No	
	48	5240	11.97	12.00	No	
802.11ax(HE20) (RU52)	36	5180	15.54	16.00	No	
	40	5200	15.27	16.00	No	
	48	5240	15.56	16.00	No	
802.11ax(HE20) (RU106)	36	5180	16.69	17.00	No	
	40	5200	16.99	17.00	No	
	48	5240	16.81	17.00	No	
5.3 (5.25~5.35)	802.11a	52	5260	17.49	18.00	No
		60	5300	17.61	18.00	No
		64	5320	17.54	18.00	No
	802.11n(HT20)	52	5260	17.60	18.00	No
		60	5300	17.51	18.00	No
		64	5320	17.48	18.00	No
	802.11n(HT40)	54	5270	17.61	18.00	No

		62	5310	17.56	18.00	No
	802.11ac(VHT20)	52	5260	17.47	18.00	No
		60	5300	17.68	18.00	No
		64	5320	17.49	18.00	No
		802.11ac(VHT40)	54	5270	17.33	18.00
	62		5310	17.44	18.00	No
	802.11ac(VHT80)	58	5290	15.47	17.00	No
	802.11ax(HE20) (SU)	52	5260	17.47	18.00	No
		60	5300	17.57	18.00	No
		64	5320	17.50	18.00	No
	802.11ax(HE40) (SU)	54	5270	17.55	18.00	No
		62	5310	17.44	18.00	No
	802.11ax(HE80) (SU)	58	5290	13.78	14.00	No
	802.11ax(HE20) (RU26)	52	5260	11.91	12.00	No
		60	5300	11.43	12.00	No
		64	5320	11.80	12.00	No
	802.11ax(HE20) (RU52)	52	5260	15.34	16.00	No
		60	5300	15.19	16.00	No
		64	5320	15.31	16.00	No
	802.11ax(HE20) (RU106)	52	5260	16.72	17.00	No
60		5300	16.36	17.00	No	
64		5320	16.59	17.00	No	
5.6 (5.47~5.725)	802.11a	100	5500	18.49	19.00	No
		116	5580	18.61	19.00	No
		140	5700	17.94	19.00	No
		144	5720	18.57	19.00	No
	802.11n(HT20)	100	5500	18.56	19.00	No
		116	5580	18.67	19.00	No
		140	5700	16.02	17.00	No
		144	5720	18.55	19.00	No
	802.11n(HT40)	102	5510	18.00	19.00	No
		110	5550	18.58	19.00	No
		134	5670	17.96	19.00	No
		142	5710	18.60	19.00	No
	802.11ac(VHT20)	100	5500	18.63	19.00	No
		116	5580	18.47	19.00	No
		140	5700	15.92	16.00	No
		144	5720	18.63	19.00	No
	802.11ac(VHT40)	102	5510	17.90	19.00	No
		110	5550	18.51	19.00	No
		134	5670	18.00	19.00	No
		142	5710	18.64	19.00	No

	802.11ac(VHT80)	106	5530	16.75	17.00	No
		122	5610	17.37	18.00	No
		138	5690	18.58	19.00	No
	802.11ac(VHT160)	114	5570	12.68	13.00	No
	802.11ax(HE20) (SU)	100	5500	18.70	19.00	No
		116	5580	18.70	19.00	No
		140	5700	16.09	17.00	No
		144	5720	18.66	19.00	No
	802.11ax(HE40) (SU)	102	5510	18.00	19.00	No
		110	5550	18.71	19.00	No
		134	5670	17.93	19.00	No
		142	5710	18.63	19.00	No
	802.11ax(HE80) (SU)	106	5530	16.85	17.00	No
		122	5610	17.29	18.00	No
		138	5690	18.70	19.00	No
	802.11ax(HE160) (SU)	114	5570	12.85	14.00	No
	802.11ax(HE20) (RU26)	100	5500	12.30	13.00	No
		116	5580	12.16	13.00	No
		140	5700	11.95	13.00	No
		144	5720	12.87	14.00	No
	802.11ax(HE20) (RU52)	100	5500	15.53	16.00	No
		116	5580	15.52	16.00	No
		140	5700	13.93	15.00	No
		144	5720	15.83	16.00	No
802.11ax(HE20) (RU106)	100	5500	17.01	18.00	No	
	116	5580	16.94	18.00	No	
	140	5700	16.48	18.00	No	
	144	5720	17.31	18.00	No	
5.8 (5.725~5.85)	802.11a	149	5745	18.60	19.00	No
		157	5785	18.54	19.00	No
		165	5825	18.66	19.00	No
	802.11n(HT20)	149	5745	18.53	19.00	No
		157	5785	18.32	19.00	No
		165	5825	18.47	19.00	No
	802.11n(HT40)	151	5755	18.55	19.00	No
		159	5795	18.47	19.00	No
	802.11ac(VHT20)	149	5745	18.53	19.00	No
		157	5785	18.39	19.00	No
		165	5825	18.55	19.00	No
	802.11ac(VHT40)	151	5755	18.67	19.00	No
		159	5795	18.36	19.00	No
	802.11ac(VHT80)	155	5775	18.71	19.00	No

	802.11ax(HE20) (SU)	149	5745	18.25	19.00	No	
		157	5785	18.43	19.00	No	
		165	5825	18.39	19.00	No	
	802.11ax(HE40) (SU)	151	5755	18.62	19.00	No	
		159	5795	18.32	19.00	No	
	802.11ax(HE80) (SU)	155	5775	18.71	19.00	No	
	802.11ax(HE20) (RU26)	149	5745	18.74	19.00	No	
		157	5785	18.75	19.00	No	
		165	5825	18.34	19.00	No	
	802.11ax(HE20) (RU52)	149	5745	18.53	19.00	No	
		157	5785	18.73	19.00	No	
		165	5825	18.76	19.00	No	
	802.11ax(HE20) (RU106)	149	5745	18.58	19.00	No	
		157	5785	18.88	19.00	No	
		165	5825	18.69	19.00	No	
	5.9 (5.805~5.89 5)	802.11a	169	5845	16.61	17.00	No
			173	5865	16.44	17.00	No
			177	5885	16.42	17.00	No
		802.11n(HT20)	169	5845	16.40	17.00	No
			173	5865	16.71	17.00	No
			177	5885	16.38	17.00	No
		802.11n(HT40)	167	5835	18.41	19.00	No
			175	5875	18.60	19.00	No
		802.11ac(VHT20)	169	5845	16.32	17.00	No
173			5865	16.73	17.00	No	
177			5885	16.38	17.00	No	
802.11ac(VHT40)		167	5835	18.74	19.00	No	
		175	5875	18.67	19.00	No	
802.11ac(VHT80)		171	5855	18.69	19.00	No	
802.11ac(VHT160)		163	5815	15.22	16.00	No	
802.11ax(HE20) (SU)		169	5845	16.61	17.00	No	
		173	5865	16.62	17.00	No	
		177	5885	16.67	17.00	No	
802.11ax(HE40) (SU)		167	5835	18.43	19.00	No	
		175	5875	18.81	19.00	No	
802.11ax(HE80) (SU)		171	5855	18.62	19.00	No	
802.11ax(HE160) (SU)		163	5815	15.41	17.00	No	
802.11ax(HE20) (RU26)		169	5845	9.33	10.00	No	
		173	5865	9.53	10.00	No	
	177	5885	6.29	7.00	No		

	802.11ax(HE20) (RU52)	169	5845	12.83	14.00	No
		173	5865	13.05	14.00	No
		177	5885	11.91	13.00	No
	802.11ax(HE20) (RU106)	169	5845	14.56	15.00	No
		173	5865	14.20	15.00	No
		177	5885	14.05	15.00	No

Note: For WiFi SAR testing was performed on single antenna RF power in SISO mode that is larger to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission used more conservative "Max. (main ant) + Max. (aux. ant) " method to determine SAR compliance. When the sum of 1-g SISO transmission SAR measurement is <1.6 W/kg, MIMO SAR test is not required.



## 8.1.7 6G WIFI (SISO-Main Antenna) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax(HE20) (SU)	1	5955	6.93	13.00	No
		49	6195	7.06	13.00	No
		93	6415	6.74	13.00	No
		97	6435	6.69	13.00	No
		105	6475	6.90	13.00	No
		113	6515	6.65	13.00	No
		117	6535	6.74	13.00	No
		149	6695	7.04	13.00	No
		181	6855	7.05	13.00	No
		185	6875	6.73	13.00	No
		189	6895	6.84	13.00	No
		209	6995	6.45	13.00	No
		229	7095	6.92	13.00	No
		233	7115	7.15	13.00	No
	802.11ax(HE40) (SU)	3	5965	9.81	13.00	No
		51	6205	9.83	13.00	No
		91	6405	10.07	13.00	No
		99	6445	9.84	13.00	No
		107	6485	9.85	13.00	No
		115	6525	9.83	13.00	No
		123	6565	9.67	13.00	No
		147	6685	9.65	13.00	No
		179	6845	/	/	No
		187	6885	9.82	13.00	No
		195	6925	10.35	13.00	No
		211	7005	9.42	13.00	No
		227	7085	9.84	13.00	No
	802.11ax(HE80) (SU)	7	5985	12.22	13.00	No
		55	6225	12.54	13.00	No
		87	6385	12.38	13.00	No
		103	6465	12.53	13.00	No
		119	6545	12.60	13.00	No
		135	6625	12.37	13.00	No
151		6705	12.51	13.00	No	
167		6785	12.76	13.00	No	
183		6865	12.50	13.00	No	
199		6945	12.61	13.00	No	
215	7025	12.07	13.00	No		
802.11ax(HE160)	15	6025	12.86	13.00	Yes	

	(SU)	47	6185	<b>12.88</b>	13.00	Yes
		79	6345	12.54	13.00	Yes
		111	6505	12.85	13.00	Yes
		143	6665	12.77	13.00	Yes
		175	6825	12.57	13.00	Yes
		207	6985	12.43	13.00	Yes
	802.11ax(HE20) (RU26)	1	5955	-2.75	-2.00	No
		49	6195	-3.00	-2.00	No
		93	6415	-2.64	-2.00	No
		97	6435	-2.80	-2.00	No
		105	6475	-3.14	-2.00	No
		113	6515	-2.61	-2.00	No
		117	6535	-3.27	-2.00	No
		149	6695	-2.65	-2.00	No
		181	6855	-2.99	-2.00	No
		185	6875	-2.63	-2.00	No
		189	6895	-2.43	-2.00	No
		209	6995	-2.60	-2.00	No
		229	7095	-1.63	-1.00	No
		233	7115	-1.48	-1.00	No
	802.11ax(HE20) (RU52)	1	5955	0.70	2.00	No
		49	6195	0.30	2.00	No
		93	6415	0.61	2.00	No
		97	6435	0.43	2.00	No
		105	6475	0.53	2.00	No
		113	6515	0.14	2.00	No
		117	6535	0.46	2.00	No
		149	6695	0.39	2.00	No
		181	6855	0.49	2.00	No
		185	6875	0.58	2.00	No
		189	6895	0.74	2.00	No
		209	6995	0.68	2.00	No
		229	7095	1.33	2.00	No
233		7115	1.90	2.00	No	
802.11ax(HE20) (RU106)	1	5955	3.51	5.00	No	
	49	6195	3.22	5.00	No	
	93	6415	3.03	5.00	No	
	97	6435	3.08	5.00	No	
	105	6475	3.27	5.00	No	
	113	6515	3.28	5.00	No	
	117	6535	3.29	5.00	No	
	149	6695	3.44	5.00	No	
	181	6855	3.21	5.00	No	

		185	6875	3.24	5.00	No
		189	6895	3.30	5.00	No
		209	6995	3.40	5.00	No
		229	7095	4.28	5.00	No
		233	7115	4.36	5.00	No

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.

## 8.1.8 6G WIFI (SISO-Aux. Antenna) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax(HE20) (SU)	1	5955	6.96	13.00	No
		49	6195	6.57	13.00	No
		93	6415	6.53	13.00	No
		97	6435	6.71	13.00	No
		105	6475	6.89	13.00	No
		113	6515	6.83	13.00	No
		117	6535	6.99	13.00	No
		149	6695	7.04	13.00	No
		181	6855	6.72	13.00	No
		185	6875	6.90	13.00	No
		189	6895	6.85	13.00	No
		209	6995	6.21	13.00	No
		229	7095	7.09	13.00	No
		233	7115	7.00	13.00	No
	802.11ax(HE40) (SU)	3	5965	9.97	13.00	No
		51	6205	9.97	13.00	No
		91	6405	10.06	13.00	No
		99	6445	10.08	13.00	No
		107	6485	9.80	13.00	No
		115	6525	10.06	13.00	No
		123	6565	9.98	13.00	No
		147	6685	9.82	13.00	No
		179	6845	/	/	No
		187	6885	9.92	13.00	No
		195	6925	10.32	13.00	No
		211	7005	9.46	13.00	No
		227	7085	10.19	13.00	No
	802.11ax(HE80) (SU)	7	5985	12.32	13.00	No
		55	6225	12.50	13.00	No
		87	6385	12.30	13.00	No
		103	6465	12.57	13.00	No
		119	6545	12.39	13.00	No
		135	6625	12.56	13.00	No
		151	6705	12.73	13.00	No
167		6785	12.79	13.00	No	
183		6865	12.67	13.00	No	
199		6945	12.95	13.00	No	
215		7025	12.29	13.00	No	
802.11ax(HE160)	15	6025	12.63	13.00	Yes	

	(SU)	47	6185	<b>12.72</b>	13.00	Yes
		79	6345	12.70	13.00	Yes
		111	6505	12.64	13.00	Yes
		143	6665	12.28	13.00	Yes
		175	6825	12.65	13.00	Yes
		207	6985	12.63	13.00	Yes
	802.11ax(HE20) (RU26)	1	5955	-2.54	-2.00	No
		49	6195	-3.13	-2.00	No
		93	6415	-3.06	-2.00	No
		97	6435	-2.89	-2.00	No
		105	6475	-3.08	-2.00	No
		113	6515	-2.62	-2.00	No
		117	6535	-3.15	-2.00	No
		149	6695	-2.92	-2.00	No
		181	6855	-2.98	-2.00	No
		185	6875	-2.64	-2.00	No
		189	6895	-2.22	-2.00	No
		209	6995	-2.84	-2.00	No
		229	7095	-1.81	-1.00	No
		233	7115	-1.65	-1.00	No
	802.11ax(HE20) (RU52)	1	5955	0.55	2.00	No
		49	6195	0.61	2.00	No
		93	6415	0.44	2.00	No
		97	6435	0.13	2.00	No
		105	6475	0.57	2.00	No
		113	6515	0.47	2.00	No
		117	6535	0.68	2.00	No
		149	6695	0.32	2.00	No
		181	6855	0.72	2.00	No
		185	6875	0.29	2.00	No
		189	6895	0.49	2.00	No
		209	6995	0.29	2.00	No
		229	7095	1.14	2.00	No
		233	7115	1.72	2.00	No
	802.11ax(HE20) (RU106)	1	5955	3.28	5.00	No
		49	6195	3.13	5.00	No
93		6415	2.76	5.00	No	
97		6435	2.95	5.00	No	
105		6475	3.32	5.00	No	
113		6515	3.37	5.00	No	
117		6535	3.22	5.00	No	
149		6695	3.41	5.00	No	
181		6855	3.16	5.00	No	

		185	6875	3.12	5.00	No
		189	6895	3.10	5.00	No
		209	6995	3.00	5.00	No
		229	7095	3.85	5.00	No
		233	7115	4.58	5.00	No

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.

## 8.1.9 6G WIFI (MIMO) (Laptop)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax(HE20) (SU)	1	5955	3.41	5.00	No
		49	6195	3.34	5.00	No
		93	6415	3.57	5.00	No
		97	6435	3.62	5.00	No
		105	6475	3.62	5.00	No
		113	6515	3.88	5.00	No
		117	6535	3.90	5.00	No
		149	6695	3.63	5.00	No
		181	6855	3.51	5.00	No
		185	6875	3.69	5.00	No
		189	6895	3.49	5.00	No
		209	6995	3.57	5.00	No
		229	7095	4.11	5.00	No
		233	7115	4.24	5.00	No
	802.11ax(HE40) (SU)	3	5965	6.83	8.00	No
		51	6205	6.72	8.00	No
		91	6405	6.90	8.00	No
		99	6445	6.98	8.00	No
		107	6485	6.75	8.00	No
		115	6525	6.85	8.00	No
		123	6565	6.90	8.00	No
		147	6685	6.58	8.00	No
		179	6845	6.75	8.00	No
		187	6885	6.39	8.00	No
		195	6925	6.99	8.00	No
		211	7005	6.86	8.00	No
		227	7085	7.00	8.00	No
	802.11ax(HE80) (SU)	7	5985	9.85	10.50	No
		55	6225	9.29	10.50	No
		87	6385	9.48	10.50	No
		103	6465	9.57	10.50	No
		119	6545	9.41	10.50	No
		135	6625	9.35	10.50	No
		151	6705	9.12	10.50	No
167		6785	9.17	10.50	No	
183		6865	9.12	10.50	No	
199		6945	9.48	10.50	No	
215		7025	9.76	10.50	No	
802.11ax(HE160)	15	6025	11.97	12.50	No	

	(SU)	47	6185	11.30	12.50	No
		79	6345	11.90	12.50	No
		111	6505	12.08	12.50	No
		143	6665	11.76	12.50	No
		175	6825	11.83	12.50	No
		207	6985	7.58	9.00	No
	802.11ax(HE20) (RU26)	1	5955	-5.63	-4.00	No
		49	6195	-5.95	-4.00	No
		93	6415	-5.56	-4.00	No
		97	6435	-5.63	-4.00	No
		105	6475	-5.94	-4.00	No
		113	6515	-5.95	-4.00	No
		117	6535	-5.66	-4.00	No
		149	6695	-5.07	-4.00	No
		181	6855	-5.53	-4.00	No
		185	6875	-5.45	-4.00	No
		189	6895	-5.10	-4.00	No
		209	6995	-5.22	-4.00	No
		229	7095	-4.35	-4.00	No
		233	7115	-4.18	-4.00	No
	802.11ax(HE20) (RU52)	1	5955	-2.47	-1.50	No
		49	6195	-2.58	-1.50	No
		93	6415	-2.76	-1.50	No
		97	6435	-2.31	-1.50	No
		105	6475	-2.44	-1.50	No
		113	6515	-2.27	-1.50	No
		117	6535	-2.63	-1.50	No
		149	6695	-2.36	-1.50	No
		181	6855	-2.28	-1.50	No
		185	6875	-2.38	-1.50	No
		189	6895	-2.39	-1.50	No
		209	6995	-2.06	-1.50	No
		229	7095	-0.83	0.00	No
233		7115	-1.05	0.00	No	
802.11ax(HE20) (RU106)	1	5955	0.32	2.00	No	
	49	6195	0.38	2.00	No	
	93	6415	0.41	2.00	No	
	97	6435	0.39	2.00	No	
	105	6475	0.32	2.00	No	
	113	6515	0.22	2.00	No	
	117	6535	0.21	2.00	No	
	149	6695	0.30	2.00	No	
	181	6855	0.04	2.00	No	



		185	6875	0.28	2.00	No
		189	6895	0.58	2.00	No
		209	6995	0.66	2.00	No
		229	7095	1.53	2.00	No
		233	7115	1.73	2.00	No

Note: For WiFi SAR testing was performed on single antenna RF power in SISO mode that is larger to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission used more conservative "Max. (main ant) + Max. (aux. ant) " method to determine SAR compliance. When the sum of 1-g SISO transmission SAR measurement is <1.6 W/kg, MIMO SAR test is not required.

## 8.1.10 2.4G WIFI (SISO-Main Antenna) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	11.65	12.00	Yes
		6	2437	11.68	12.00	Yes
		10	2457	11.66	12.00	No
		11	2462	<b>11.75</b>	12.00	Yes
		12	2467	11.37	12.00	No
		13	2472	11.97	12.00	No
	802.11g	1	2412	11.48	12.00	No
		2	2417	11.78	12.00	No
		6	2437	11.55	12.00	No
		10	2457	11.72	12.00	No
		11	2462	11.55	12.00	No
		12	2467	11.67	12.00	No
	VHT20	1	2412	11.95	12.00	No
		2	2417	11.83	12.00	No
		6	2437	11.52	12.00	No
		10	2457	11.69	12.00	No
		11	2462	11.73	12.00	No
		12	2467	11.84	12.00	No
	VHT40	3	2422	11.62	12.00	No
		6	2437	11.33	12.00	No
		9	2452	11.86	12.00	No
		10	2457	11.70	12.00	No
		11	2462	11.21	12.00	No
	802.11ax(HE20) (SU)	1	2412	11.82	12.00	No
		2	2417	11.47	12.00	No
		6	2437	11.88	12.00	No
		10	2457	11.80	12.00	No
		11	2462	11.47	12.00	No
		12	2467	11.47	12.00	No
	802.11ax(HE40) (SU)	3	2422	11.77	12.00	No
		6	2437	11.90	12.00	No
		9	2452	11.85	12.00	No
10		2457	11.99	12.00	No	

		11	2462	11.11	12.00	No
	802.11ax(HE20) (RU26)	1	2412	11.79	12.00	No
		6	2437	11.60	12.00	No
		11	2462	10.64	12.00	No
		12	2467	6.14	8.00	No
		13	2472	-3.52	-2.00	No
	802.11ax(HE20) (RU52)	1	2412	11.71	12.00	No
		6	2437	11.53	12.00	No
		11	2462	10.75	12.00	No
		12	2467	8.29	10.00	No
		13	2472	0.45	2.00	No
	802.11ax(HE20) (RU106)	1	2412	11.69	12.00	No
		6	2437	11.58	12.00	No
		11	2462	11.45	12.00	No
		12	2467	11.36	12.00	No
		13	2472	3.34	5.00	No

Note: According KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.

Adjusted SAR = Report SAR \* (max power (OFDM)/ max power (DSSS)) = 0.537 \* (15.85mW/15.85mW) = 0.537 W/Kg, so the 2.4G OFDM SAR test is not required.

## 8.1.11 2.4G WIFI (SISO-Aux. Antenna) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	11.47	12.00	Yes
		6	2437	11.55	12.00	Yes
		10	2457	11.59	12.00	No
		11	2462	<b>11.60</b>	12.00	Yes
		12	2467	11.52	12.00	No
		13	2472	11.54	12.00	No
	802.11g	1	2412	11.46	12.00	No
		2	2417	11.51	12.00	No
		6	2437	11.57	12.00	No
		10	2457	11.99	12.00	No
		11	2462	11.56	12.00	No
		12	2467	11.77	12.00	No
	VHT20	1	2412	11.52	12.00	No
		2	2417	11.56	12.00	No
		6	2437	11.65	12.00	No
		10	2457	11.65	12.00	No
		11	2462	11.65	12.00	No
		12	2467	11.81	12.00	No
	VHT40	3	2422	11.46	12.00	No
		6	2437	11.53	12.00	No
		9	2452	11.54	12.00	No
		10	2457	11.36	12.00	No
		11	2462	10.89	12.00	No
	802.11ax(HE20) (SU)	1	2412	11.50	12.00	No
		2	2417	11.42	12.00	No
		6	2437	11.33	12.00	No
		10	2457	11.57	12.00	No
		11	2462	11.42	12.00	No
		12	2467	11.53	12.00	No
	802.11ax(HE40) (SU)	3	2422	11.31	12.00	No
		6	2437	11.31	12.00	No
		9	2452	11.88	12.00	No
10		2457	11.91	12.00	No	

		11	2462	11.30	12.00	No
	802.11ax(HE20) (RU26)	1	2412	11.51	12.00	No
		6	2437	11.89	12.00	No
		11	2462	10.87	12.00	No
		12	2467	6.24	12.00	No
		13	2472	-3.29	12.00	No
	802.11ax(HE20) (RU52)	1	2412	9.63	12.00	No
		6	2437	9.49	12.00	No
		11	2462	8.98	12.00	No
		12	2467	6.56	12.00	No
		13	2472	0.28	12.00	No
	802.11ax(HE20) (RU106)	1	2412	11.75	12.00	No
		6	2437	11.46	12.00	No
		11	2462	11.86	12.00	No
		12	2467	11.61	12.00	No
		13	2472	3.48	12.00	No

Note: According KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.

Adjusted SAR = Report SAR \* (max power (OFDM)/ max power (DSSS)) = 0.424 \* (15.85mW/15.85mW) = 0.424 W/Kg, so the 2.4G OFDM SAR test is not required.

## 8.1.12 2.4G WIFI (MIMO) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	14.57	15.00	No
		6	2437	14.63	15.00	No
		10	2457	14.64	15.00	No
		11	2462	14.69	15.00	No
		12	2467	14.46	15.00	No
		13	2472	8.71	9.00	No
	802.11g	1	2412	14.48	15.00	No
		2	2417	14.66	15.00	No
		6	2437	14.57	15.00	No
		10	2457	14.87	15.00	No
		11	2462	14.57	15.00	No
		12	2467	14.73	15.00	No
	VHT20	1	2412	14.75	15.00	No
		2	2417	14.71	15.00	No
		6	2437	14.60	15.00	No
		10	2457	14.68	15.00	No
		11	2462	14.70	15.00	No
		12	2467	14.84	15.00	No
	VHT40	3	2422	14.55	15.00	No
		6	2437	14.44	15.00	No
		9	2452	14.71	15.00	No
		10	2457	14.54	15.00	No
		11	2462	14.06	15.00	No
	802.11ax(HE20) (SU)	1	2412	14.67	15.00	No
		2	2417	14.46	15.00	No
		6	2437	14.62	15.00	No
		10	2457	14.70	15.00	No
		11	2462	14.46	15.00	No
		12	2467	14.51	15.00	No
	802.11ax(HE40) (SU)	13	2472	8.26	9.00	No
		3	2422	14.56	15.00	No
		6	2437	14.63	15.00	No
9		2452	14.88	15.00	No	
		10	2457	14.96	15.00	No

		11	2462	14.22	15.00	No
	802.11ax(HE20) (RU26)	1	2412	14.66	15.00	No
		6	2437	14.76	15.00	No
		11	2462	13.77	15.00	No
		12	2467	9.20	11.00	No
		13	2472	-2.99	-2.00	No
	802.11ax(HE20) (RU52)	1	2412	13.80	15.00	No
		6	2437	13.64	15.00	No
		11	2462	12.96	15.00	No
		12	2467	10.52	15.00	No
		13	2472	3.12	4.00	No
	802.11ax(HE20) (RU106)	1	2412	14.73	15.00	No
		6	2437	14.53	15.00	No
		11	2462	14.67	15.00	No
		12	2467	14.50	15.00	No
		13	2472	6.30	6.00	No

Note: For WiFi SAR testing was performed on single antenna RF power in SISO mode that is larger to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission used more conservative "Max. (main ant) + Max. (aux. ant)" method to determine SAR compliance. When the sum of 1-g SISO transmission SAR measurement is <1.6 W/kg, MIMO SAR test is not required.

## 8.1.13 5G WIFI (SISO-Main Antenna) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	10.45	11.00	No
		40	5200	10.46	11.00	No
		48	5240	10.69	11.00	No
	802.11n(HT20)	36	5180	10.57	11.00	No
		40	5200	10.70	11.00	No
		48	5240	10.46	11.00	No
	802.11n(HT40)	38	5190	10.74	11.00	No
		46	5230	10.27	11.00	No
	802.11ac(VHT20)	36	5180	10.66	11.00	No
		40	5200	10.36	11.00	No
		48	5240	10.41	11.00	No
	802.11ac(VHT40)	38	5190	10.66	11.00	No
		46	5230	10.32	11.00	No
	802.11ac(VHT80)	42	5210	10.65	11.00	No
	802.11ac(VHT160)	50	5250	9.95	11.00	No
	802.11ax(HE20) (SU)	36	5180	10.42	11.00	No
		40	5200	10.19	11.00	No
		48	5240	10.35	11.00	No
	802.11ax(HE40) (SU)	38	5190	10.75	11.00	No
		46	5230	10.16	11.00	No
	802.11ax(HE80) (SU)	42	5210	10.27	11.00	No
	802.11ax(HE160) (SU)	50	5250	9.77	11.00	No
	802.11ax(HE20) (RU26)	36	5180	10.74	11.00	No
		40	5200	10.43	11.00	No
48		5240	10.68	11.00	No	
802.11ax(HE20) (RU52)	36	5180	10.62	11.00	No	
	40	5200	10.65	11.00	No	
	48	5240	10.33	11.00	No	
802.11ax(HE20) (RU106)	36	5180	10.69	11.00	No	
	40	5200	10.35	11.00	No	
	48	5240	10.62	11.00	No	
5.3 (5.25~5.35)	802.11a	52	5260	10.67	11.00	No
		60	5300	10.37	11.00	No
		64	5320	10.37	11.00	No
	802.11n(HT20)	52	5260	10.53	11.00	No
		60	5300	10.38	11.00	No
		64	5320	10.34	11.00	No
	802.11n(HT40)	54	5270	10.76	11.00	No



		62	5310	10.39	11.00	No
	802.11ac(VHT20)	52	5260	10.56	11.00	No
		60	5300	10.31	11.00	No
		64	5320	10.31	11.00	No
		802.11ac(VHT40)	54	5270	10.56	11.00
	62		5310	10.31	11.00	No
	802.11ac(VHT80)	58	5290	<b>10.86</b>	11.00	Yes
	802.11ax(HE20) (SU)	52	5260	10.52	11.00	No
		60	5300	10.59	11.00	No
		64	5320	10.59	11.00	No
	802.11ax(HE40) (SU)	54	5270	10.66	11.00	No
		62	5310	10.57	11.00	No
	802.11ax(HE80) (SU)	58	5290	10.42	11.00	No
	802.11ax(HE20) (RU26)	52	5260	10.09	11.00	No
		60	5300	10.84	11.00	No
		64	5320	10.83	11.00	No
	802.11ax(HE20) (RU52)	52	5260	10.57	11.00	No
		60	5300	10.60	11.00	No
		64	5320	10.37	11.00	No
	802.11ax(HE20) (RU106)	52	5260	10.31	11.00	No
60		5300	10.19	11.00	No	
64		5320	10.60	11.00	No	
5.6 (5.47~5.725)	802.11a	100	5500	10.59	11.00	No
		116	5580	10.57	11.00	No
		140	5700	10.72	11.00	No
		144	5720	10.25	11.00	No
	802.11n(HT20)	100	5500	10.44	11.00	No
		116	5580	10.71	11.00	No
		140	5700	10.19	11.00	No
		144	5720	10.75	11.00	No
	802.11n(HT40)	102	5510	10.53	11.00	No
		110	5550	10.25	11.00	No
		134	5670	10.45	11.00	No
		142	5710	10.81	11.00	No
	802.11ac(VHT20)	100	5500	10.67	11.00	No
		116	5580	10.38	11.00	No
		140	5700	10.07	11.00	No
		144	5720	10.88	11.00	No
	802.11ac(VHT40)	102	5510	10.64	11.00	No
		110	5550	10.42	11.00	No
		134	5670	10.43	11.00	No
		142	5710	10.36	11.00	No

	802.11ac(VHT80)	106	5530	10.65	11.00	No
		122	5610	10.48	11.00	No
		138	5690	10.49	11.00	No
	802.11ac(VHT160)	114	5570	<b>10.65</b>	11.00	Yes
	802.11ax(HE20) (SU)	100	5500	10.50	11.00	No
		116	5580	10.58	11.00	No
		140	5700	10.42	11.00	No
		144	5720	10.85	11.00	No
	802.11ax(HE40) (SU)	102	5510	10.89	11.00	No
		110	5550	10.55	11.00	No
		134	5670	10.46	11.00	No
		142	5710	10.02	11.00	No
	802.11ax(HE80) (SU)	106	5530	10.92	11.00	No
		122	5610	10.54	11.00	No
		138	5690	10.09	11.00	No
	802.11ax(HE160) (SU)	114	5570	10.71	11.00	No
	802.11ax(HE20) (RU26)	100	5500	10.44	11.00	No
		116	5580	10.14	11.00	No
		140	5700	10.96	11.00	No
		144	5720	10.55	11.00	No
802.11ax(HE20) (RU52)	100	5500	10.54	11.00	No	
	116	5580	10.91	11.00	No	
	140	5700	10.29	11.00	No	
	144	5720	8.35	11.00	No	
802.11ax(HE20) (RU106)	100	5500	10.37	11.00	No	
	116	5580	10.78	11.00	No	
	140	5700	10.36	11.00	No	
	144	5720	10.39	11.00	No	
5.8 (5.725~5.85)	802.11a	149	5745	10.32	11.00	No
		157	5785	10.54	11.00	No
		165	5825	10.38	11.00	No
	802.11n(HT20)	149	5745	10.28	11.00	No
		157	5785	10.76	11.00	No
		165	5825	10.26	11.00	No
	802.11n(HT40)	151	5755	10.39	11.00	No
		159	5795	10.81	11.00	No
	802.11ac(VHT20)	149	5745	10.31	11.00	No
		157	5785	10.52	11.00	No
		165	5825	10.41	11.00	No
	802.11ac(VHT40)	151	5755	10.44	11.00	No
		159	5795	10.80	11.00	No
	802.11ac(VHT80)	155	5775	<b>10.80</b>	11.00	Yes

	802.11ax(HE20) (SU)	149	5745	9.91	11.00	No
		157	5785	10.61	11.00	No
		165	5825	10.92	11.00	No
	802.11ax(HE40) (SU)	151	5755	10.47	11.00	No
		159	5795	10.71	11.00	No
	802.11ax(HE80) (SU)	155	5775	10.32	11.00	No
	802.11ax(HE20) (RU26)	149	5745	10.68	11.00	No
		157	5785	10.31	11.00	No
		165	5825	10.55	11.00	No
	802.11ax(HE20) (RU52)	149	5745	10.74	11.00	No
		157	5785	10.36	11.00	No
		165	5825	10.66	11.00	No
802.11ax(HE20) (RU106)	149	5745	10.79	11.00	No	
	157	5785	10.51	11.00	No	
	165	5825	10.75	11.00	No	
5.9 (5.805~5.89 5)	802.11a	169	5845	10.74	11.00	No
		173	5865	10.94	11.00	No
		177	5885	10.91	11.00	No
	802.11n(HT20)	169	5845	10.78	11.00	No
		173	5865	10.50	11.00	No
		177	5885	10.61	11.00	No
	802.11n(HT40)	167	5835	10.47	11.00	No
		175	5875	10.65	11.00	No
	802.11ac(VHT20)	169	5845	10.78	11.00	No
		173	5865	10.44	11.00	No
		177	5885	10.62	11.00	No
	802.11ac(VHT40)	167	5835	10.57	11.00	No
		175	5875	10.94	11.00	No
	802.11ac(VHT80)	171	5855	10.75	11.00	No
	802.11ac(VHT160)	163	5815	<b>10.61</b>	11.00	Yes
	802.11ax(HE20) (SU)	169	5845	10.80	11.00	No
		173	5865	10.39	11.00	No
		177	5885	10.37	11.00	No
	802.11ax(HE40) (SU)	167	5835	10.39	11.00	No
		175	5875	10.45	11.00	No
	802.11ax(HE80) (SU)	171	5855	10.84	11.00	No
	802.11ax(HE160) (SU)	163	5815	10.62	11.00	No
	802.11ax(HE20) (RU26)	169	5845	10.19	11.00	No
		173	5865	10.45	11.00	No
177		5885	8.90	11.00	No	

	802.11ax(HE20) (RU52)	169	5845	10.44	11.00	No
		173	5865	10.22	11.00	No
		177	5885	10.44	11.00	No
	802.11ax(HE20) (RU106)	169	5845	10.76	11.00	No
		173	5865	10.80	11.00	No
		177	5885	10.62	11.00	No

Note: When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

## 8.1.14 5G WIFI (SISO-Aux. Antenna) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	9.58	10.00	No
		40	5200	9.69	10.00	No
		48	5240	9.33	10.00	No
	802.11n(HT20)	36	5180	9.62	10.00	No
		40	5200	9.46	10.00	No
		48	5240	9.62	10.00	No
	802.11n(HT40)	38	5190	9.90	10.00	No
		46	5230	9.39	10.00	No
	802.11ac(VHT20)	36	5180	9.85	10.00	No
		40	5200	9.44	10.00	No
		48	5240	9.58	10.00	No
	802.11ac(VHT40)	38	5190	9.96	10.00	No
		46	5230	9.42	10.00	No
	802.11ac(VHT80)	42	5210	9.38	10.00	No
	802.11ac(VHT160)	50	5250	8.62	10.00	No
	802.11ax(HE20) (SU)	36	5180	9.58	10.00	No
		40	5200	9.61	10.00	No
		48	5240	9.60	10.00	No
	802.11ax(HE40) (SU)	38	5190	9.58	10.00	No
		46	5230	9.45	10.00	No
	802.11ax(HE80) (SU)	42	5210	9.46	10.00	No
802.11ax(HE160) (SU)	50	5250	9.06	10.00	No	
802.11ax(HE20) (RU26)	36	5180	9.64	10.00	No	
	40	5200	9.31	10.00	No	
	48	5240	9.21	10.00	No	
802.11ax(HE20) (RU52)	36	5180	9.59	10.00	No	
	40	5200	9.43	10.00	No	
	48	5240	9.89	10.00	No	
802.11ax(HE20) (RU106)	36	5180	9.60	10.00	No	
	40	5200	9.46	10.00	No	
	48	5240	9.47	10.00	No	
5.3 (5.25~5.35)	802.11a	52	5260	9.70	10.00	No
		60	5300	9.49	10.00	No
		64	5320	9.73	10.00	No
	802.11n(HT20)	52	5260	9.66	10.00	No
		60	5300	9.78	10.00	No
		64	5320	9.72	10.00	No
	802.11n(HT40)	54	5270	9.52	10.00	No

		62	5310	9.72	10.00	No
	802.11ac(VHT20)	52	5260	9.62	10.00	No
		60	5300	9.81	10.00	No
		64	5320	9.53	10.00	No
	802.11ac(VHT40)	54	5270	9.74	10.00	No
		62	5310	9.77	10.00	No
	802.11ac(VHT80)	58	5290	<b>9.88</b>	10.00	Yes
	802.11ax(HE20) (SU)	52	5260	9.78	10.00	No
		60	5300	9.46	10.00	No
		64	5320	9.55	10.00	No
	802.11ax(HE40) (SU)	54	5270	9.49	10.00	No
		62	5310	9.67	10.00	No
	802.11ax(HE80) (SU)	58	5290	9.42	10.00	No
	802.11ax(HE20) (RU26)	52	5260	9.52	10.00	No
		60	5300	9.89	10.00	No
		64	5320	9.81	10.00	No
802.11ax(HE20) (RU52)	52	5260	9.67	10.00	No	
	60	5300	9.67	10.00	No	
	64	5320	9.40	10.00	No	
802.11ax(HE20) (RU106)	52	5260	9.78	10.00	No	
	60	5300	9.53	10.00	No	
	64	5320	9.79	10.00	No	
5.6 (5.47~5.725)	802.11a	100	5500	9.40	10.00	No
		116	5580	9.38	10.00	No
		140	5700	9.97	10.00	No
		144	5720	9.43	10.00	No
	802.11n(HT20)	100	5500	9.44	10.00	No
		116	5580	9.60	10.00	No
		140	5700	9.42	10.00	No
		144	5720	10.00	10.00	No
	802.11n(HT40)	102	5510	9.87	10.00	No
		110	5550	9.72	10.00	No
		134	5670	9.76	10.00	No
		142	5710	9.82	10.00	No
	802.11ac(VHT20)	100	5500	9.53	10.00	No
		116	5580	9.72	10.00	No
		140	5700	9.37	10.00	No
		144	5720	9.55	10.00	No
	802.11ac(VHT40)	102	5510	9.66	10.00	No
		110	5550	9.67	10.00	No
		134	5670	9.90	10.00	No
		142	5710	9.45	10.00	No

	802.11ac(VHT80)	106	5530	9.83	10.00	No
		122	5610	9.81	10.00	No
		138	5690	9.80	10.00	No
	802.11ac(VHT160)	114	5570	<b>9.83</b>	10.00	Yes
	802.11ax(HE20) (SU)	100	5500	9.46	10.00	No
		116	5580	9.52	10.00	No
		140	5700	9.12	10.00	No
		144	5720	9.52	10.00	No
	802.11ax(HE40) (SU)	102	5510	9.99	10.00	No
		110	5550	9.79	10.00	No
		134	5670	9.70	10.00	No
		142	5710	9.67	10.00	No
	802.11ax(HE80) (SU)	106	5530	9.58	10.00	No
		122	5610	9.78	10.00	No
		138	5690	9.71	10.00	No
	802.11ax(HE160) (SU)	114	5570	9.84	10.00	No
	802.11ax(HE20) (RU26)	100	5500	9.35	10.00	No
		116	5580	9.62	10.00	No
		140	5700	10.00	10.00	No
		144	5720	9.29	10.00	No
	802.11ax(HE20) (RU52)	100	5500	9.42	10.00	No
		116	5580	9.36	10.00	No
		140	5700	9.53	10.00	No
		144	5720	7.30	10.00	No
	802.11ax(HE20) (RU106)	100	5500	9.59	10.00	No
		116	5580	9.29	10.00	No
		140	5700	9.62	10.00	No
		144	5720	9.71	10.00	No
5.8 (5.725~5.85)	802.11a	149	5745	9.49	10.00	No
		157	5785	9.58	10.00	No
		165	5825	9.72	10.00	No
	802.11n(HT20)	149	5745	9.78	10.00	No
		157	5785	9.64	10.00	No
		165	5825	9.58	10.00	No
	802.11n(HT40)	151	5755	9.55	10.00	No
		159	5795	9.68	10.00	No
	802.11ac(VHT20)	149	5745	9.75	10.00	No
		157	5785	9.55	10.00	No
		165	5825	9.74	10.00	No
	802.11ac(VHT40)	151	5755	9.34	10.00	No
		159	5795	9.50	10.00	No
	802.11ac(VHT80)	155	5775	<b>9.37</b>	10.00	Yes

	802.11ax(HE20) (SU)	149	5745	9.48	10.00	No
		157	5785	9.34	10.00	No
		165	5825	9.47	10.00	No
	802.11ax(HE40) (SU)	151	5755	9.41	10.00	No
		159	5795	9.63	10.00	No
	802.11ax(HE80) (SU)	155	5775	9.45	10.00	No
	802.11ax(HE20) (RU26)	149	5745	9.65	10.00	No
		157	5785	9.64	10.00	No
		165	5825	9.75	10.00	No
	802.11ax(HE20) (RU52)	149	5745	9.63	10.00	No
		157	5785	9.22	10.00	No
		165	5825	9.38	10.00	No
802.11ax(HE20) (RU106)	149	5745	9.74	10.00	No	
	157	5785	9.27	10.00	No	
	165	5825	9.84	10.00	No	
5.9 (5.805~5.89 5)	802.11a	169	5845	9.70	10.00	No
		173	5865	9.85	10.00	No
		177	5885	9.59	10.00	No
	802.11n(HT20)	169	5845	9.76	10.00	No
		173	5865	9.37	10.00	No
		177	5885	9.71	10.00	No
	802.11n(HT40)	167	5835	9.52	10.00	No
		175	5875	9.61	10.00	No
	802.11ac(VHT20)	169	5845	9.51	10.00	No
		173	5865	9.42	10.00	No
		177	5885	9.50	10.00	No
	802.11ac(VHT40)	167	5835	9.30	10.00	No
		175	5875	9.58	10.00	No
	802.11ac(VHT80)	171	5855	9.85	10.00	No
	802.11ac(VHT160)	163	5815	<b>9.42</b>	10.00	Yes
	802.11ax(HE20) (SU)	169	5845	9.79	10.00	No
		173	5865	9.55	10.00	No
		177	5885	9.45	10.00	No
	802.11ax(HE40) (SU)	167	5835	9.46	10.00	No
		175	5875	9.55	10.00	No
	802.11ax(HE80) (SU)	171	5855	9.61	10.00	No
	802.11ax(HE160) (SU)	163	5815	9.56	10.00	No
	802.11ax(HE20) (RU26)	169	5845	9.42	10.00	No
		173	5865	9.36	10.00	No
177		5885	7.77	10.00	No	



	802.11ax(HE20) (RU52)	169	5845	9.17	10.00	No
		173	5865	9.55	10.00	No
		177	5885	9.64	10.00	No
	802.11ax(HE20) (RU106)	169	5845	9.57	10.00	No
		173	5865	9.38	10.00	No
		177	5885	9.67	10.00	No

Note: When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

## 8.1.15 5G WIFI (MIMO) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	13.05	14.00	No
		40	5200	13.10	14.00	No
		48	5240	13.07	14.00	No
	802.11n(HT20)	36	5180	13.13	14.00	No
		40	5200	13.13	14.00	No
		48	5240	13.07	14.00	No
	802.11n(HT40)	38	5190	13.35	14.00	No
		46	5230	12.86	14.00	No
	802.11ac(VHT20)	36	5180	13.28	14.00	No
		40	5200	12.93	14.00	No
		48	5240	13.03	14.00	No
	802.11ac(VHT40)	38	5190	13.33	14.00	No
		46	5230	12.90	14.00	No
	802.11ac(VHT80)	42	5210	13.07	14.00	No
	802.11ac(VHT160)	50	5250	12.02	14.00	No
	802.11ax(HE20) (SU)	36	5180	13.03	14.00	No
		40	5200	12.92	14.00	No
		48	5240	13.00	14.00	No
	802.11ax(HE40) (SU)	38	5190	13.21	14.00	No
		46	5230	12.83	14.00	No
	802.11ax(HE80) (SU)	42	5210	12.89	14.00	No
	802.11ax(HE160) (SU)	50	5250	12.10	14.00	No
	802.11ax(HE20) (RU26)	36	5180	11.84	13.00	No
		40	5200	12.11	14.00	No
48		5240	11.97	13.00	No	
802.11ax(HE20) (RU52)	36	5180	13.15	14.00	No	
	40	5200	13.09	14.00	No	
	48	5240	13.13	14.00	No	
802.11ax(HE20) (RU106)	36	5180	13.19	14.00	No	
	40	5200	12.94	14.00	No	
	48	5240	13.09	14.00	No	
5.3 (5.25~5.35)	802.11a	52	5260	13.22	14.00	No
		60	5300	12.96	14.00	No
		64	5320	13.07	14.00	No
	802.11n(HT20)	52	5260	13.13	14.00	No
		60	5300	13.10	14.00	No
		64	5320	13.05	14.00	No
	802.11n(HT40)	54	5270	13.19	14.00	No

		62	5310	13.08	14.00	No
	802.11ac(VHT20)	52	5260	13.13	14.00	No
		60	5300	13.08	14.00	No
		64	5320	12.95	14.00	No
	802.11ac(VHT40)	54	5270	13.18	14.00	No
		62	5310	13.06	14.00	No
	802.11ac(VHT80)	58	5290	13.41	14.00	No
	802.11ax(HE20) (SU)	52	5260	13.18	14.00	No
		60	5300	13.07	14.00	No
		64	5320	13.11	14.00	No
	802.11ax(HE40) (SU)	54	5270	13.12	14.00	No
		62	5310	13.15	14.00	No
	802.11ax(HE80) (SU)	58	5290	12.96	14.00	No
	802.11ax(HE20) (RU26)	52	5260	11.91	13.00	No
		60	5300	11.43	13.00	No
		64	5320	11.80	13.00	No
	802.11ax(HE20) (RU52)	52	5260	13.15	14.00	No
		60	5300	13.17	14.00	No
		64	5320	12.92	14.00	No
	802.11ax(HE20) (RU106)	52	5260	13.06	14.00	No
60		5300	12.88	14.00	No	
64		5320	13.22	14.00	No	
5.6 (5.47~5.725)	802.11a	100	5500	13.05	14.00	No
		116	5580	13.03	14.00	No
		140	5700	13.37	14.00	No
		144	5720	12.87	14.00	No
	802.11n(HT20)	100	5500	12.98	14.00	No
		116	5580	13.20	14.00	No
		140	5700	12.83	14.00	No
		144	5720	13.40	14.00	No
	802.11n(HT40)	102	5510	13.22	14.00	No
		110	5550	13.00	14.00	No
		134	5670	13.13	14.00	No
		142	5710	13.35	14.00	No
	802.11ac(VHT20)	100	5500	13.15	14.00	No
		116	5580	13.07	14.00	No
		140	5700	12.74	14.00	No
		144	5720	13.28	14.00	No
	802.11ac(VHT40)	102	5510	13.19	14.00	No
		110	5550	13.07	14.00	No
		134	5670	13.18	14.00	No
		142	5710	12.94	14.00	No

	802.11ac(VHT80)	106	5530	13.27	14.00	No
		122	5610	13.17	14.00	No
		138	5690	13.17	14.00	No
	802.11ac(VHT160)	114	5570	12.68	14.00	No
	802.11ax(HE20) (SU)	100	5500	13.02	14.00	No
		116	5580	13.09	14.00	No
		140	5700	12.83	14.00	No
		144	5720	13.25	14.00	No
	802.11ax(HE40) (SU)	102	5510	13.47	14.00	No
		110	5550	13.20	14.00	No
		134	5670	13.11	14.00	No
		142	5710	12.86	14.00	No
	802.11ax(HE80) (SU)	106	5530	13.31	14.00	No
		122	5610	13.19	14.00	No
		138	5690	12.91	14.00	No
	802.11ax(HE160) (SU)	114	5570	12.76	14.00	No
	802.11ax(HE20) (RU26)	100	5500	12.30	14.00	No
		116	5580	12.16	14.00	No
		140	5700	11.95	13.00	No
		144	5720	12.47	14.00	No
	802.11ax(HE20) (RU52)	100	5500	13.03	14.00	No
		116	5580	13.21	14.00	No
		140	5700	12.94	14.00	No
		144	5720	10.87	12.00	No
802.11ax(HE20) (RU106)	100	5500	13.01	14.00	No	
	116	5580	13.11	14.00	No	
	140	5700	13.02	14.00	No	
	144	5720	13.07	14.00	No	
5.8 (5.725~5.85)	802.11a	149	5745	12.94	14.00	No
		157	5785	13.10	14.00	No
		165	5825	13.07	14.00	No
	802.11n(HT20)	149	5745	13.05	14.00	No
		157	5785	13.25	14.00	No
		165	5825	12.94	14.00	No
	802.11n(HT40)	151	5755	13.00	14.00	No
		159	5795	13.29	14.00	No
	802.11ac(VHT20)	149	5745	13.05	14.00	No
		157	5785	13.07	14.00	No
		165	5825	13.10	14.00	No
	802.11ac(VHT40)	151	5755	12.94	14.00	No
		159	5795	13.21	14.00	No
	802.11ac(VHT80)	155	5775	13.15	14.00	No

	802.11ax(HE20) (SU)	149	5745	12.71	14.00	No
		157	5785	13.03	14.00	No
		165	5825	13.27	14.00	No
	802.11ax(HE40) (SU)	151	5755	12.98	14.00	No
		159	5795	13.21	14.00	No
	802.11ax(HE80) (SU)	155	5775	12.92	14.00	No
	802.11ax(HE20) (RU26)	149	5745	13.21	14.00	No
		157	5785	13.00	14.00	No
		165	5825	13.18	14.00	No
	802.11ax(HE20) (RU52)	149	5745	13.23	14.00	No
		157	5785	12.84	14.00	No
		165	5825	13.08	14.00	No
802.11ax(HE20) (RU106)	149	5745	13.31	14.00	No	
	157	5785	12.94	14.00	No	
	165	5825	13.33	14.00	No	
5.9 (5.805~5.89 5)	802.11a	169	5845	13.26	14.00	No
		173	5865	13.44	14.00	No
		177	5885	13.31	14.00	No
	802.11n(HT20)	169	5845	13.31	14.00	No
		173	5865	12.98	14.00	No
		177	5885	13.19	14.00	No
	802.11n(HT40)	167	5835	13.03	14.00	No
		175	5875	13.17	14.00	No
	802.11ac(VHT20)	169	5845	13.20	14.00	No
		173	5865	12.97	14.00	No
		177	5885	13.11	14.00	No
	802.11ac(VHT40)	167	5835	12.99	14.00	No
		175	5875	13.32	14.00	No
	802.11ac(VHT80)	171	5855	13.33	14.00	No
	802.11ac(VHT160)	163	5815	13.07	14.00	No
	802.11ax(HE20) (SU)	169	5845	13.33	14.00	No
		173	5865	13.00	14.00	No
		177	5885	12.94	14.00	No
	802.11ax(HE40) (SU)	167	5835	12.96	14.00	No
		175	5875	13.03	14.00	No
	802.11ax(HE80) (SU)	171	5855	13.28	14.00	No
	802.11ax(HE160) (SU)	163	5815	13.13	14.00	No
	802.11ax(HE20) (RU26)	169	5845	9.33	10.00	No
		173	5865	9.53	10.00	No
177		5885	6.29	7.00	No	

	802.11ax(HE20) (RU52)	169	5845	12.83	14.00	No
		173	5865	12.74	14.00	No
		177	5885	11.91	13.00	No
	802.11ax(HE20) (RU106)	169	5845	13.22	14.00	No
		173	5865	13.16	14.00	No
		177	5885	13.18	14.00	No

Note: For WiFi SAR testing was performed on single antenna RF power in SISO mode that is larger to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission used more conservative "Max. (main ant) + Max. (aux. ant) " method to determine SAR compliance. When the sum of 1-g SISO transmission SAR measurement is <1.6 W/kg, MIMO SAR test is not required.

## 8.1.16 6G WIFI (SISO-Main Antenna) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax(HE20) (SU)	1	5955	6.43	7.50	No
		49	6195	6.56	7.50	No
		93	6415	6.24	7.50	No
		97	6435	6.19	7.50	No
		105	6475	6.40	7.50	No
		113	6515	6.15	7.50	No
		117	6535	6.24	7.50	No
		149	6695	6.54	7.50	No
		181	6855	6.55	7.50	No
		185	6875	6.23	7.50	No
		189	6895	6.34	7.50	No
		209	6995	5.95	7.50	No
		229	7095	6.42	7.50	No
		233	7115	6.65	7.50	No
	802.11ax(HE40) (SU)	3	5965	9.31	10.50	No
		51	6205	9.33	10.50	No
		91	6405	9.57	10.50	No
		99	6445	9.34	10.50	No
		107	6485	9.35	10.50	No
		115	6525	9.33	10.50	No
		123	6565	9.17	10.50	No
		147	6685	9.15	10.50	No
		179	6845	/	/	No
		187	6885	9.32	10.50	No
		195	6925	9.85	10.50	No
		211	7005	8.92	10.50	No
		227	7085	9.34	10.50	No
		802.11ax(HE80) (SU)	7	5985	9.79	10.50
	55		6225	10.05	10.50	No
	87		6385	9.99	10.50	No
	103		6465	9.98	10.50	No
	119		6545	10.19	10.50	No
	135		6625	9.88	10.50	No
	151		6705	10.04	10.50	No
	167		6785	10.33	10.50	No
	183		6865	10.11	10.50	No
	199		6945	10.10	10.50	No
	215	7025	9.54	10.50	No	
	802.11ax(HE160)	15	6025	9.96	10.50	Yes

	(SU)	47	6185	10.00	10.50	Yes
		79	6345	10.09	10.50	Yes
		111	6505	<b>10.15</b>	10.50	Yes
		143	6665	10.04	10.50	Yes
		175	6825	10.08	10.50	Yes
		207	6985	9.93	10.50	Yes
	802.11ax(HE20) (RU26)	1	5955	-2.75	-2.00	No
		49	6195	-3.00	-2.00	No
		93	6415	-2.64	-2.00	No
		97	6435	-2.80	-2.00	No
		105	6475	-3.14	-2.00	No
		113	6515	-2.61	-2.00	No
		117	6535	-3.27	-2.00	No
		149	6695	-2.65	-2.00	No
		181	6855	-2.99	-2.00	No
		185	6875	-2.63	-2.00	No
		189	6895	-2.43	-2.00	No
		209	6995	-2.60	-2.00	No
		229	7095	-1.63	-1.00	No
		233	7115	-1.48	-1.00	No
	802.11ax(HE20) (RU52)	1	5955	0.70	2.00	No
		49	6195	0.30	2.00	No
		93	6415	0.61	2.00	No
		97	6435	0.43	2.00	No
		105	6475	0.53	2.00	No
		113	6515	0.14	2.00	No
		117	6535	0.46	2.00	No
		149	6695	0.39	2.00	No
		181	6855	0.49	2.00	No
		185	6875	0.58	2.00	No
		189	6895	0.74	2.00	No
		209	6995	0.68	2.00	No
		229	7095	1.33	2.00	No
		233	7115	1.90	2.00	No
	802.11ax(HE20) (RU106)	1	5955	3.51	5.00	No
		49	6195	3.22	5.00	No
93		6415	3.03	5.00	No	
97		6435	3.08	5.00	No	
105		6475	3.27	5.00	No	
113		6515	3.28	5.00	No	
117		6535	3.29	5.00	No	
149		6695	3.44	5.00	No	
181		6855	3.21	5.00	No	



		185	6875	3.24	5.00	No
		189	6895	3.30	5.00	No
		209	6995	3.40	5.00	No
		229	7095	4.28	5.00	No
		233	7115	4.36	5.00	No

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.

8.1.17 6G WIFI (SISO-Aux. Antenna) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax(HE20) (SU)	1	5955	6.46	7.50	No
		49	6195	6.07	7.50	No
		93	6415	6.03	7.50	No
		97	6435	6.21	7.50	No
		105	6475	6.39	7.50	No
		113	6515	6.33	7.50	No
		117	6535	6.49	7.50	No
		149	6695	6.54	7.50	No
		181	6855	6.22	7.50	No
		185	6875	6.40	7.50	No
		189	6895	6.35	7.50	No
		209	6995	5.71	7.50	No
		229	7095	6.59	7.50	No
		233	7115	6.50	7.50	No
	802.11ax(HE40) (SU)	3	5965	9.47	10.50	No
		51	6205	9.47	10.50	No
		91	6405	9.56	10.50	No
		99	6445	9.58	10.50	No
		107	6485	9.30	10.50	No
		115	6525	9.56	10.50	No
		123	6565	9.48	10.50	No
		147	6685	9.32	10.50	No
		179	6845	/	/	No
		187	6885	9.42	10.50	No
		195	6925	9.82	10.50	No
		211	7005	8.96	10.50	No
		227	7085	9.69	10.50	No
		802.11ax(HE80) (SU)	7	5985	9.95	10.50
	55		6225	9.97	10.50	No
	87		6385	9.81	10.50	No
	103		6465	9.56	10.50	No
	119		6545	9.92	10.50	No
	135		6625	10.19	10.50	No
	151		6705	10.18	10.50	No
	167		6785	10.34	10.50	No
	183		6865	10.14	10.50	No
	199		6945	10.42	10.50	No
	802.11ax(HE160)	15	6025	10.10	10.50	Yes

	(SU)	47	6185	<b>10.18</b>	10.50	Yes
		79	6345	10.08	10.50	Yes
		111	6505	9.99	10.50	Yes
		143	6665	9.95	10.50	Yes
		175	6825	10.03	10.50	Yes
		207	6985	10.05	10.50	Yes
	802.11ax(HE20) (RU26)	1	5955	-2.54	-2.00	No
		49	6195	-3.13	-2.00	No
		93	6415	-3.06	-2.00	No
		97	6435	-2.89	-2.00	No
		105	6475	-3.08	-2.00	No
		113	6515	-2.62	-2.00	No
		117	6535	-3.15	-2.00	No
		149	6695	-2.92	-2.00	No
		181	6855	-2.98	-2.00	No
		185	6875	-2.64	-2.00	No
		189	6895	-2.22	-2.00	No
		209	6995	-2.84	-2.00	No
		229	7095	-1.81	-1.00	No
		233	7115	-1.65	-1.00	No
	802.11ax(HE20) (RU52)	1	5955	0.55	2.00	No
		49	6195	0.61	2.00	No
		93	6415	0.44	2.00	No
		97	6435	0.13	2.00	No
		105	6475	0.57	2.00	No
		113	6515	0.47	2.00	No
		117	6535	0.68	2.00	No
		149	6695	0.32	2.00	No
		181	6855	0.72	2.00	No
		185	6875	0.29	2.00	No
		189	6895	0.49	2.00	No
		209	6995	0.29	2.00	No
		229	7095	1.14	2.00	No
		233	7115	1.72	2.00	No
	802.11ax(HE20) (RU106)	1	5955	3.28	5.00	No
		49	6195	3.13	5.00	No
93		6415	2.76	5.00	No	
97		6435	2.95	5.00	No	
105		6475	3.32	5.00	No	
113		6515	3.37	5.00	No	
117		6535	3.22	5.00	No	
149		6695	3.41	5.00	No	
181		6855	3.16	5.00	No	

		185	6875	3.12	5.00	No
		189	6895	3.10	5.00	No
		209	6995	3.00	5.00	No
		229	7095	3.85	5.00	No
		233	7115	4.58	5.00	No

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.

## 8.1.18 6G WIFI (MIMO) (Tablet)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax(HE20) (SU)	1	5955	3.41	5.00	No
		49	6195	3.34	5.00	No
		93	6415	3.57	5.00	No
		97	6435	3.62	5.00	No
		105	6475	3.62	5.00	No
		113	6515	3.88	5.00	No
		117	6535	3.90	5.00	No
		149	6695	3.63	5.00	No
		181	6855	3.51	5.00	No
		185	6875	3.69	5.00	No
		189	6895	3.49	5.00	No
		209	6995	3.57	5.00	No
		229	7095	4.11	5.00	No
		233	7115	4.24	5.00	No
	802.11ax(HE40) (SU)	3	5965	6.83	8.00	No
		51	6205	6.72	8.00	No
		91	6405	6.90	8.00	No
		99	6445	6.98	8.00	No
		107	6485	6.75	8.00	No
		115	6525	6.85	8.00	No
		123	6565	6.90	8.00	No
		147	6685	6.58	8.00	No
		179	6845	6.75	8.00	No
		187	6885	6.39	8.00	No
		195	6925	6.99	8.00	No
		211	7005	6.86	8.00	No
		227	7085	7.00	8.00	No
	802.11ax(HE80) (SU)	7	5985	9.85	10.50	No
		55	6225	9.29	10.50	No
		87	6385	9.48	10.50	No
		103	6465	9.57	10.50	No
		119	6545	9.41	10.50	No
		135	6625	9.35	10.50	No
		151	6705	9.12	10.50	No
167		6785	9.17	10.50	No	
183		6865	9.12	10.50	No	
199		6945	9.48	10.50	No	
215	7025	9.76	10.50	No		
802.11ax(HE160)	15	6025	11.97	12.50	No	

	(SU)	47	6185	11.30	12.50	No
		79	6345	11.90	12.50	No
		111	6505	12.08	12.50	No
		143	6665	11.76	12.50	No
		175	6825	11.83	12.50	No
		207	6985	7.58	9.00	No
	802.11ax(HE20) (RU26)	1	5955	-5.63	-4.00	No
		49	6195	-5.95	-4.00	No
		93	6415	-5.56	-4.00	No
		97	6435	-5.63	-4.00	No
		105	6475	-5.94	-4.00	No
		113	6515	-5.95	-4.00	No
		117	6535	-5.66	-4.00	No
		149	6695	-5.07	-4.00	No
		181	6855	-5.53	-4.00	No
		185	6875	-5.45	-4.00	No
		189	6895	-5.10	-4.00	No
		209	6995	-5.22	-4.00	No
		229	7095	-4.35	-4.00	No
		233	7115	-4.18	-4.00	No
	802.11ax(HE20) (RU52)	1	5955	-2.47	-1.50	No
		49	6195	-2.58	-1.50	No
		93	6415	-2.76	-1.50	No
		97	6435	-2.31	-1.50	No
		105	6475	-2.44	-1.50	No
		113	6515	-2.27	-1.50	No
		117	6535	-2.63	-1.50	No
		149	6695	-2.36	-1.50	No
		181	6855	-2.28	-1.50	No
		185	6875	-2.38	-1.50	No
		189	6895	-2.39	-1.50	No
		209	6995	-2.06	-1.50	No
		229	7095	-0.83	0.00	No
233		7115	-1.05	0.00	No	
802.11ax(HE20) (RU106)	1	5955	0.32	2.00	No	
	49	6195	0.38	2.00	No	
	93	6415	0.41	2.00	No	
	97	6435	0.39	2.00	No	
	105	6475	0.32	2.00	No	
	113	6515	0.22	2.00	No	
	117	6535	0.21	2.00	No	
	149	6695	0.30	2.00	No	
	181	6855	0.04	2.00	No	

		185	6875	0.28	2.00	No
		189	6895	0.58	2.00	No
		209	6995	0.66	2.00	No
		229	7095	1.53	2.00	No
		233	7115	1.73	2.00	No

Note: For WiFi SAR testing was performed on single antenna RF power in SISO mode that is larger to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission used more conservative "Max. (main ant) + Max. (aux. ant) " method to determine SAR compliance. When the sum of 1-g SISO transmission SAR measurement is <1.6 W/kg, MIMO SAR test is not required.

## 8.2 Bluetooth

### 8.2.1 Bluetooth (Aux. Antenna)

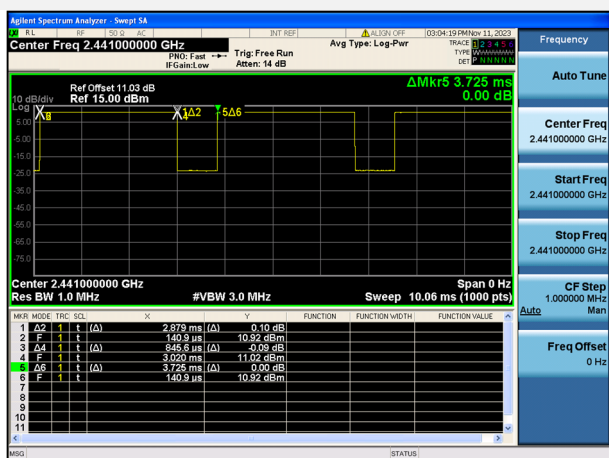
Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Average Power (dBm)	7.29	7.27	<b>7.46</b>	7.24	7.41	7.45
Tune-Up Limit (dBm)	8.00	8.00	8.00	8.00	8.00	8.00
SAR Test Require	Yes	Yes	Yes	No	No	No
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
Average Power (dBm)	7.41	7.27	7.23	/	/	/
Tune-Up Limit (dBm)	8.00	8.00	8.00	/	/	/
SAR Test Require	No	No	No	/	/	/
Mode	BLE-1Mbps			BLE-2Mbps		
Channel	0	19	39	1	19	38
Frequency (MHz)	2402	2440	2480	2404	2440	2478
Average Power (dBm)	7.36	7.36	7.32	7.41	7.30	7.31
Tune-Up Limit (dBm)	8.00	8.00	8.00	8.00	8.00	8.00
SAR Test Require	No	No	No	No	No	No

Note: Since Bluetooth BR mode is the maximum output power mode, SAR measurements were performed with test software using DH5 modulation, and SAR measurement is not required for the EDR and LE. When the secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode.

Note: The Bluetooth duty DH5 cycle is 77.3%, as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation.

#### Duty Cycle

#### Bluetooth-GFSK

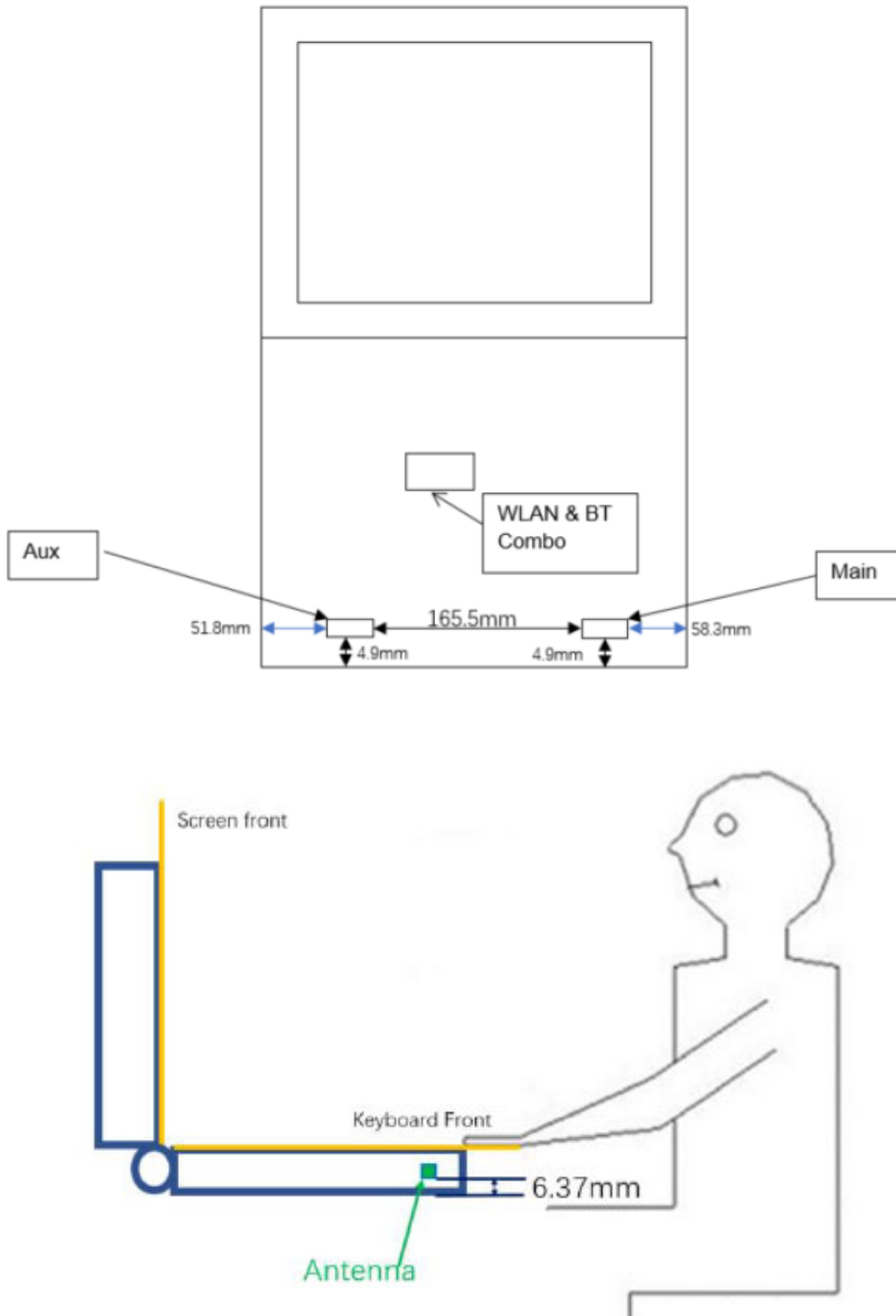




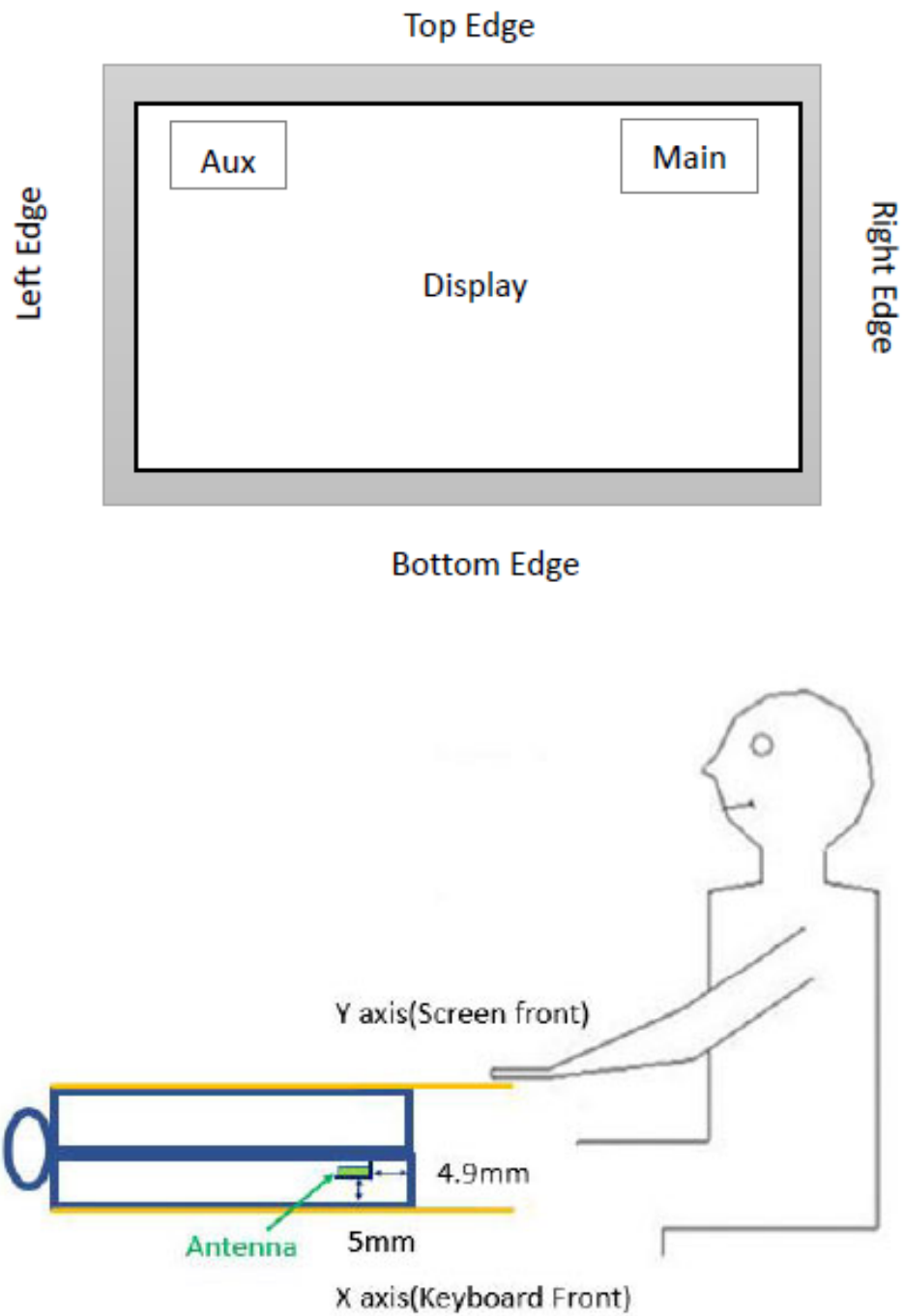
## 9 TEST EXCLUSION CONSIDERATION

### 9.1 EUT Antenna Location Sketch

9.1.1 NB Mode SAR dimensioned photo:



9.1.2 Tablet Mode SAR dimensioned photo:



Antenna	Support Bands
Antenna Aux.	BT、WLAN 2.4G/5G/6G
Antenna Main	WLAN 2.4G/5G/6G

## 9.2 SAR Test Consideration Table

According with FCC KDB 447498 D04, Appendix B, The SAR-based exemption formula applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). The following table shows the power threshold from 5mm to 50mm.

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

### 9.2.1 SAR Test Consideration

This host is a notebook computer, under normal use the RF exposure scenarios are shown in the table below:

RF exposure Position	RF exposure scenarios
Bottom Side	Body
Back Side (with keyboard)	Body
Left Edge	Body
Right Edge	Body
Top Edge	Body
Bottom Edge	Body

## SISO-Main Antenna Body RF exposure scenarios

Test Position Configurations	Mode	WLAN 2.4GHz	U-NII-2A	U-NII-2C	U-NII-3	U-NII-4
Calculated Frequency(MHz)		2462	5320	5710	5825	5925
Bottom Side	Distance to User (mm)	6.37				
	Max. Peak Power (dBm)	15.50	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	35.48	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	4.33	2.43	2.31	2.27	2.27
	SAR Test Required	Yes	Yes	Yes	Yes	Yes
Back Side (with keyboard)	Distance to User (mm)	5.00				
	Max. Peak Power (dBm)	12.00	11.00	11.00	11.00	11.00
	Max. Peak Power (mW)	15.85	12.59	12.59	12.59	12.59
	Exclusion Threshold (mW)	2.73	1.47	1.39	1.37	1.37
	SAR Test Required	Yes	Yes	Yes	Yes	Yes
Left Edge	Distance to User (mm)	51.80				
	Max. Peak Power (dBm)	12.00	11.00	11.00	11.00	11.00
	Max. Peak Power (mW)	15.85	12.59	12.59	12.59	12.59
	Exclusion Threshold (mW)	233.94	186.61	182.78	181.71	181.71
	SAR Test Required	No	No	No	No	No
Right Edge	Distance to User (mm)	223.80				
	Max. Peak Power (dBm)	12.00	11.00	11.00	11.00	11.00
	Max. Peak Power (mW)	15.85	12.59	12.59	12.59	12.59
	Exclusion Threshold (mW)	3790.14	3862.12	3868.79	3870.68	3870.68
	SAR Test Required	No	No	No	No	No
Top Edge	Distance to User (mm)	4.90				
	Max. Peak Power (dBm)	12.00	11.00	11.00	11.00	11.00
	Max. Peak Power (mW)	15.85	12.59	12.59	12.59	12.59
	Exclusion Threshold (mW)	2.63	1.41	1.34	1.31	1.31
	SAR Test Required	Yes	Yes	Yes	Yes	Yes
Bottom Edge	Distance to User (mm)	350.00				
	Max. Peak Power (dBm)	12.00	11.00	11.00	11.00	11.00
	Max. Peak Power (mW)	15.85	12.59	12.59	12.59	12.59
	Exclusion Threshold (mW)	8877.18	9748.51	9832.67	9856.53	9856.53
	SAR Test Required	No	No	No	No	No

## SISO-Aux. Antenna Body RF exposure scenarios

Test Position Configurations	Mode	Bluetooth	WLAN 2.4GHz	U-NII-2A	U-NII-2C	U-NII-3	U-NII-4
Calculated Frequency(MHz)		2480	2462	5320	5710	5825	5925
Bottom Side	Distance to User (mm)	6.37					
	Max. Peak Power (dBm)	8.00	16.00	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	6.31	39.81	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	4.31	4.33	2.43	2.31	2.27	2.27
	SAR Test Required	Yes	Yes	Yes	Yes	Yes	Yes
Back Side (with keyboard)	Distance to User (mm)	5.00					
	Max. Peak Power (dBm)	8.00	12.00	10.00	10.00	10.00	10.00
	Max. Peak Power (mW)	6.31	15.85	10.00	10.00	10.00	10.00
	Exclusion Threshold (mW)	2.72	2.73	1.47	1.39	1.37	1.37
	SAR Test Required	Yes	Yes	Yes	Yes	Yes	Yes
Left Edge	Distance to User (mm)	51.80					
	Max. Peak Power (dBm)	8.00	12.00	10.00	10.00	10.00	10.00
	Max. Peak Power (mW)	6.31	15.85	10.00	10.00	10.00	10.00
	Exclusion Threshold (mW)	233.44	233.94	186.61	182.78	181.71	181.71
	SAR Test Required	No	No	No	No	No	No
Right Edge	Distance to User (mm)	223.80					
	Max. Peak Power (dBm)	8.00	12.00	10.00	10.00	10.00	10.00
	Max. Peak Power (mW)	6.31	15.85	10.00	10.00	10.00	10.00
	Exclusion Threshold (mW)	3790.82	3790.14	3862.12	3868.79	3870.68	3870.68
	SAR Test Required	No	No	No	No	No	No
Top Edge	Distance to User (mm)	4.90					
	Max. Peak Power (dBm)	8.00	12.00	10.00	10.00	10.00	10.00
	Max. Peak Power (mW)	6.31	15.85	10.00	10.00	10.00	10.00
	Exclusion Threshold (mW)	2.61	2.63	1.41	1.34	1.31	1.31
	SAR Test Required	Yes	Yes	Yes	Yes	Yes	Yes
Bottom Edge	Distance to User (mm)	350.00					
	Max. Peak Power (dBm)	8.00	12.00	10.00	10.00	10.00	10.00
	Max. Peak Power (mW)	6.31	15.85	10.00	10.00	10.00	10.00
	Exclusion Threshold (mW)	8885.04	8877.18	9748.51	9832.67	9856.53	9856.53
	SAR Test Required	No	No	No	No	No	No

RF exposure Position	RF exposure scenarios
Front Edge of Keyboard	Limbs
Left Edge of Keyboard	Limbs
Right Edge of Keyboard	Limbs
Palm rest Side of Keyboard	Limbs

## SISO-Main Antenna Limbs RF exposure scenarios

Test Position Configurations	Mode	WLAN 2.4GHz	U-NII-2A	U-NII-2C	U-NII-3	U-NII-4
Calculated Frequency(MHz)		2462	5320	5710	5825	5925
Front Edge of Keyboard	Distance to User (mm)	4.90				
	Max. Peak Power (dBm)	15.50	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	35.48	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	2.63	1.41	1.34	1.31	1.31
	SAR Test Required	Yes	Yes	Yes	Yes	Yes
Left Edge of Keyboard	Distance to User (mm)	51.80				
	Max. Peak Power (dBm)	15.50	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	35.48	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	233.94	186.61	182.78	181.71	181.71
	SAR Test Required	No	No	No	No	No
Right Edge of Keyboard	Distance to User (mm)	223.80				
	Max. Peak Power (dBm)	15.50	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	35.48	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	3790.14	3862.12	3868.79	3870.68	3870.68
	SAR Test Required	No	No	No	No	No
Palm rest Side of Keyboard	Distance to User (mm)	5.00				
	Max. Peak Power (dBm)	15.50	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	35.48	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	2.73	1.47	1.39	1.37	1.37
	SAR Test Required	Yes	Yes	Yes	Yes	Yes

## SISO-Aux. Antenna Limbs RF exposure scenarios

Test Position Configurations	Mode	Bluetooth	WLAN 2.4GHz	U-NII-2A	U-NII-2C	U-NII-3	U-NII-4
Calculated Frequency(MHz)		2480	2462	5320	5710	5825	5925
Front Edge of Keyboard	Distance to User (mm)	4.90					
	Max. Peak Power (dBm)	8.00	16.00	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	6.31	39.81	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	2.61	2.63	1.41	1.34	1.31	1.31
	SAR Test Required	Yes	Yes	Yes	Yes	Yes	Yes
Left Edge of Keyboard	Distance to User (mm)	51.80					
	Max. Peak Power (dBm)	8.00	16.00	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	6.31	39.81	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	233.44	233.94	186.61	182.78	181.71	181.71
	SAR Test Required	No	No	No	No	No	No
Right Edge of Keyboard	Distance to User (mm)	223.80					
	Max. Peak Power (dBm)	8.00	16.00	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	6.31	39.81	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	3790.82	3790.14	3862.12	3868.79	3870.68	3870.68
	SAR Test Required	No	No	No	No	No	No
Palm rest Side of Keyboard	Distance to User (mm)	5.00					
	Max. Peak Power (dBm)	8.00	16.00	15.00	16.00	16.00	16.00
	Max. Peak Power (mW)	6.31	39.81	31.62	39.81	39.81	39.81
	Exclusion Threshold (mW)	2.72	2.73	1.47	1.39	1.37	1.37
	SAR Test Required	Yes	Yes	Yes	Yes	Yes	Yes



## Note:

1. Maximum power is the source-based time-average power and represents the maximum RF output power including tune-up tolerance among production units
2. Per KDB 447498 D04, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. Per KDB 447498 D04, standalone SAR test exclusion threshold is applied; If the distance of the antenna to the user is < 5mm, 5mm is used to determine SAR exclusion threshold
4. Per KDB 447498 D04, for separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive), the threshold Pth (mW) is given by Following:

$$P_{th}(mW) = \begin{cases} ERP_{20cm}(d/20cm)^x & d \leq 20cm \\ ERP_{20cm} & 20cm < d \leq 40cm \end{cases}$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20cm}\sqrt{f}} \right)$$

- a. f(GHz) is the RF channel transmit frequency in GHz
- b. d is the separation distance (cm), The result is rounded to one decimal place for comparison
- c.  $ERP_{20cm}$  are determined by:

$$ERP_{20cm}(mW) = f(x) = \begin{cases} 2040f & 0.3GHz \leq f < 1.5GHz \\ 3060 & 1.5GHz \leq f \leq 6GHz \end{cases}$$

5. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion.8. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at the lowest data rate
6. Per KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions.
  - a. When KDB Publication 447498 D04 SAR test exclusion applies to the OFDM configuration.
  - b. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.
7. Per KDB 248227 D01 SAR is not required for the following U-NII-1 and U-NII-2A bands conditions.
  - a. When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.
  - b. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is  $\leq 1.2$  W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, each band is tested independently for SAR.
8. For Limbs SAR, SAR test exemption considered by applying a factor of 2.5 to the applicable power level thresholds.

## 10 TEST RESULT

1. The reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
  - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
  - b. For SAR testing of WLAN 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)".
  - c. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)\* Duty Cycle scaling factor \* Tune-up scaling factor
2. Absorbed power density (APD) using a 4cm<sup>2</sup> averaging area is reported based on SAR measurements.
3. Per KDB 447498 D04, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
  - $\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
  - $\leq 0.6$  W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
  - $\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz
4. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8$ W/kg

## 10.1 Bluetooth (Aux. Antenna)

### 10.1.1 Bluetooth Body SAR

Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	1g Scaled SAR (W/kg)	Meas. No.
<b>Body</b>																
DH5	AWAN	Laptop	Aux.	Bottom Side	0	78	2480	-0.16	0.076	7.46	8.00	1.132	77.30	1.294	0.111	/
		Tablet	Aux.	Back Side (with keyboard)	0	78	2480	0.03	0.177	7.46	8.00	1.132	77.30	1.294	<b>0.259</b>	1#
				Back Side (with keyboard)	0	0	2402	0.01	0.125	7.29	8.00	1.178	78.30	1.277	0.188	/
				Back Side (with keyboard)	0	39	2441	0.02	0.146	7.27	8.00	1.183	79.30	1.261	0.218	/
				Top Edge	0	78	2480	0.16	0.038	7.46	8.00	1.132	77.30	1.294	0.056	/
	South Star	Laptop	Aux.	Bottom Side	0	78	2480	-0.04	0.160	7.46	8.00	1.132	77.30	1.294	0.234	/
		Tablet	Aux.	Back Side	0	78	2480	0.12	0.155	7.46	8.00	1.132	77.30	1.294	0.227	/
				Top Edge	0	78	2480	-0.04	0.140	7.46	8.00	1.132	77.30	1.294	0.205	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.																

### 10.1.2 Bluetooth Limbs SAR

Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	10g Scaled SAR (W/kg)	Meas. No.
<b>Limbs</b>																
DH5	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	78	2480	-0.02	0.015	7.46	8.00	1.132	77.30	1.294	0.022	/
				Palm rest Side of Keyboard	0	78	2480	-0.01	0.090	7.46	8.00	1.132	77.30	1.294	<b>0.132</b>	2#
				Palm rest Side of Keyboard	0	0	2402	0.05	0.064	7.29	8.00	1.178	78.30	1.277	0.096	/
				Palm rest Side of Keyboard	0	39	2441	0.01	0.050	7.27	8.00	1.183	79.30	1.261	0.075	/
	South Star	Laptop	Aux.	Front Edge of Keyboard	0	78	2480	0.15	0.022	7.46	8.00	1.132	77.30	1.294	0.032	/
				Palm rest Side of Keyboard	0	78	2480	-0.05	0.077	7.46	8.00	1.132	77.30	1.294	0.113	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.																

## 10.2 WIFI 2.4GHZ

### 10.2.1 WIFI 2.4GHZ Body SAR

Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	1g Scaled SAR (W/kg)	Meas. No.	
<b>Body</b>																	
802.11b	AWAN	Laptop	Aux.	Bottom Side	0	11	2462	-0.10	0.185	15.22	16.00	1.197	99.73	1.003	0.222	/	
		Tablet		Back Side (with keyboard)	0	11	2462	0.01	0.386	11.60	12.00	1.096	99.73	1.003	<b>0.424</b>	3#	
				Back Side (with keyboard)	0	1	2412	0.05	0.255	11.47	12.00	1.130	100.73	0.993	0.286	/	
				Back Side (with keyboard)	0	6	2437	0.04	0.272	11.55	12.00	1.109	101.73	0.983	0.297	/	
				Top Edge	0	11	2462	0.08	0.096	11.60	12.00	1.096	99.73	1.003	0.106	/	
	South Star	Laptop	Aux.	Bottom Side	0	11	2462	0.16	0.177	15.22	16.00	1.197	99.73	1.003	0.213	/	
		Tablet		Back Side	0	11	2462	-0.16	0.357	11.60	12.00	1.096	99.73	1.003	0.392	/	
				Top Edge	0	11	2462	0.07	0.082	11.60	12.00	1.096	99.73	1.003	0.090	/	
	AWAN	Laptop	Main	Bottom Side	0	6	2437	-0.04	0.326	15.01	15.50	1.119	99.73	1.003	0.366	/	
		Tablet		Back Side (with keyboard)	0	6	2437	0.01	0.506	11.75	12.00	1.059	99.73	1.003	<b>0.537</b>	4#	
				Back Side (with keyboard)	0	1	2412	0.02	0.432	11.65	12.00	1.084	100.73	0.993	0.465	/	
				Back Side (with keyboard)	0	11	2462	0.04	0.421	11.68	12.00	1.076	101.73	0.983	0.445	/	
				Top Edge	0	6	2437	-0.08	0.072	11.75	12.00	1.059	99.73	1.003	0.076	/	
	South Star	Laptop	Main	Bottom Side	0	6	2437	0.05	0.316	15.01	15.50	1.119	99.73	1.003	0.355	/	
		Tablet		Back Side	0	6	2437	0.03	0.465	11.75	12.00	1.059	99.73	1.003	0.494	/	
				Top Edge	0	6	2437	0.07	0.155	11.75	12.00	1.059	99.73	1.003	0.165	/	
	Note: Refer to ANNEX C for the detailed test data for each test configuration.																

### 10.2.2 WIFI 2.4GHz Limbs SAR

Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	10g Scaled SAR (W/kg)	Meas. No.	
<b>Limbs</b>																	
802.11b	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	11	2462	-0.06	0.032	15.22	16.00	1.197	99.73	1.003	0.038	/	
				Palm rest Side of Keyboard	0	11	2462	0.00	0.360	15.22	16.00	1.197	99.73	1.003	<b>0.432</b>	5#	
				Palm rest Side of Keyboard	0	1	2412	0.01	0.285	15.27	16.00	1.183	100.73	0.993	0.335	/	
				Palm rest Side of Keyboard	0	6	2437	0.02	0.272	14.99	16.00	1.262	101.73	0.983	0.337	/	
	South Star	Laptop	Aux.	Front Edge of Keyboard	0	11	2462	-0.18	0.025	15.22	16.00	1.197	99.73	1.003	0.030	/	
				Palm rest Side of Keyboard	0	11	2462	-0.12	0.332	15.22	16.00	1.197	99.73	1.003	0.399	/	
	AWAN	Laptop	Main	Front Edge of Keyboard	0	6	2437	-0.13	0.025	15.01	15.50	1.119	99.73	1.003	0.028	/	
				Palm rest Side of Keyboard	0	6	2437	-0.02	0.438	15.01	15.50	1.119	99.73	1.003	<b>0.492</b>	6#	
				Palm rest Side of Keyboard	0	1	2412	0.01	0.378	14.99	15.50	1.125	100.73	0.993	0.422	/	
				Palm rest Side of Keyboard	0	11	2462	0.04	0.368	14.98	15.50	1.127	101.73	0.983	0.408	/	
	South Star	Laptop	Main	Front Edge of Keyboard	0	6	2437	0.10	0.011	15.01	15.50	1.119	99.73	1.003	0.012	/	
				Palm rest Side of Keyboard	0	6	2437	-0.13	0.355	15.01	15.50	1.119	99.73	1.003	0.398	/	
	Note: Refer to ANNEX C for the detailed test data for each test configuration.																

## 10.3 WIFI 5GHz

### 10.3.1 WIFI 5GHz Body SAR

Fre. Band	Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	1g Scaled SAR (W/kg)	Meas. No.
<b>Body</b>																	
U-NII-2A	802.11n40	AWAN	Laptop	Aux.	Bottom Side	0	62	5310	0.14	0.457	14.40	15.00	1.148	97.62	1.024	0.537	/
	802.11ac80		Tablet		Back Side (with keyboard)	0	58	5290	0.04	0.900	9.88	10.00	1.028	95.18	1.051	0.972	/
			Top Edge		0	58	5290	-0.15	0.139	9.88	10.00	1.028	95.18	1.051	0.150	/	
	802.11n40	South Star	Laptop	Aux.	Bottom Side	0	62	5310	-0.11	0.398	14.40	15.00	1.148	97.62	1.024	0.468	/
	802.11ac80		Tablet		Back Side (with keyboard)	0	58	5290	0.00	0.930	9.88	10.00	1.028	95.18	1.051	<b>1.005</b>	7#
			Top Edge		0	58	5290	-0.11	0.190	9.88	10.00	1.028	95.18	1.051	0.205	/	
	802.11n40	AWAN	Laptop	Main	Bottom Side	0	54	5270	-0.15	0.325	14.60	15.00	1.096	97.62	1.024	0.365	/
	802.11ac80		Tablet		Back Side (with keyboard)	0	58	5290	0.16	0.408	10.86	11.00	1.033	95.18	1.051	0.443	/
			Top Edge		0	58	5290	0.18	0.122	10.86	11.00	1.033	95.18	1.051	0.132	/	
	802.11n40	South Star	Laptop	Main	Bottom Side	0	54	5270	0.01	0.333	14.60	15.00	1.096	97.62	1.024	0.374	/
	802.11ac80		Tablet		Back Side (with keyboard)	0	58	5290	-0.10	0.412	10.86	11.00	1.033	95.18	1.051	<b>0.447</b>	8#
			Top Edge		0	58	5290	-0.09	0.111	10.86	11.00	1.033	95.18	1.051	0.121	/	
U-NII-2C	802.11ac80	AWAN	Laptop	Aux.	Bottom Side	0	106	5530	-0.08	0.385	15.70	16.00	1.072	95.18	1.051	0.434	/
	802.11ac160		Tablet		Back Side (with keyboard)	0	114	5570	-0.18	0.444	9.83	10.00	1.040	91.73	1.090	0.503	/
			Top Edge		0	114	5570	-0.12	0.062	9.83	10.00	1.040	91.73	1.090	0.070	/	
	802.11ac80	South Star	Laptop	Aux.	Bottom Side	0	106	5530	-0.10	0.333	15.70	16.00	1.072	95.18	1.051	0.375	/
	802.11ac160		Tablet		Back Side (with keyboard)	0	114	5570	-0.02	0.529	9.83	10.00	1.040	91.73	1.090	<b>0.600</b>	11#
			Top Edge		0	114	5570	0.06	0.045	9.83	10.00	1.040	91.73	1.090	0.051	/	
	802.11ac80	AWAN	Laptop	Main	Bottom Side	0	106	5530	-0.15	0.402	15.80	16.00	1.047	95.18	1.051	0.442	/
	802.11ac160		Tablet		Back Side (with keyboard)	0	114	5570	-0.02	0.672	10.65	11.00	1.084	91.73	1.090	<b>0.794</b>	12#
			Top Edge		0	114	5570	0.07	0.055	10.65	11.00	1.084	91.73	1.090	0.065	/	
	802.11ac80	South Star	Laptop	Main	Bottom Side	0	106	5530	-0.10	0.432	15.80	16.00	1.047	95.18	1.051	0.475	/
	802.11ac160		Tablet		Back Side (with keyboard)	0	114	5570	0.15	0.632	10.65	11.00	1.084	91.73	1.090	0.747	/
			Top Edge		0	114	5570	0.13	0.077	10.65	11.00	1.084	91.73	1.090	0.091	/	
U-NII-3	802.11ac80	AWAN	Laptop	Aux.	Bottom Side	0	155	5775	-0.15	0.198	15.76	16.00	1.057	95.18	1.051	0.220	/

		Tablet		Back Side (with keyboard)	0	155	5775	-0.11	0.385	9.37	10.00	1.156	95.18	1.051	0.468	/	
				Top Edge	0	155	5775	0.14	0.088	9.37	10.00	1.156	95.18	1.051	0.107	/	
		South Star	Tablet	Aux.	Bottom Side	0	155	5775	-0.13	0.205	15.76	16.00	1.057	95.18	1.051	0.228	/
					Back Side (with keyboard)	0	155	5775	0.15	0.406	9.37	10.00	1.156	95.18	1.051	<b>0.493</b>	15#
					Top Edge	0	155	5775	0.17	0.099	9.37	10.00	1.156	95.18	1.051	0.120	/
		AWAN	Tablet	Main	Bottom Side	0	155	5775	-0.06	0.285	15.40	16.00	1.148	95.18	1.051	0.344	/
					Back Side (with keyboard)	0	155	5775	0.06	0.783	10.80	11.00	1.047	95.18	1.051	<b>0.862</b>	16#
					Top Edge	0	155	5775	-0.02	0.135	10.80	11.00	1.047	95.18	1.051	0.149	/
		South Star	Tablet	Main	Bottom Side	0	155	5775	-0.03	0.272	15.40	16.00	1.148	95.18	1.051	0.328	/
					Back Side (with keyboard)	0	155	5775	-0.11	0.695	10.80	11.00	1.047	95.18	1.051	0.765	/
					Top Edge	0	155	5775	0.12	0.133	10.80	11.00	1.047	95.18	1.051	0.146	/
		U-NII-4	802.11ac160	AWAN	Tablet	Aux.	Bottom Side	0	163	5815	0.08	0.198	15.96	16.00	1.009	95.18	1.051
Back Side (with keyboard)	0						163	5815	0.05	0.411	9.42	10.00	1.143	95.18	1.051	<b>0.494</b>	19#
Top Edge	0						163	5815	-0.08	0.101	9.42	10.00	1.143	95.18	1.051	0.121	/
South Star	Tablet			Aux.	Bottom Side	0	163	5815	-0.05	0.180	15.96	16.00	1.009	95.18	1.051	0.191	/
					Back Side (with keyboard)	0	163	5815	0.01	0.385	9.42	10.00	1.143	95.18	1.051	0.462	/
					Top Edge	0	163	5815	0.00	0.095	9.42	10.00	1.143	95.18	1.051	0.114	/
AWAN	Tablet			Main	Bottom Side	0	163	5815	0.17	0.295	15.90	16.00	1.023	95.18	1.051	0.317	/
					Back Side (with keyboard)	0	163	5815	-0.05	0.612	10.61	11.00	1.094	95.18	1.051	<b>0.704</b>	20#
					Top Edge	0	163	5815	-0.06	0.115	10.61	11.00	1.094	95.18	1.051	0.132	/
South Star	Tablet			Main	Bottom Side	0	163	5815	0.08	0.285	15.90	16.00	1.023	95.18	1.051	0.306	/
					Back Side (with keyboard)	0	163	5815	0.08	0.598	10.61	11.00	1.094	95.18	1.051	0.688	/
					Top Edge	0	163	5815	-0.07	0.237	10.61	11.00	1.094	95.18	1.051	0.273	/

Note: Refer to ANNEX C for the detailed test data for each test configuration.

### 10.3.2 WIFI 5GHz Limbs SAR

Fre. Band	Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	10g Scaled SAR (W/kg)	Meas. No.		
<b>Body</b>																			
U-NII-2A	802.11n40	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	62	5310	0.09	0.044	14.40	15.00	1.148	97.62	1.024	0.052	/		
					Palm rest Side of Keyboard	0	62	5310	0.00	0.385	14.40	15.00	1.148	97.62	1.024	<b>0.453</b>	9#		
					Palm rest Side of Keyboard	0	54	5270	0.01	0.242	14.32	15.00	1.169	97.62	1.024	0.290	/		
		South Star	Laptop	Aux.	Front Edge of Keyboard	0	62	5310	0.06	0.052	14.40	15.00	1.148	97.62	1.024	0.061	/		
					Palm rest Side of Keyboard	0	62	5310	0.10	0.367	14.40	15.00	1.148	97.62	1.024	0.431	/		
		AWAN	Laptop	Main	Front Edge of Keyboard	0	54	5270	0.06	0.085	14.60	15.00	1.096	97.62	1.024	0.095	/		
					Palm rest Side of Keyboard	0	54	5270	0.03	0.638	14.60	15.00	1.096	97.62	1.024	<b>0.716</b>	10#		
					Palm rest Side of Keyboard	0	62	5310	0.05	0.522	14.60	15.00	1.096	97.62	1.024	0.586	/		
		South Star	Laptop	Main	Front Edge of Keyboard	0	54	5270	-0.04	0.072	14.60	15.00	1.096	97.62	1.024	0.081	/		
					Palm rest Side of Keyboard	0	54	5270	-0.17	0.534	14.60	15.00	1.096	97.62	1.024	0.599	/		
		U-NII-2C	802.11ac80	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	106	5530	0.16	0.033	15.70	16.00	1.072	95.18	1.051	0.037	/
							Palm rest Side of Keyboard	0	106	5530	0.02	0.412	15.70	16.00	1.072	95.18	1.051	<b>0.464</b>	13#
Palm rest Side of Keyboard	0						138	5690	0.01	0.369	15.53	16.00	1.114	96.18	1.040	0.428	/		
Palm rest Side of Keyboard	0						122	5610	0.05	0.355	15.50	16.00	1.122	96.18	1.040	0.414	/		
South Star	Laptop			Aux.	Front Edge of Keyboard	0	106	5530	-0.02	0.028	15.70	16.00	1.072	95.18	1.051	0.032	/		
					Palm rest Side of Keyboard	0	106	5530	-0.15	0.385	15.70	16.00	1.072	95.18	1.051	0.434	/		
AWAN	Laptop			Main	Front Edge of Keyboard	0	106	5530	0.17	0.068	15.80	16.00	1.047	95.18	1.051	0.075	/		
					Palm rest Side of Keyboard	0	106	5530	0.02	0.629	15.80	16.00	1.047	95.18	1.051	<b>0.692</b>	14#		



					Palm rest Side of Keyboard	0	138	5690	0.05	0.585	15.43	16.00	1.047	95.18	1.051	0.644	/			
					Palm rest Side of Keyboard	0	122	5610	0.12	0.572	15.58	16.00	1.047	95.18	1.051	0.629	/			
					South Star	Laptop	Main	Front Edge of Keyboard	0	106	5530	-0.02	0.023	15.80	16.00	1.047	95.18	1.051	0.025	/
								Palm rest Side of Keyboard	0	106	5530	-0.12	0.535	15.80	16.00	1.047	95.18	1.051	0.589	/
U-NII-3	802.11ac80	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	155	5775	-0.11	0.135	15.76	16.00	1.057	95.18	1.051	0.150	/			
					Palm rest Side of Keyboard	0	155	5775	-0.12	0.777	15.76	16.00	1.057	95.18	1.051	0.863	/			
		South Star	Laptop	Aux.	Front Edge of Keyboard	0	155	5775	-0.08	0.138	15.76	16.00	1.057	95.18	1.051	0.153	/			
					Palm rest Side of Keyboard	0	155	5775	-0.01	0.812	15.76	16.00	1.057	95.18	1.051	<b>0.902</b>	17#			
		AWAN	Laptop	Main	Front Edge of Keyboard	0	155	5775	0.04	0.144	15.40	16.00	1.148	95.18	1.051	0.174	/			
					Palm rest Side of Keyboard	0	155	5775	0.03	0.991	15.40	16.00	1.148	95.18	1.051	<b>1.196</b>	18#			
		South Star	Laptop	Main	Front Edge of Keyboard	0	155	5775	-0.13	0.140	15.40	16.00	1.148	95.18	1.051	0.169	/			
					Palm rest Side of Keyboard	0	155	5775	-0.06	0.853	15.40	16.00	1.148	95.18	1.051	1.029	/			
U-NII-4	802.11ac160	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	163	5815	-0.03	0.085	15.96	16.00	1.009	95.18	1.051	0.090	/			
					Palm rest Side of Keyboard	0	163	5815	0.00	0.631	15.96	16.00	1.009	95.18	1.051	<b>0.669</b>	21#			
		South Star	Laptop	Aux.	Front Edge of Keyboard	0	163	5815	-0.04	0.074	15.96	16.00	1.009	95.18	1.051	0.078	/			
					Palm rest Side of Keyboard	0	163	5815	-0.11	0.598	15.96	16.00	1.009	95.18	1.051	0.634	/			
		AWAN	Laptop	Main	Front Edge of Keyboard	0	163	5815	-0.01	0.092	15.90	16.00	1.023	95.18	1.051	0.099	/			
					Palm rest Side of Keyboard	0	163	5815	0.01	0.664	15.90	16.00	1.023	95.18	1.051	<b>0.714</b>	22#			
		South Star	Laptop	Main	Front Edge of Keyboard	0	163	5815	0.18	0.088	15.90	16.00	1.023	95.18	1.051	0.095	/			
					Palm rest Side of Keyboard	0	163	5815	0.00	0.630	15.90	16.00	1.023	95.18	1.051	0.677	/			

Note: Refer to ANNEX C for the detailed test data for each test configuration.

## 10.4 WIFI 6GHz

### 10.4.1 WIFI 6GHz Body SAR

Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	1g Scaled SAR (W/kg)	Measured APD W/m2	Scaled APD W/m2	Meas. No.
<b>Body</b>																		
802.11 ax160	AWAN	Laptop	Aux.	Bottom Side	0	47	6185	-0.07	0.200	12.72	13.00	1.067	91.73	1.090	0.233	1.42	1.652	/
		Back Side (with keyboard)		0	47	6185	-0.15	0.555	10.18	10.50	1.076	91.73	1.090	0.651	3.95	4.633	/	
		Top Edge		0	47	6185	-0.01	0.124	10.18	10.50	1.076	91.73	1.090	0.145	0.88	1.032	/	
		Back Side (with keyboard)		0	15	6025	-0.12	0.535	10.10	10.50	1.096	91.73	1.090	0.639	3.80	4.540	/	
		Back Side (with keyboard)		0	79	6345	0.12	0.565	10.08	10.50	1.102	91.73	1.090	0.679	4.02	4.829	/	
		Back Side (with keyboard)		0	111	6505	-0.08	0.527	9.99	10.50	1.125	91.73	1.090	0.646	3.75	4.598	/	
		Back Side (with keyboard)		0	143	6665	0.11	0.533	9.95	10.50	1.135	91.73	1.090	0.659	3.79	4.689	/	
		Back Side (with keyboard)		0	175	6825	-0.09	0.588	10.03	10.50	1.114	91.73	1.090	0.714	4.18	5.076	/	
		Back Side (with keyboard)		0	207	6985	-0.10	0.534	10.05	10.50	1.109	91.73	1.090	0.646	3.80	4.593	/	
	South Star	Laptop	Aux.	Bottom Side	0	47	6185	0.00	0.213	12.72	13.00	1.067	91.73	1.090	0.248	1.51	1.756	/
		Back Side (with keyboard)		0	47	6185	-0.08	0.621	10.18	10.50	1.076	91.73	1.090	0.728	4.42	5.184	/	
		Top Edge		0	47	6185	-0.13	0.138	10.18	10.50	1.076	91.73	1.090	0.162	0.98	1.149	/	
		Back Side (with keyboard)		0	15	6025	-0.03	0.642	10.10	10.50	1.096	91.73	1.090	<b>0.767</b>	4.57	5.460	23#	
		Back Side (with keyboard)		0	79	6345	0.16	0.602	10.08	10.50	1.102	91.73	1.090	0.723	4.28	5.141	/	
		Back Side (with keyboard)		0	111	6505	-0.16	0.625	9.99	10.50	1.125	91.73	1.090	0.766	4.44	5.445	/	
		Back Side (with keyboard)		0	143	6665	0.07	0.611	9.95	10.50	1.135	91.73	1.090	0.756	4.00	4.949	/	
		Back Side (with keyboard)		0	175	6825	0.01	0.631	10.03	10.50	1.114	91.73	1.090	0.766	4.49	5.452	/	
		Back Side (with keyboard)		0	207	6985	-0.16	0.615	10.05	10.50	1.109	91.73	1.090	0.743	4.37	5.282	/	
	AWAN	Laptop	Main	Bottom Side	0	47	6185	-0.17	0.178	12.88	13.00	1.028	91.73	1.090	0.199	1.36	1.524	/
		Tablet		Back Side (with keyboard)	0	111	6505	0.10	0.548	10.15	10.50	1.084	91.73	1.090	0.647	4.18	4.939	/

South Star	Laptop	Main	Top Edge	0	111	6505	-0.09	0.159	10.15	10.50	1.084	91.73	1.090	0.188	1.21	1.430	/
			Back Side (with keyboard)	0	15	6025	-0.01	0.920	9.96	10.50	1.132	91.73	1.090	<b>1.135</b>	7.02	8.662	24#
			Back Side (with keyboard)	0	47	6185	0.03	0.796	10.00	10.50	1.122	91.73	1.090	0.973	6.07	7.423	/
			Back Side (with keyboard)	0	79	6345	-0.10	0.888	10.09	10.50	1.099	91.73	1.090	1.064	6.78	8.122	/
			Back Side (with keyboard)	0	143	6665	0.17	0.909	10.04	10.50	1.112	91.73	1.090	1.102	6.94	8.412	/
			Back Side (with keyboard)	0	175	6825	0.03	0.823	10.08	10.50	1.102	91.73	1.090	0.989	6.28	7.543	/
			Back Side (with keyboard)	0	207	6985	-0.10	0.681	9.93	10.50	1.140	91.73	1.090	0.846	5.20	6.462	/
	Tablet	Main	Bottom Side	0	47	6185	0.00	0.274	12.88	10.50	0.578	91.73	1.090	0.173	2.09	1.317	/
			Back Side (with keyboard)	0	111	6505	0.03	0.673	10.15	10.50	1.084	91.73	1.090	0.795	5.14	6.073	/
			Top Edge	0	111	6505	0.16	0.254	10.15	10.50	1.084	91.73	1.090	0.300	1.94	2.292	/
			Back Side (with keyboard)	0	15	6025	-0.13	0.500	9.96	10.50	1.132	91.73	1.090	0.617	3.82	4.713	/
			Back Side (with keyboard)	0	47	6185	0.14	0.636	10.00	10.50	1.122	91.73	1.090	0.778	4.85	5.931	/
			Back Side (with keyboard)	0	79	6345	0.00	0.755	10.09	10.50	1.099	91.73	1.090	0.904	5.76	6.900	/
			Back Side (with keyboard)	0	143	6665	-0.14	0.883	10.04	10.50	1.112	91.73	1.090	1.070	6.74	8.169	/
			Back Side (with keyboard)	0	175	6825	-0.07	0.867	10.08	10.50	1.102	91.73	1.090	1.041	6.62	7.952	/
Back Side (with keyboard)	0	207	6985	-0.09	0.577	9.93	10.50	1.140	91.73	1.090	0.717	4.40	5.467	/			

Note: Refer to ANNEX C for the detailed test data for each test configuration.

### 10.4.2 WIFI 6GHz Limbs SAR

Mode	Antenna Manufacturer	Test State	Antenna	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	10g Scaled SAR (W/kg)	Measured APD W/m2	Scaled APD W/m2	Meas. No.
<b>Limbs</b>																		
802.11 ax160	AWAN	Laptop	Aux.	Front Edge of Keyboard	0	47	6185	0.00	0.018	12.72	13.00	1.064	91.73	1.090	0.021	0.41	0.476	/
				Palm rest Side of Keyboard	0	47	6185	-0.01	0.211	12.72	13.00	1.064	91.73	1.090	<b>0.245</b>	4.76	5.520	25#
				Palm rest Side of Keyboard	0	15	6025	0.05	0.185	12.63	13.00	1.064	91.73	1.090	0.215	4.17	4.836	/
				Palm rest Side of Keyboard	0	79	6345	-0.01	0.177	12.70	13.00	1.064	91.73	1.090	0.205	3.99	4.627	/
				Palm rest Side of Keyboard	0	111	6505	0.04	0.165	12.64	13.00	1.064	91.73	1.090	0.191	3.72	4.314	/
				Palm rest Side of Keyboard	0	143	6665	0.16	0.155	12.28	13.00	1.064	91.73	1.090	0.180	3.50	4.059	/
				Palm rest Side of Keyboard	0	175	6825	0.00	0.148	12.65	13.00	1.064	91.73	1.090	0.172	3.34	3.874	/
				Palm rest Side of Keyboard	0	207	6985	-0.04	0.189	12.63	13.00	1.064	91.73	1.090	0.219	4.26	4.941	/
	South Star	Laptop	Aux.	Front Edge of Keyboard	0	47	6185	0.04	0.019	12.72	13.00	1.064	91.73	1.090	0.022	0.43	0.499	/
				Palm rest Side of Keyboard	0	47	6185	0.16	0.202	12.72	13.00	1.064	91.73	1.090	0.234	4.56	5.289	/
				Palm rest Side of Keyboard	0	15	6025	-0.06	0.195	12.63	13.00	1.064	91.73	1.090	0.226	4.40	5.103	/
				Palm rest Side of Keyboard	0	79	6345	-0.12	0.186	12.70	13.00	1.064	91.73	1.090	0.216	4.19	4.859	/
				Palm rest Side of Keyboard	0	111	6505	0.16	0.171	12.64	13.00	1.064	91.73	1.090	0.198	3.86	4.477	/
				Palm rest Side of Keyboard	0	143	6665	-0.15	0.195	12.28	13.00	1.064	91.73	1.090	0.226	4.40	5.103	/
				Palm rest Side of Keyboard	0	175	6825	0.01	0.188	12.65	13.00	1.064	91.73	1.090	0.218	4.24	4.917	/
AWAN	Laptop	Main	Front Edge of Keyboard	0	47	6185	-0.01	0.030	12.88	13.00	1.033	91.73	1.090	0.034	0.68	0.766	/	
			Palm rest Side of Keyboard	0	47	6185	-0.11	0.351	12.88	13.00	1.033	91.73	1.090	<b>0.395</b>	8.00	9.008	26#	

South Star	Laptop	Main	Palm rest Side of Keyboard	0	15	6025	-0.16	0.296	12.86	13.00	1.033	91.73	1.090	0.333	6.68	7.521	/
			Palm rest Side of Keyboard	0	79	6345	0.08	0.285	12.54	13.00	1.033	91.73	1.090	0.321	6.43	7.240	/
			Palm rest Side of Keyboard	0	111	6505	0.17	0.272	12.85	13.00	1.033	91.73	1.090	0.306	6.13	6.902	/
			Palm rest Side of Keyboard	0	143	6665	-0.15	0.283	12.77	13.00	1.033	91.73	1.090	0.319	6.38	7.184	/
			Palm rest Side of Keyboard	0	175	6825	-0.14	0.299	12.57	13.00	1.033	91.73	1.090	0.337	6.74	7.589	/
			Palm rest Side of Keyboard	0	207	6985	0.12	0.289	12.43	13.00	1.033	91.73	1.090	0.325	6.52	7.341	/
	Main	Front Edge of Keyboard	0	47	6185	0.16	0.032	12.88	13.00	1.033	91.73	1.090	0.036	0.72	0.811	/	
		Palm rest Side of Keyboard	0	47	6185	0.01	0.299	12.88	13.00	1.033	91.73	1.090	0.337	6.74	7.589	/	
		Palm rest Side of Keyboard	0	15	6025	0.13	0.285	12.86	13.00	1.033	91.73	1.090	0.321	6.43	7.240	/	
		Palm rest Side of Keyboard	0	79	6345	-0.10	0.277	12.54	13.00	1.033	91.73	1.090	0.312	6.25	7.037	/	
		Palm rest Side of Keyboard	0	111	6505	0.19	0.296	12.85	13.00	1.033	91.73	1.090	0.333	6.68	7.521	/	
		Palm rest Side of Keyboard	0	143	6665	-0.10	0.298	12.77	13.00	1.033	91.73	1.090	0.336	6.72	7.567	/	
		Palm rest Side of Keyboard	0	175	6825	-0.16	0.288	12.57	13.00	1.033	91.73	1.090	0.324	6.49	7.308	/	
		Palm rest Side of Keyboard	0	207	6985	0.04	0.293	12.43	13.00	1.033	91.73	1.090	0.330	6.61	7.443	/	
Note: Refer to ANNEX C for the detailed test data for each test configuration.																	

## 11 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are  $\leq 1.45$  W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is  $\leq 1.10$ , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. 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.

SAR repeated measurement procedure:

1. When the highest measured SAR is  $< 0.80$  W/kg, repeated measurement is not required.
2. When the highest measured SAR is  $\geq 0.80$  W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is  $> 1.20$ , or when the original or repeated measurement is  $\geq 1.45$  W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ , and the original, first or second repeated measurement is  $\geq 1.5$  W/kg, perform a third repeated measurement.

Frequency Band (MHz)	Wireless Band	Antenna manufacturer	Test Mode	Antenna	RF Exposure Conditions	Test Position	Highest Measured SAR (W/kg)	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Largest to Smallest SAR Radio
5290	802.11ac80	AWAN	Tablet	Aux.	Body	Back Side (with keyboard)	0.900	Yes	0.884	1.02
5290	802.11ac80	South Star	Tablet	Aux.	Body	Back Side (with keyboard)	0.930	Yes	0.903	1.03
6025	802.11ax160	AWAN	Tablet	Main	Body	Back Side (with keyboard)	0.920	Yes	0.896	1.03
6345	802.11ax160	AWAN	Tablet	Main	Body	Back Side (with keyboard)	0.888	Yes	0.869	1.02
6665	802.11ax160	AWAN	Tablet	Main	Body	Back Side (with keyboard)	0.909	Yes	0.874	1.04
6825	802.11ax160	AWAN	Tablet	Main	Body	Back Side (with keyboard)	0.823	Yes	0.805	1.02
6665	802.11ax160	South Star	Tablet	Main	Body	Back Side (with keyboard)	0.883	Yes	0.867	1.02
6825	802.11ax160	South Star	Tablet	Main	Body	Back Side (with keyboard)	0.867	Yes	0.849	1.02

Note 1: The ratio of largest to smallest SAR for the original and first repeated measurements is < 1.20, the second repeated measurement is not required.

Note 2: For product specific 10g SAR, the highest measured 10g SAR is 1.20 < 2.00 W/kg, repeated measurement is not required.

## 12 SIMULTANEOUS TRANSMISSION

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR 1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR 1g 1.6 W/kg), SAR test exclusion is determined by the SAR to Peak Location Ratio (SPLSR).

According to KDB 447498 D04, simultaneous transmission:

- a)  $SPLSR = (SAR1 + SAR2)^{1.5} / R_i$  (min. separation distance, mm), and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.  
SAR1 is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition.  
SAR2 is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition as the first.
- b) If  $SPLSR \leq 0.04$ , simultaneously transmission SAR measurement is not necessary.
- c) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

### 12.1 Simultaneous Transmission Mode Considerations

No.	Simultaneous Tx Combination	Body&Limbs
1	Bluetooth + WLAN 2.4GHz (Antenna Main)	Yes
2	Bluetooth + WLAN 5GHz (Antenna Auxiliary)	Yes
3	Bluetooth + WLAN 6GHz (Antenna Auxiliary)	Yes
4	Bluetooth + WLAN 5GHz (Antenna Main)	Yes
5	Bluetooth + + WLAN 6GHz (Antenna Main)	Yes
6	WLAN 2.4GHz (Antenna Main) + WLAN 2.4GHz (Antenna Auxiliary)	Yes
7	WLAN 2.4GHz (Antenna Main) + WLAN 5GHz (Antenna Auxiliary)	Yes
8	WLAN 2.4GHz (Antenna Auxiliary) + WLAN 5GHz (Antenna Main)	Yes
9	WLAN 2.4GHz (Antenna Main) + WLAN 6GHz (Antenna Auxiliary)	Yes
10	WLAN 2.4GHz (Antenna Auxiliary) + WLAN 6GHz (Antenna Main)	Yes
11	WLAN 5GHz (Antenna Auxiliary) + WLAN 5GHz (Antenna Main)	Yes
12	WLAN 6GHz (Antenna Auxiliary) + WLAN 6GHz (Antenna Main)	Yes

Note:

1. The EUT supports the Antenna Auxiliary with TX/RX diversity function for WLAN and Bluetooth, the Antenna Main with TX/RX diversity function for WLAN.
2. WLAN 2.4GHz and Bluetooth will not be transmitting from the Antenna Auxiliary at same time.



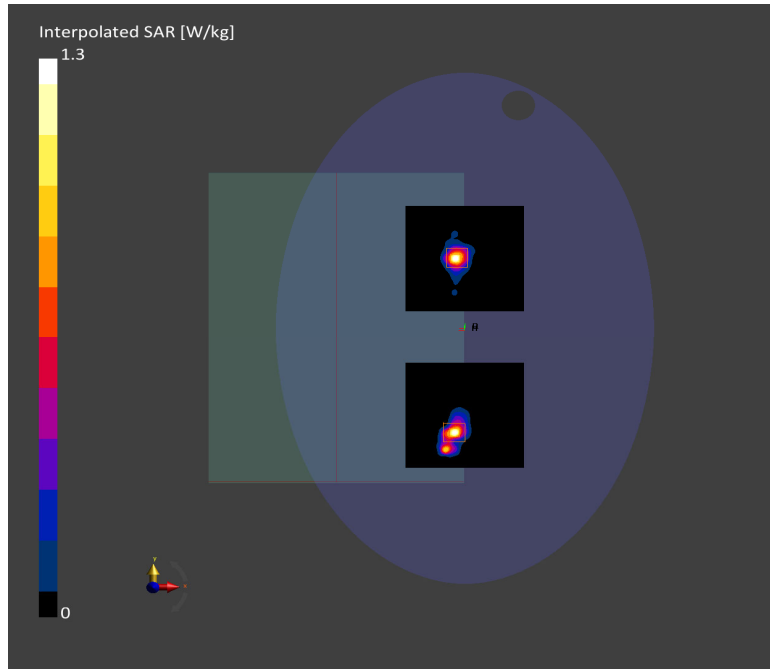
## 12.2 Sum SAR of Simultaneous Transmission

### 12.2.1 Body Simultaneous Transmission SAR Evaluation for WLAN Antenna with Bluetooth

State			Position			Stand alone SAR							
						1	2	3	4	5	6	7	
						Bluetooth	WLAN 2.4GHz (Antenna Auxiliary)	WLAN 2.4GHz (Antenna Main)	MAX. WLAN 5GHz (Antenna Auxiliary)	MAX. WLAN 5GHz (Antenna Main)	WLAN 6GHz (Antenna Auxiliary)	WLAN 6GHz (Antenna Main)	
Body	Laptop	Bottom Side	0.111	0.222	0.366	0.468	0.442	0.248	0.199				
Body	Tablet	Back Side	0.259	0.424	0.537	1.004	0.861	0.767	1.136				
Body	Tablet	Top Edge	0.056	0.106	0.076	0.205	0.149	0.162	0.188				
SUM SAR												SPLSR SAR	
Sum SAR (1+3)	Sum SAR (1+4)	Sum SAR (1+6)	Sum SAR (1+5)	Sum SAR (1+7)	Sum SAR (2+3)	Sum SAR (3+4)	Sum SAR (2+5)	Sum SAR (3+6)	Sum SAR (2+7)	Sum SAR (4+5)	Sum SAR (6+7)	Sum SAR (4+5)	Sum SAR (6+7)
0.477	0.579	0.359	0.553	0.310	0.588	0.834	0.664	0.614	0.421	0.910	0.447	/	/
0.796	1.263	1.026	1.120	1.395	0.961	1.541	1.285	1.304	1.560	1.865	<b>1.903</b>	0.010 <sup>1#</sup>	<b>0.010<sup>2#</sup></b>
0.132	0.261	0.218	0.205	0.244	0.182	0.281	0.255	0.238	0.294	0.354	0.350	/	/
Note:													
1: The highest Summed 1g SAR is 1.903W/Kg > 1.6 W/kg, so Simultaneous Transmission SAR test exclusion is determined by the SAR to peak location separation ratio.													
2: The SPLSR is 0.01 < 0.04, so Simultaneous Transmission SAR test is not required.													

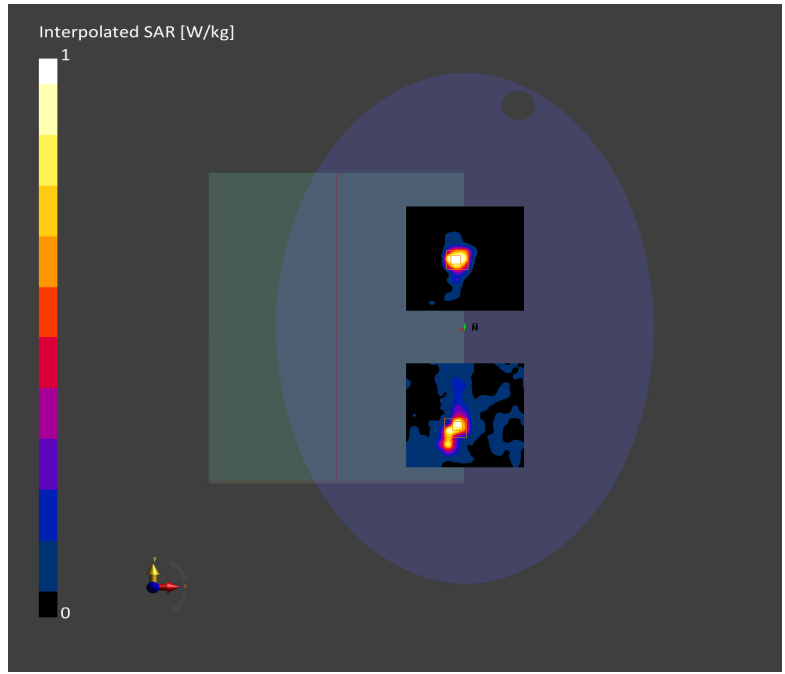
**SPLSR Analysis 1#**

Case 1	Band	Position	SAR (W/kg)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
1	WLAN5G Ant.Aux	Back Side	1.004	-0.015002	-0.118995	-0.175599	199.0	1.87	0.01	Not required
2	WLAN5G Ant.Main		0.861	-0.013001	0.079998	-0.175596				



**SPLSR Analysis 2#**

Case 2	Band	Position	SAR (W/kg)	SAR peak location (m)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
1	WLAN6G Ant.Aux	Back Side	0.767	-0.015301	-0.121245	-0.175592	199.1	1.90	0.01	Not required
2	WLAN6G Ant.Main		1.136	-0.012804	0.077849	-0.175577				



### 12.2.2 Limbs Simultaneous Transmission SAR Evaluation for WLAN Antenna with Bluetooth

State	Position		Stand alone SAR								
			1	2	3	4	5	6	7		
			Bluetooth	WLAN 2.4GHz (Antenna Auxiliary)	WLAN 2.4GHz (Antenna Main)	MAX. WLAN 5GHz (Antenna Auxiliary)	MAX. WLAN 5GHz (Antenna Main)	WLAN 6GHz (Antenna Auxiliary)	WLAN 6GHz (Antenna Main)		
Limbs	Laptop	Front Edge of Keyboard	0.022	0.038	0.028	0.153	0.174	0.021	0.034		
Limbs	Laptop	Palm rest Side of Keyboard	0.132	0.432	0.492	0.902	1.195	0.245	0.395		
SUM SAR											
Sum SAR (1+3)	Sum SAR (1+4)	Sum SAR (1+6)	Sum SAR (1+5)	Sum SAR (1+7)	Sum SAR (2+3)	Sum SAR (3+4)	Sum SAR (2+5)	Sum SAR (3+6)	Sum SAR (2+7)	Sum SAR (4+5)	Sum SAR (6+7)
0.050	0.175	0.043	0.196	0.056	0.066	0.181	0.212	0.049	0.072	0.327	0.055
0.624	1.034	0.377	1.327	0.527	0.924	1.394	1.627	0.737	0.827	<b>2.097</b>	0.640
<p>Note:</p> <p>1: The highest Summed 10g SAR is 2.097W/Kg &lt; 4.0 W/kg, so Simultaneous Transmission SAR test is not required.</p>											

## 13 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
Test Software	Speag	DASY6	16.0.0.116	N/A	N/A
2450MHz Validation Dipole	Speag	D2450V2	SN: 952	2021/05/19	2024/05/18
5GHz Validation Dipole	Speag	D5GHzV2	SN: 1200	2021/05/18	2024/05/17
6.5GHz Validation Dipole	Speag	D6.5GHzV2	SN: 1037	2021/07/01	2024/07/01
E-Field Probe	Speag	EX3DV4	SN: 7607	2023/07/04	2024/07/03
Data Acquisition Electronicsr	Speag	DAE4	SN: 878	2023/03/23	2024/03/22
Signal Generator	R&S	SMB100A	177746	2023/05/10	2024/05/09
Power Meter	R&S	NRVD-B2	835843/014	2023/09/05	2024/09/04
Power Sensor	R&S	NRV-Z4	100381	2023/09/05	2024/09/04
Power Sensor	R&S	NRV-Z2	100211	2023/09/05	2024/09/04
Network Analyzer	Agilent	E5071C	MY46103472	2023/11/14	2024/11/14
Thermometer	Elitech	RC-4	EF5238001628	2023/10/09	2024/10/09
Thermometer	Elitech	RC-4HC	EF7239002652	2023/11/17	2024/11/17
Power Amplifier	SATIMO	6552B	22374	N/A	N/A
Dielectric Probe Kit	Speag	DAK3.5	SN: 1312	N/A	N/A
Phantom	Speag	ELI V8.0	SN: 2159	N/A	N/A
Attenuator	COM-MW	ZA-S1-31	1305003187	N/A	N/A
Directional coupler	AA-MCS	AAMCS-UDC	000272	N/A	N/A

Note: For dipole antennas, BALUN has adopted 3 years as calibration intervals, and on annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss in within 20% of calibrated measurement.
4. Impedance (real or imaginary parts) in within 5 Ohms of calibrated measurement.

## ANNEX A SIMULATING LIQUID VERIFICATION RESULT

The dielectric parameters of the liquids were verified prior to the SAR evaluation using a DAK3.5 Dielectric Probe Kit.

Date	Liquid Type	Fre. (MHz)	Temp. (°C)	Meas. Conductivity ( $\sigma$ ) (S/m)	Meas. Permittivity ( $\epsilon$ )	Target Conductivity ( $\sigma$ ) (S/m)	Target Permittivity ( $\epsilon$ )	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2023.12.09	Head	2450	21.6	1.79	39.42	1.80	39.20	-0.44	0.56
2023.12.10	Head	5250	21.2	4.70	36.18	4.71	35.93	-0.28	0.68
2023.12.11	Head	5600	21.6	5.06	35.32	5.07	35.53	-0.30	-0.58
2023.12.12	Head	5750	21.4	5.18	35.52	5.22	35.36	-0.86	0.44
2023.12.13	Head	6500	21.1	6.08	34.71	6.07	34.46	0.18	0.73

Note: The tolerance limit of Conductivity and Permittivity is  $\pm 5\%$ .

## ANNEX B SYSTEM CHECK RESULT

Comparing to the original SAR value provided by SPEAG, the validation data should be within its specification of 10 % (for 1 g).

### Head liquid 1g

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)
2023.12.09	Head	2450	100	5.410	54.10	53.00	2.08
2023.12.10	Head	5250	100	7.620	76.20	77.80	-2.06
2023.12.11	Head	5600	100	8.260	82.60	81.20	1.72
2023.12.12	Head	5750	100	7.790	77.90	77.20	0.91
2023.12.13	Head	6500	100	29.300	293.00	286.00	2.45

Note: The tolerance limit of System validation  $\pm 10\%$ .

### Head liquid 10g

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)
2023.12.09	Head	2450	100	2.450	24.50	24.10	1.66
2023.12.10	Head	5250	100	2.180	21.80	22.10	-1.36
2023.12.11	Head	5600	100	2.370	23.70	23.10	2.60
2023.12.12	Head	5750	100	2.180	21.80	21.70	0.46
2023.12.13	Head	6500	100	5.350	53.50	52.60	1.71

Note: The tolerance limit of System validation  $\pm 10\%$ .

# System Performance Check Data (2450MHz)

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
D2450V2, SPEAG	40.0 x 8.0 x 8.0	Dipole

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		Validated on band	CW, 0--	2450.0, 2450	7.47	1.79	39.4	22.6	21.6

**Hardware Setup**

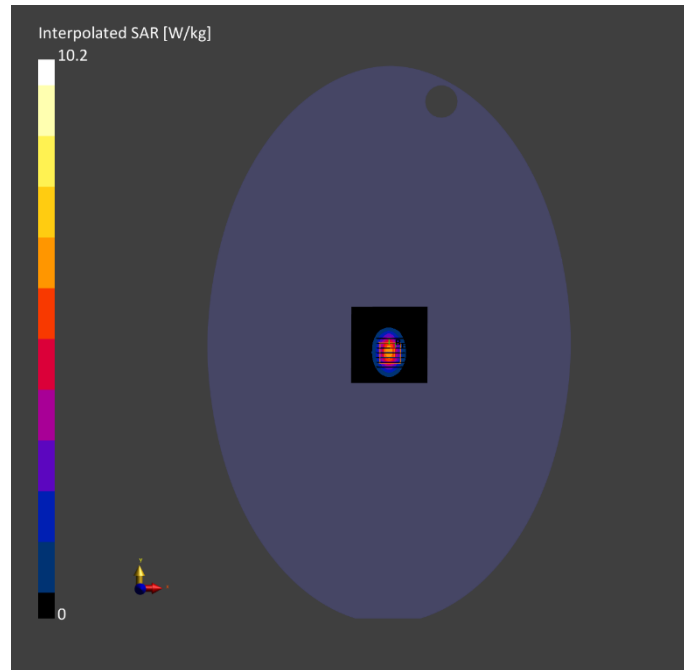
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000	2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

**Measurement Results**

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	30.0 x 30.0 x 30.0	Date	2023-12-09	2023-12-09
Grid Steps [mm]	8.0 x 10.0	5.0 x 5.0 x 1.5	psSAR1g [W/kg]	5.39	5.41
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.36	2.45
Graded Grid	Yes	Yes	Power Drift [dB]	0.12	-0.03
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor [dB]		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		79.8
			Dist 3dB Peak [mm]		8.2





# System Performance Check Data (5250MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

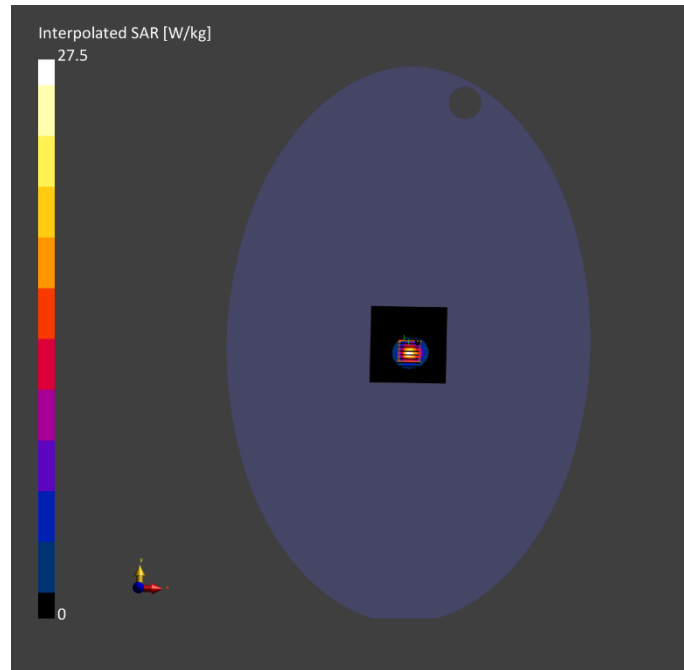
Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D5GH	CW, z	5250.0, 25	5.41	4.70	36.2	22.3	21.2

## Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan	Measurement Results		
			Area Scan	Zoom Scan	
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0	Date	2023-12-10	2023-12-10
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	6.81	7.62
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.06	2.18
Graded Grid	Yes	Yes	Power Drift [dB]	0.00	0.15
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor [dB]		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		64.6
			Dist 3dB Peak [mm]		7.2



# System Performance Check Data (5600MHz)

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHzV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		Validated on band	CW, 0--	5600.0, 5600	4.58	5.06	35.3	22.8	21.6

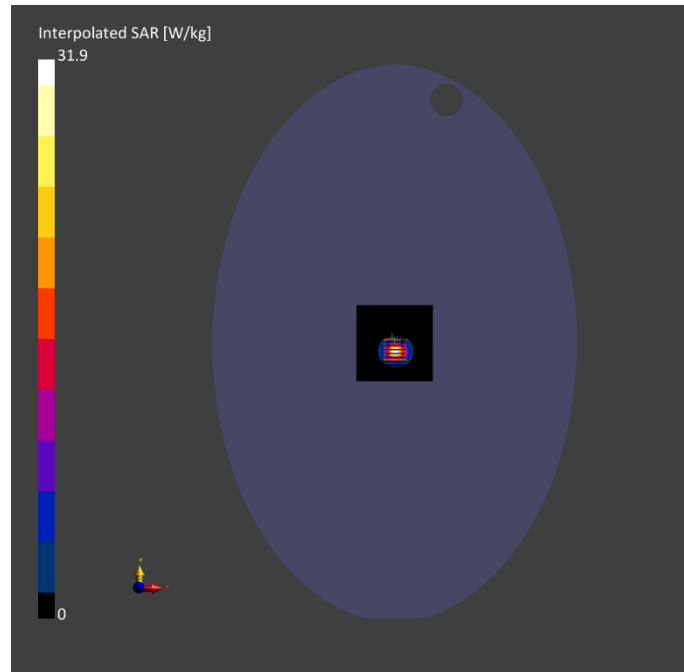
**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

**Measurement Results**

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0	Date	2023-12-11	2023-12-11
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	8.08	8.26
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.25	2.37
Graded Grid	Yes	Yes	Power Drift [dB]	0.03	0.00
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor [dB]		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		62.9
			Dist 3dB Peak [mm]		7.5



# System Performance Check Data (5750MHz)

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHzV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		Validation band	CW, 0--	5750.0, 5750	4.78	5.18	35.5	22.4	21.4

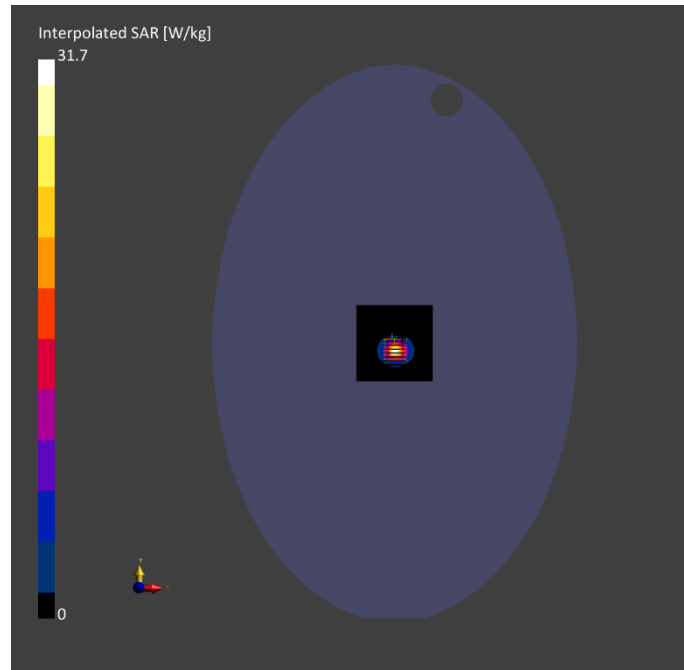
**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

**Measurement Results**

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0	Date	2023-12-12	2023-12-12
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.75	7.79
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.06	2.18
Graded Grid	Yes	Yes	Power Drift [dB]	-0.03	0.14
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor [dB]		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		62.3
			Dist 3dB Peak [mm]		8.6



# System Performance Check Data (6500MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D6.5GHzV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		Validation band	CW, 0--	6500.0, 6500	5.38	6.08	34.7	22.3	21.1

## Hardware Setup

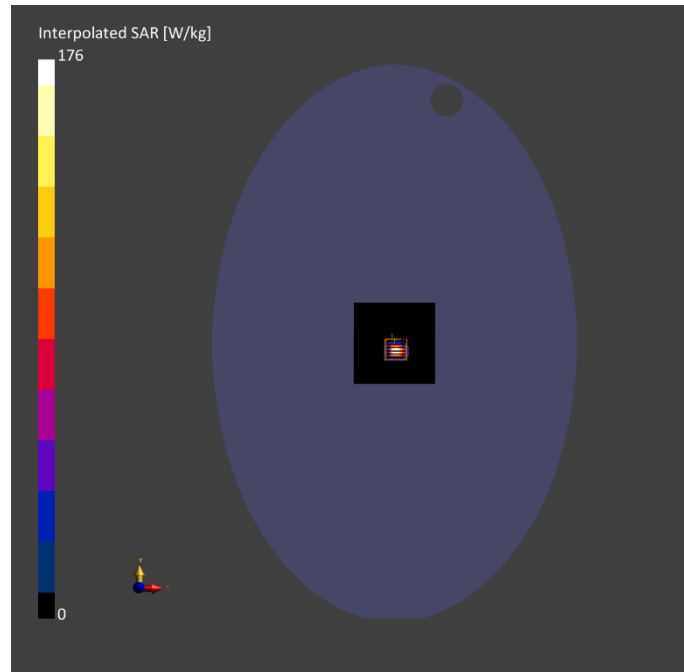
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-13	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

## Measurement Results

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 85.0	22.0 x 22.0 x 22.0	Date	2023-12-13	2023-12-13
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4	psSAR1g [W/kg]	29.4	29.3
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	5.18	5.35
Graded Grid	Yes	Yes	APD 4cm <sup>2</sup> [W/m <sup>2</sup> ]		123
Grading Ratio	1.5	1.4	Power Drift [dB]	-0.16	0.09
MAIA Surface	N/A	N/A	Power Scaling	Disabled	Disabled
Detection	All points	All points	Scaling Factor [dB]		
Scan Method	Measured	Measured	TSL Correction	No correction	No correction
			M2/M1 [%]		49.7
			Dist 3dB Peak [mm]		4.6





## ANNEX C TEST DATA

Meas.1 Body Plane with Back Side 0mm on 78 Channel in Bluetooth mode with Antenna Auxiliary

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

### Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	ISM	Bluetooth, 10032-CAA Band	2480.0, 78	7.47	1.85	40.0	22.6	21.6

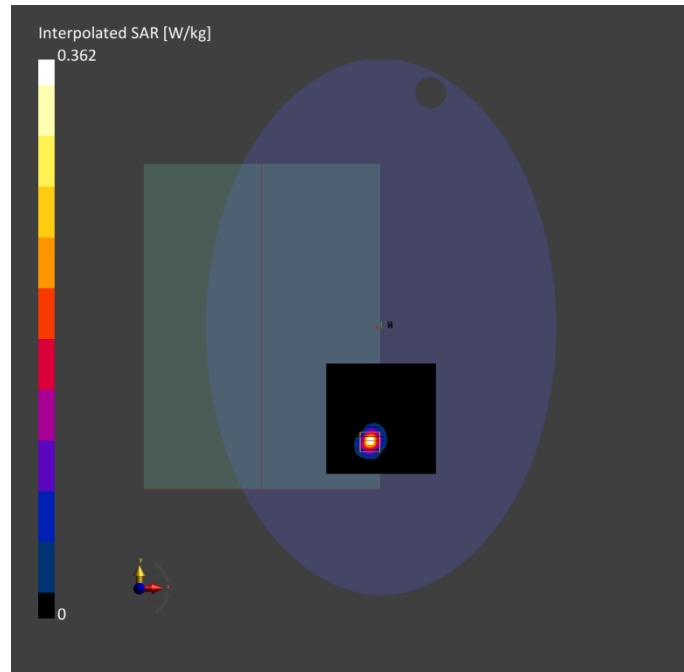
### Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

### Measurement Results

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	30.0 x 30.0 x 30.0	Date	2023-12-09	2023-12-09
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0	psSAR1g [W/kg]	0.169	0.177
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.064	0.069
Graded Grid	Yes	Yes	Power Drift [dB]	0.04	0.03
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		52.1
			Dist 3dB Peak [mm]		7.8



**Meas.2 Limbs Plane with Palm rest Side 0mm on 78 Channel in Bluetooth mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	ISM, 2.4 GHz Band	Bluetooth, 10032-CAA	2480.0, 78	7.47	1.85	40.0	22.6	21.6

**Hardware Setup**

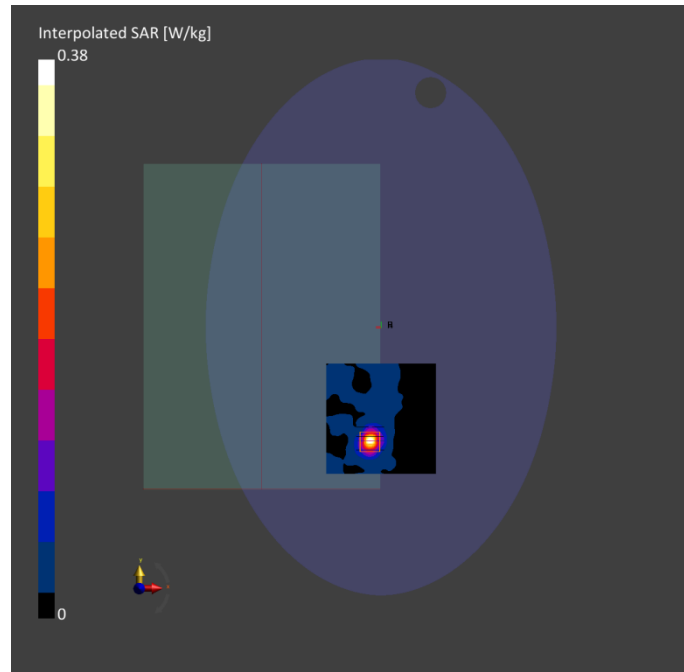
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-09	2023-12-09
psSAR1g [W/kg]	0.184	0.197
psSAR10g [W/kg]	0.074	0.090
Power Drift [dB]	0.05	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.8
Dist 3dB Peak [mm]		8.2



**Meas.3 Body Plane with Back Side 0mm on 11 Channel in IEEE802.11b mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN, 2.4GHz	WLAN, 10012-CAB	2462.0, 11	7.47	1.82	39.1	22.6	21.6

**Hardware Setup**

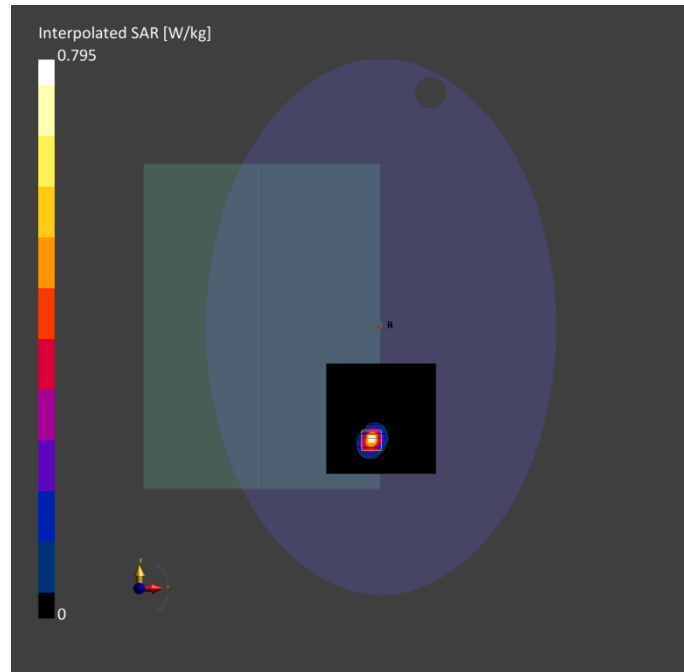
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-09	2023-12-09
psSAR1g [W/kg]	0.371	0.386
psSAR10g [W/kg]	0.144	0.153
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.2
Dist 3dB Peak [mm]		7.1



## Meas.4 Body Plane with Back Side 0mm on 6 Channel in IEEE802.11b mode with Antenna Main

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

## Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN, 2.4GHz	WLAN, 10012-CAB	2437.0, 6	7.47	1.78	39.6	22.6	21.6

## Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

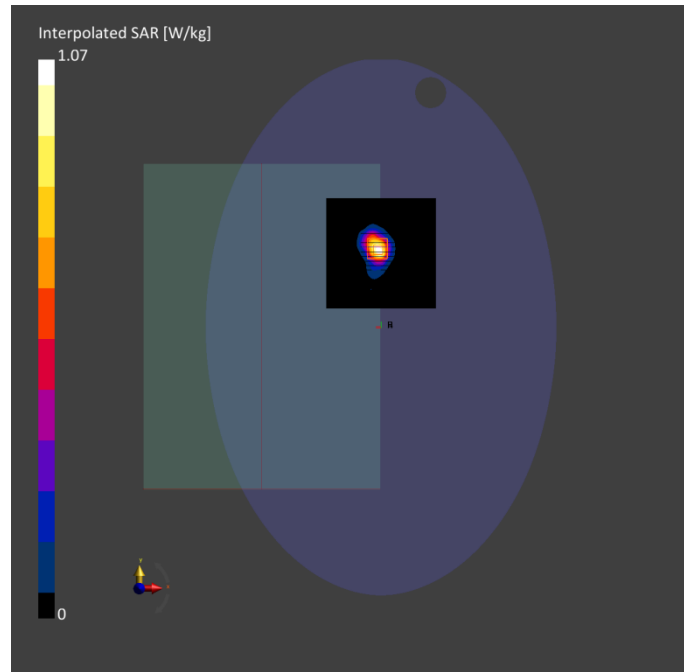
## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-09	2023-12-09
psSAR1g [W/kg]	0.490	0.506
psSAR10g [W/kg]	0.227	0.224
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		47.0
Dist 3dB Peak [mm]		7.8





**Meas.5 Limbs Plane with Palm rest Side 0mm on 11 Channel in IEEE802.11b mode with Antenna Auxiliar**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN, 2.4GHz	WLAN, 10012-CAB	2462.0, 11	7.47	1.82	39.1	22.6	21.6

**Hardware Setup**

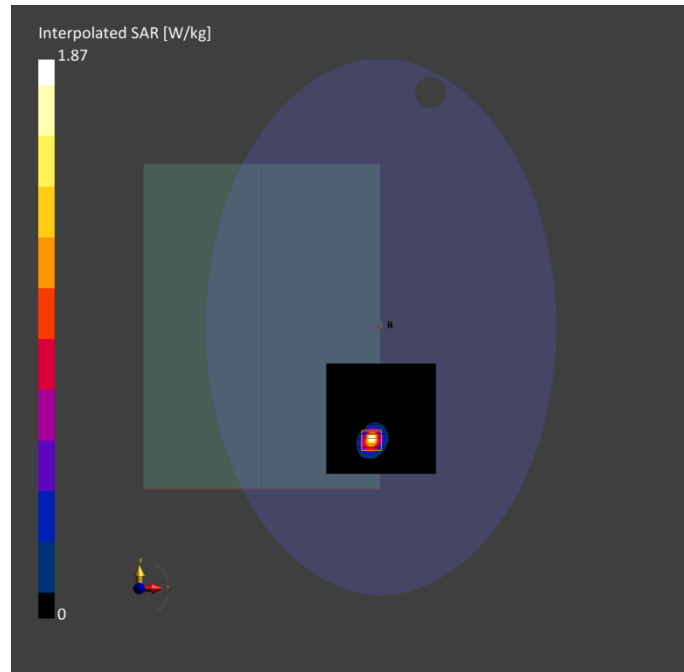
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-09	2023-12-09
psSAR1g [W/kg]	0.870	0.910
psSAR10g [W/kg]	0.338	0.360
Power Drift [dB]	-0.00	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.5
Dist 3dB Peak [mm]		7.1



**Meas.6 Limbs Plane with Palm rest Side 0mm on 6 Channel in IEEE802.11b mode with Antenna Main**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN, 2.4GHz	WLAN, 10012-CAB	2437.0, 6	7.47	1.78	39.6	22.6	21.6

**Hardware Setup**

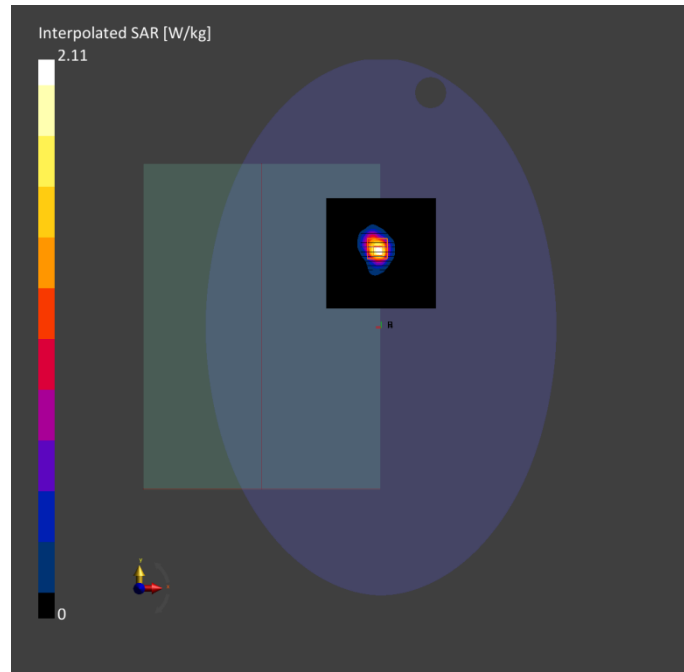
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-09	2023-12-09
psSAR1g [W/kg]	0.991	0.999
psSAR10g [W/kg]	0.450	0.438
Power Drift [dB]	0.01	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		47.0
Dist 3dB Peak [mm]		7.8



## Meas.7 Body Plane with Back Side 0mm on 58 Channel in IEEE802.11ac80 mode with Antenna Auxiliary

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

## Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10402-AAE	5290.0, 58	5.41	4.78	35.7	22.3	21.2

## Hardware Setup

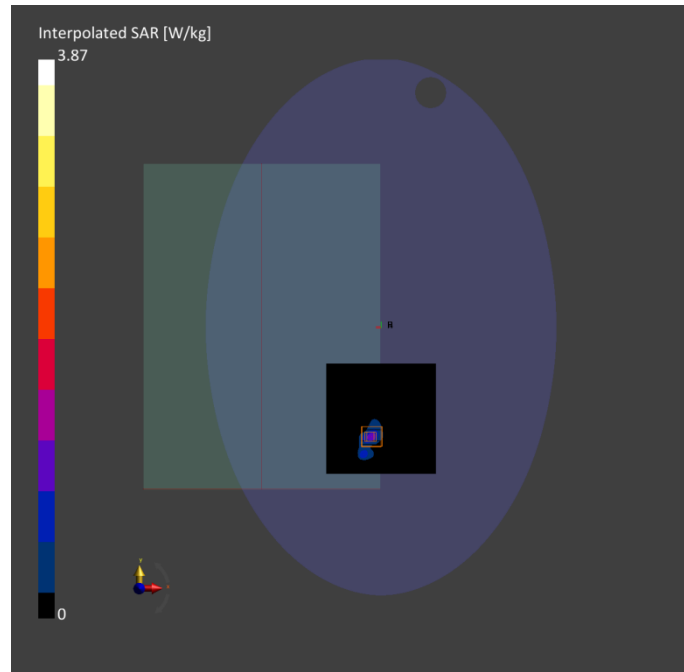
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-10	2023-12-10
psSAR1g [W/kg]	0.803	0.930
psSAR10g [W/kg]	0.239	0.251
Power Drift [dB]	0.02	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.9
Dist 3dB Peak [mm]		5.4



**Meas.8 Body Plane with Back Side 0mm on 58 Channel in IEEE802.11ac80 mode with Antenna Main**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10544-AAC	5290.0, 58	5.41	4.78	35.7	22.3	21.2

**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

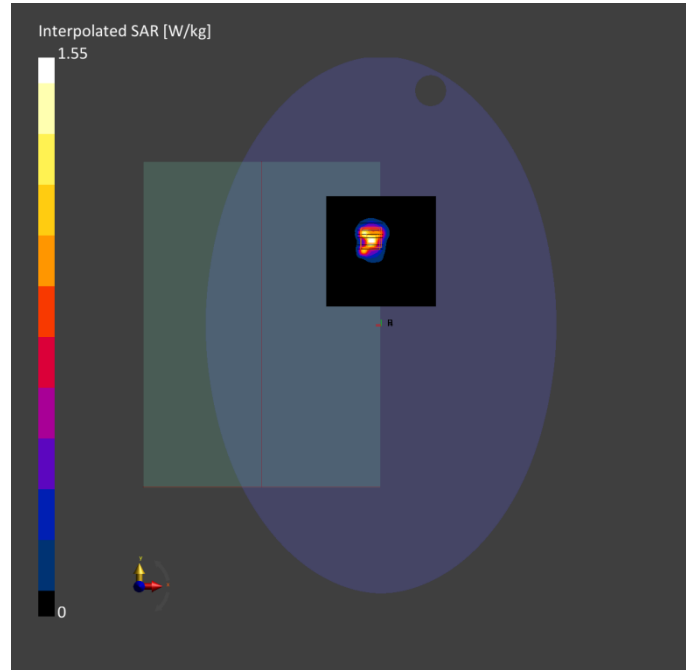
**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-10	2023-12-10
psSAR1g [W/kg]	0.364	0.412
psSAR10g [W/kg]	0.136	0.144
Power Drift [dB]	0.02	-0.10
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.4
Dist 3dB Peak [mm]		6.4





Meas.9 Limbs Plane with Palm rest Side 0mm on 62 Channel in IEEE802.11ac80 mode with Antenna Auxiliary

#### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

#### Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10402-AAE	5310.0, 62	5.41	4.83	35.3	22.3	21.2

#### Hardware Setup

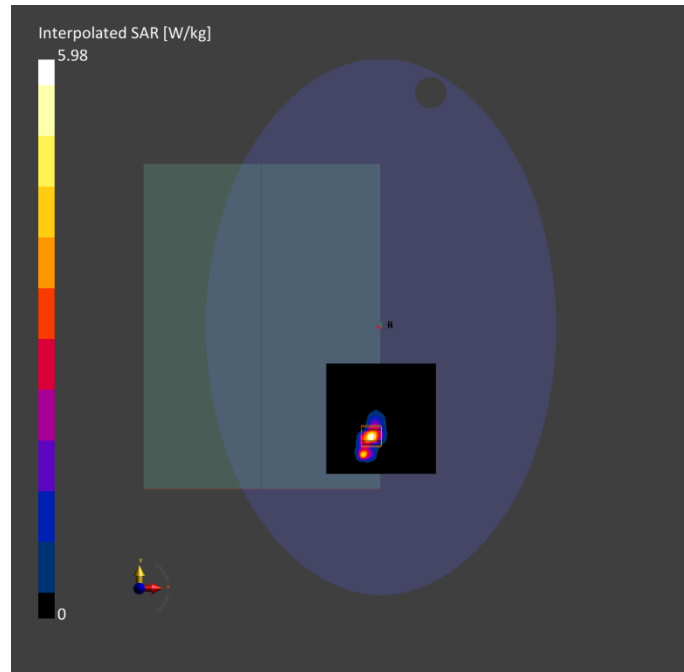
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

#### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

#### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-10	2023-12-10
psSAR1g [W/kg]	1.19	1.42
psSAR10g [W/kg]	0.354	0.385
Power Drift [dB]	-0.06	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.5
Dist 3dB Peak [mm]		5.7



Meas.10 Limbs Plane with Palm rest Side 0mm on 54 Channel in IEEE802.11ac80 mode with Antenna Main

#### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

#### Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10544-AAC	5270.0, 54	5.41	4.74	35.9	22.3	21.2

#### Hardware Setup

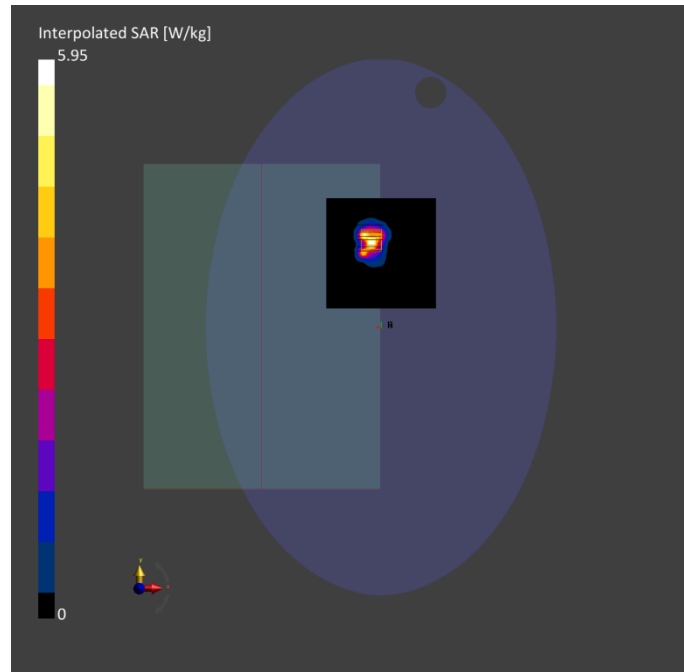
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

#### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

#### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-10	2023-12-10
psSAR1g [W/kg]	1.43	1.67
psSAR10g [W/kg]	0.540	0.638
Power Drift [dB]	0.01	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.5
Dist 3dB Peak [mm]		6.4



**Meas.11 Body Plane with Back Side 0mm on 114 Channel in IEEE802.11ac80 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10456-AAC	5570.0, 114	4.58	5.02	35.8	22.8	21.6

**Hardware Setup**

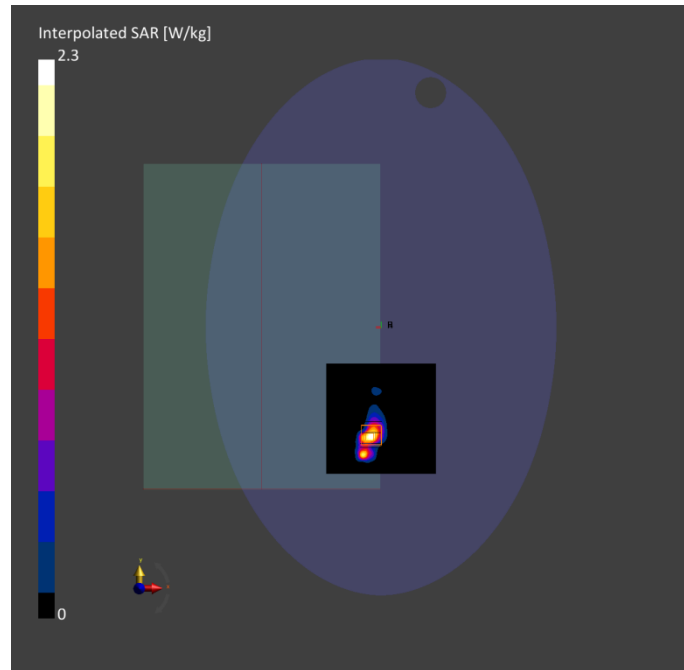
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	0.432	0.529
psSAR10g [W/kg]	0.135	0.136
Power Drift [dB]	0.00	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.7
Dist 3dB Peak [mm]		5.1



## Meas.12 Body Plane with Back Side 0mm on 114 Channel in IEEE802.11ac80 mode with Antenna Main

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

## Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10456-AAC	5570.0, 114	4.58	5.02	35.8	22.8	21.6

## Hardware Setup

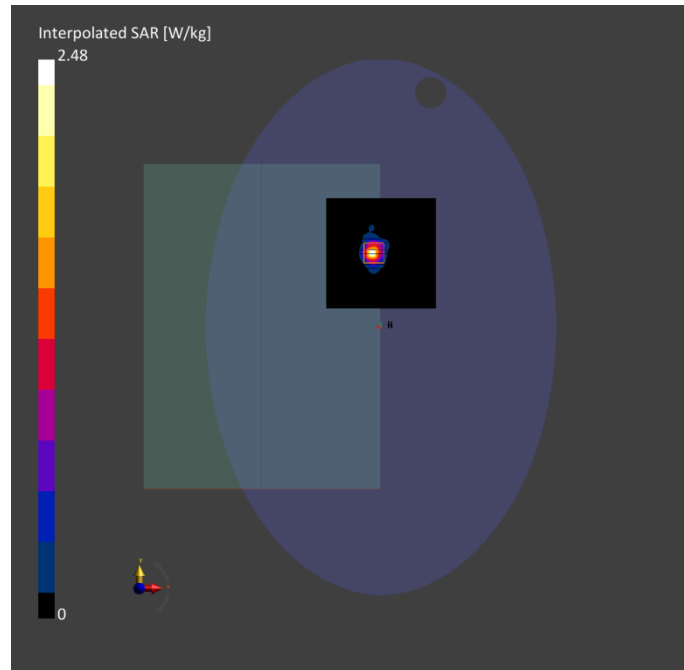
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

## Measurement Results

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0	Date	2023-12-11	2023-12-11
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0	psSAR1g [W/kg]	0.632	0.672
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.187	0.203
Graded Grid	Yes	Yes	Power Drift [dB]	0.01	-0.02
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	Y	N/A	Scaling Factor		
Surface Detection	VMS + 6p	VMS + 6p	[dB]		
Scan Method	Measured	Measured	TSL Correction	No correction	No correction
			M2/M1 [%]		53.2
			Dist 3dB Peak [mm]		5.4





**Meas.13 Limbs Plane with Palm rest Side 0mm on 106 Channel in IEEE802.11ac80 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10402-AAE	5530.0, 106	4.58	4.95	36.1	22.8	21.6

**Hardware Setup**

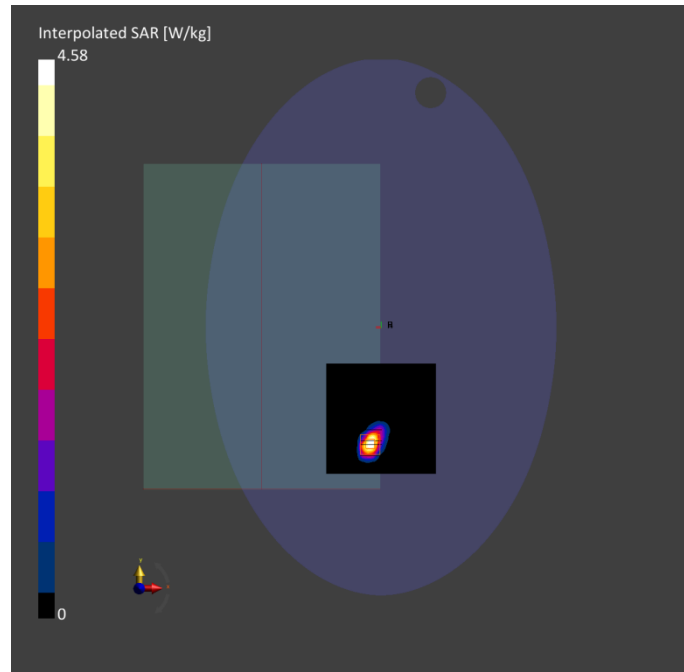
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	1.13	1.27
psSAR10g [W/kg]	0.377	0.412
Power Drift [dB]	-0.02	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.1
Dist 3dB Peak [mm]		7.5



**Meas.14 Limbs Plane with Palm rest Side 0mm on 106 Channel in IEEE802.11ac80 mode with Antenna Main**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10402-AAE	5530.0, 106	4.58	4.95	36.1	22.8	21.6

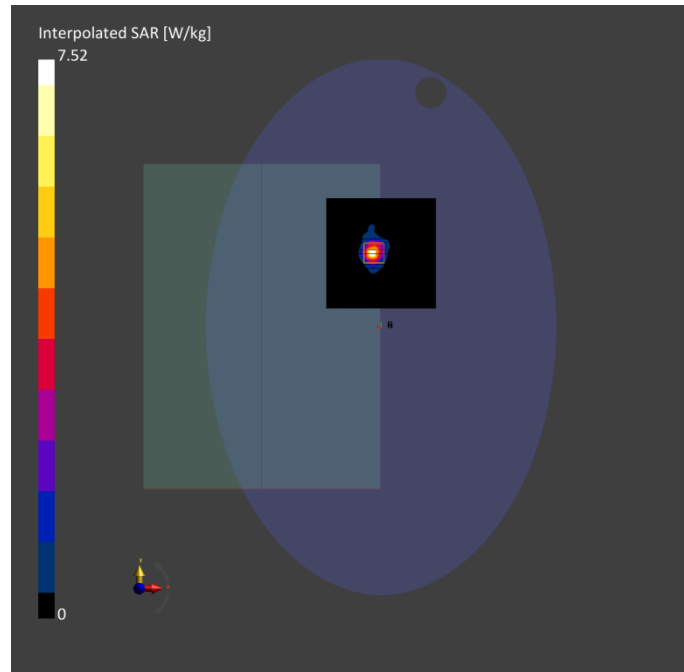
**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

**Measurement Results**

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0	Date	2023-12-11	2023-12-11
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0	psSAR1g [W/kg]	1.95	2.07
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.580	0.629
Graded Grid	Yes	Yes	Power Drift [dB]	-0.03	0.02
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	VMS + 6p	VMS + 6p	[dB]		
Scan Method	Measured	Measured	TSL Correction	No correction	No correction
			M2/M1 [%]		53.7
			Dist 3dB Peak [mm]		6.1



**Meas.15 Body Plane with Back Side 0mm on 155 Channel in IEEE802.11ac80 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10456-AAC	5775.0, 155	4.78	5.22	35.2	22.4	21.4

**Hardware Setup**

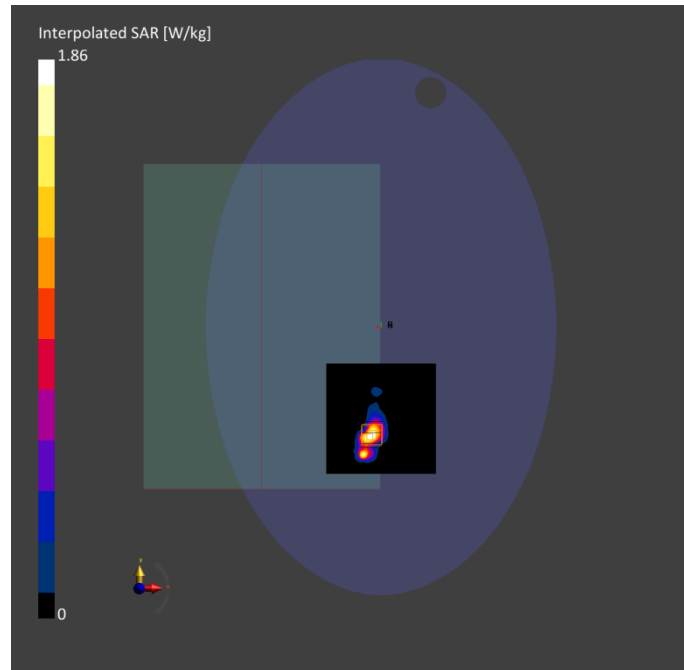
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	0.330	0.406
psSAR10g [W/kg]	0.108	0.122
Power Drift [dB]	0.06	0.15
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.5
Dist 3dB Peak [mm]		5.1



**Meas.16 Body Plane with Back Side 0mm on 155 Channel in IEEE802.11ac80 mode with Antenna Main**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10402-AAE	5775.0, 155	4.78	5.22	35.2	22.4	21.4

**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

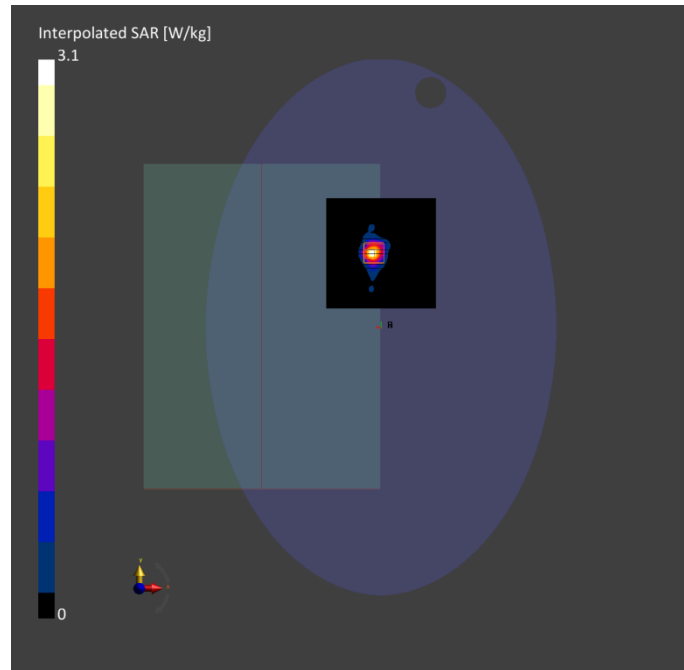
**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	0.740	0.783
psSAR10g [W/kg]	0.227	0.243
Power Drift [dB]	-0.02	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.8
Dist 3dB Peak [mm]		5.7





**Meas.17 Limbs Plane with Palm rest Side 0mm on 155 Channel in IEEE802.11ac80 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10456-AAC	5775.0, 155	4.78	5.22	35.2	22.4	21.4

**Hardware Setup**

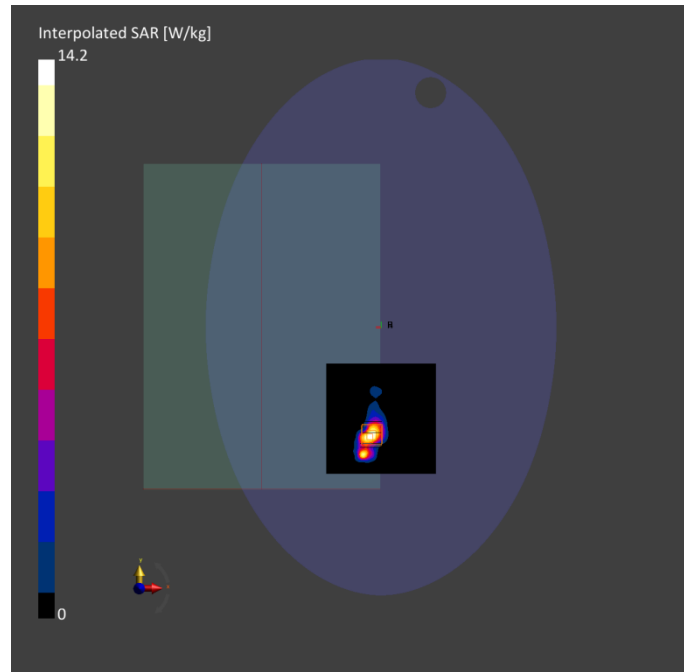
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	2.47	3.10
psSAR10g [W/kg]	0.810	0.812
Power Drift [dB]	0.04	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.1
Dist 3dB Peak [mm]		5.1



**Meas.18 Limbs Plane with Palm rest Side 0mm on 155 Channel in IEEE802.11ac80 mode with Antenna Main**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10402-AAE	5775.0, 155	4.78	5.22	35.2	22.4	21.4

**Hardware Setup**

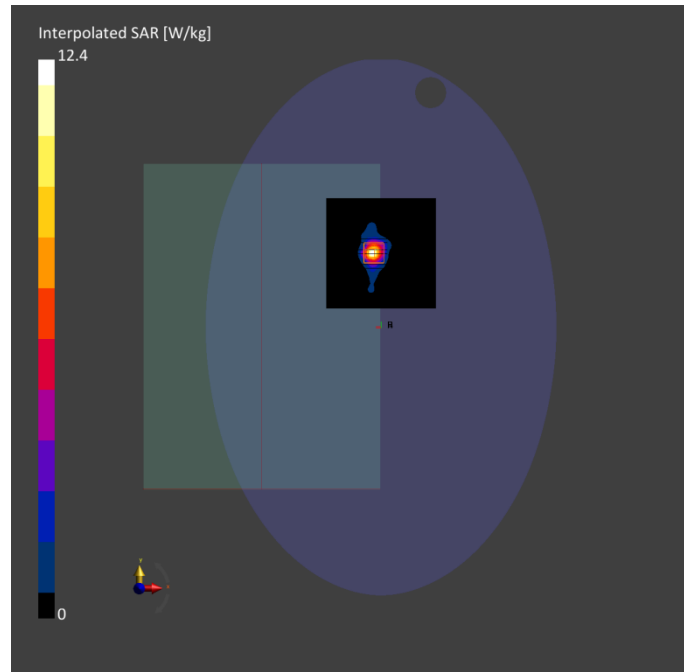
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	2.74	3.17
psSAR10g [W/kg]	0.852	0.991
Power Drift [dB]	0.01	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.0
Dist 3dB Peak [mm]		5.8



**Meas.19 Body Plane with Back Side 0mm on 163 Channel in IEEE802.11ax160 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	Custom Band	CW, 10554-AAD	5815.0, 163	4.78	5.28	35.1	22.4	21.4

**Hardware Setup**

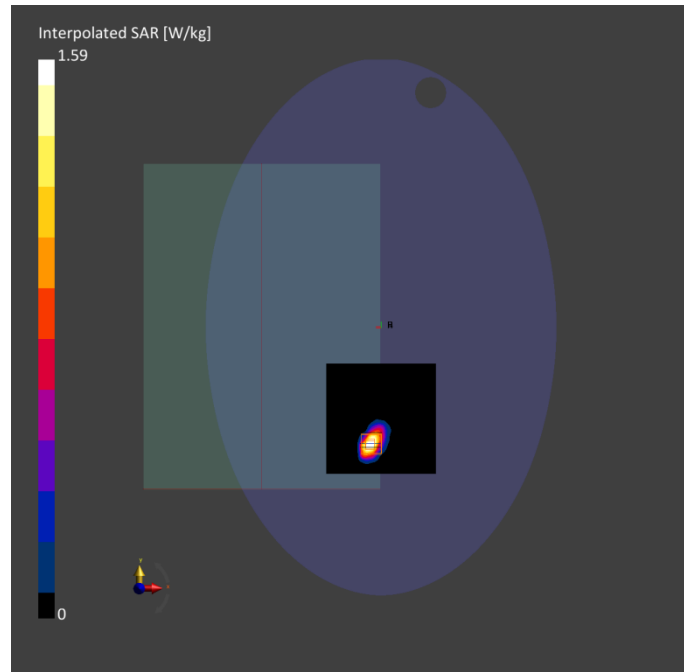
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	0.364	0.411
psSAR10g [W/kg]	0.126	0.139
Power Drift [dB]	0.01	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.1
Dist 3dB Peak [mm]		7.4



## Meas.20 Body Plane with Back Side 0mm on 163 Channel in IEEE802.11ax160 mode with Antenna Main

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

## Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	Custom Band	CW, 10554-AAD	5815.0, 163	4.78	5.28	35.1	22.4	21.4

## Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

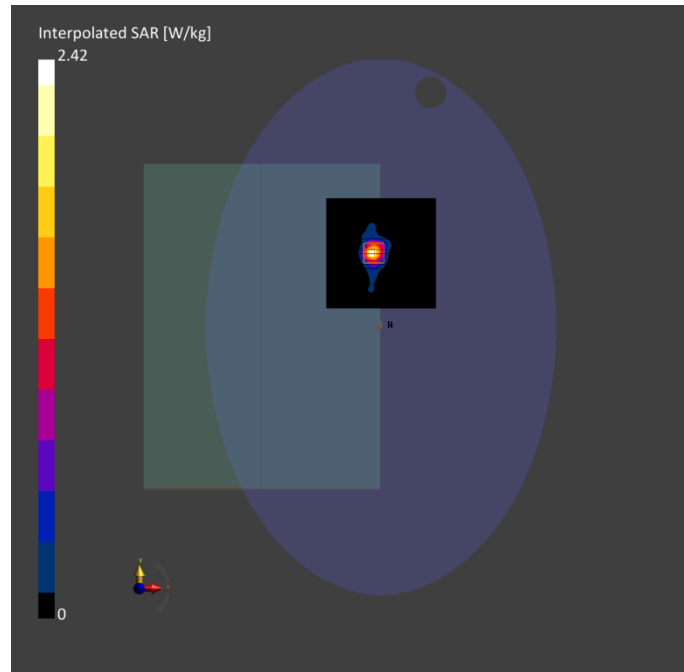
## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	0.558	0.612
psSAR10g [W/kg]	0.175	0.193
Power Drift [dB]	0.01	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.1
Dist 3dB Peak [mm]		5.8





**Meas.21 Limbs Plane with Palm rest Side 0mm on 163 Channel in IEEE802.11ac80 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10544-AAC	5815.0, 163	4.78	5.28	35.1	22.4	21.4

**Hardware Setup**

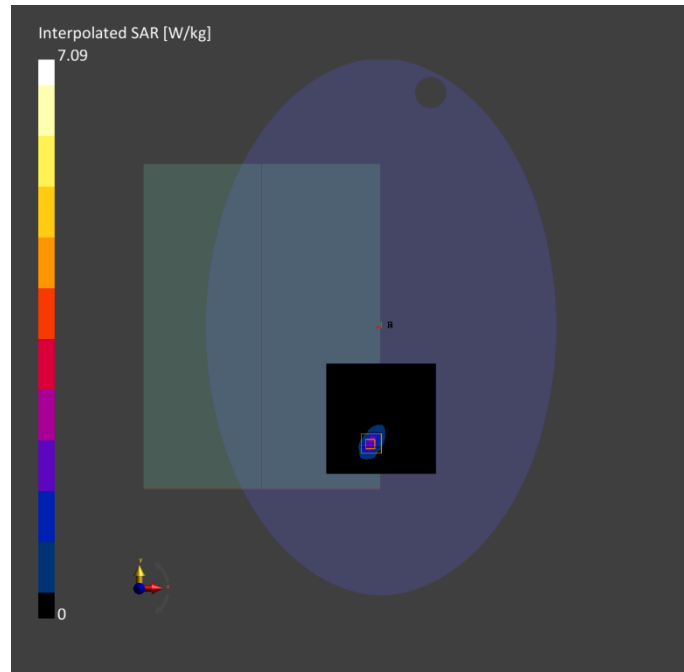
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-12	2023-12-12
psSAR1g [W/kg]	1.59	1.85
psSAR10g [W/kg]	0.556	0.631
Power Drift [dB]	0.04	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.7
Dist 3dB Peak [mm]		7.5



**Meas.22 Limbs Plane with Palm rest Side 0mm on 163 Channel in IEEE802.11ac80 mode with Antenna Main**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	WLAN 5GHz	WLAN, 10544-AAC	5815.0, 163	4.78	5.28	35.1	22.4	21.4

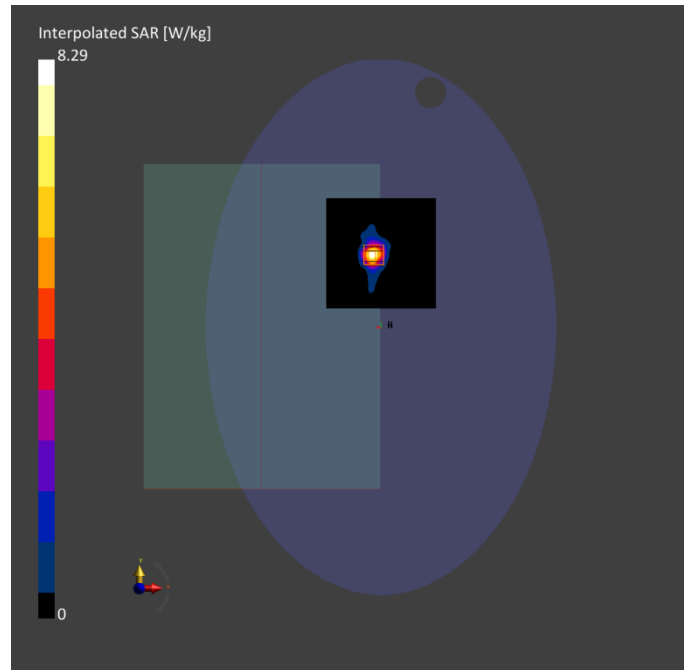
**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

**Measurement Results**

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 120.0	24.0 x 24.0 x 22.0	Date	2023-12-12	2023-12-12
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0	psSAR1g [W/kg]	1.88	2.10
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.608	0.664
Graded Grid	Yes	Yes	Power Drift [dB]	-0.03	0.01
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	VMS + 6p	VMS + 6p	[dB]		
Scan Method	Measured	Measured	TSL Correction	No correction	No correction
			M2/M1 [%]		53.2
			Dist 3dB Peak [mm]		5.7



**Meas.23 Body Plane with Back Side 0mm on 15 Channel in IEEE802.11ax160 mode with Antenna Auxiliary**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	U- NII-5	WLAN, 10743- AAC	6025.0, 15	5.38	5.43	35.8	22.3	21.1

**Hardware Setup**

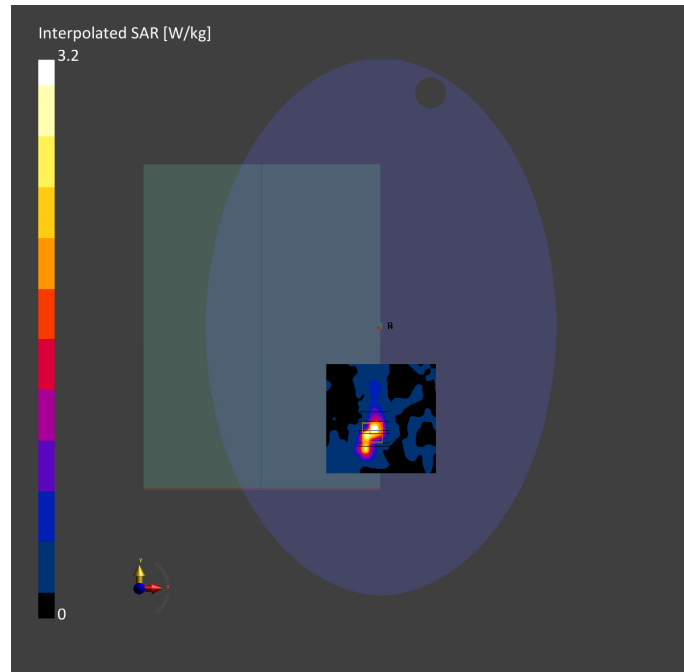
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-13	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	119.0 x 119.0	27.2 x 27.2 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	0.585	0.642
psSAR10g [W/kg]	0.199	0.199
APD 4cm <sup>2</sup> [W/m <sup>2</sup> ]		4.57
Power Drift [dB]	0.01	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.3
Dist 3dB Peak [mm]		5.8



**Meas.24 Body Plane with Back Side 0mm on 15 Channel in IEEE802.11ax160 mode with Antenna Main**
**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Tablet

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	U- NII-5	WLAN, 10743- AAC	6025.0, 15	5.38	5.43	35.8	22.3	21.1

**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-13	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

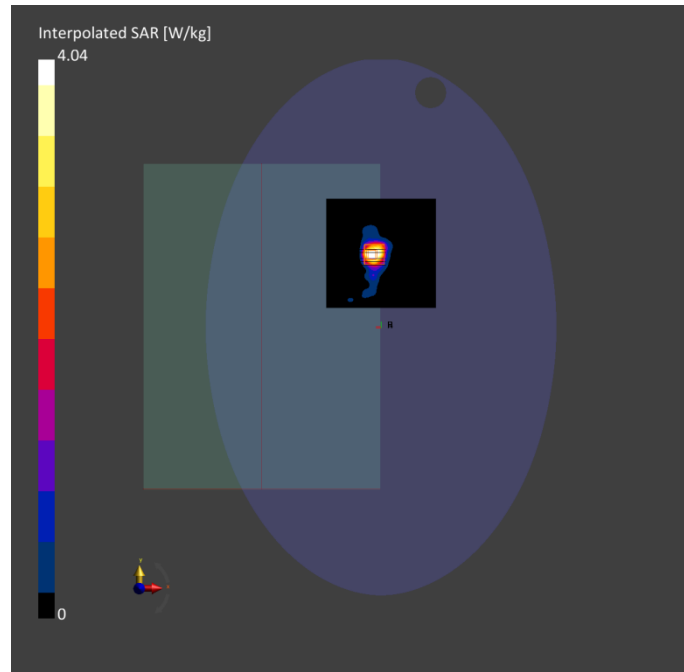
**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	119.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	0.776	0.920
psSAR10g [W/kg]	0.281	0.311
APD 4cm <sup>2</sup> [W/m <sup>2</sup> ]		7.02
Power Drift [dB]	-0.05	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.9
Dist 3dB Peak [mm]		5.4





**Meas.25 Limbs Plane with Back Side 0mm on 47 Channel in IEEE802.11ax160 mode with Antenna Auxiliary**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	U- NII-5	WLAN, 10743- AAC	6185.0, 47	5.38	5.53	35.4	22.3	21.1

**Hardware Setup**

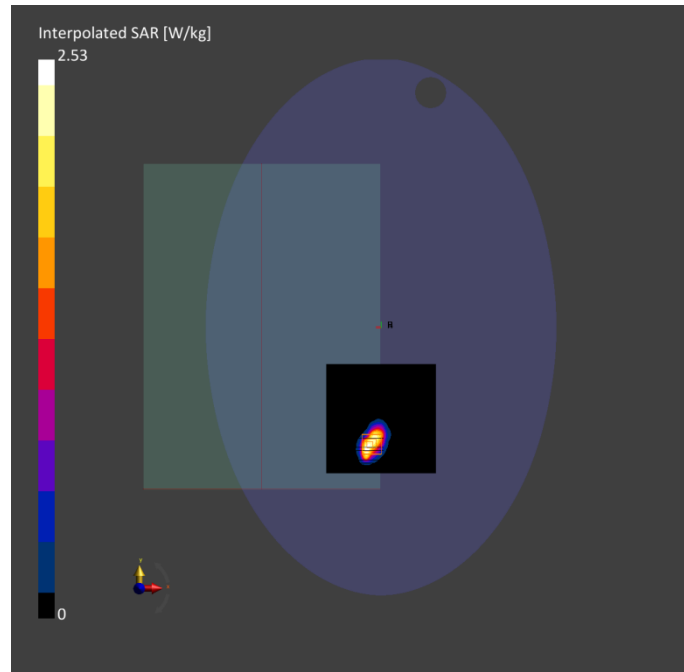
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-13	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	119.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	0.519	0.570
psSAR10g [W/kg]	0.189	0.211
APD 4cm <sup>2</sup> [W/m <sup>2</sup> ]		4.76
Power Drift [dB]	0.06	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.5
Dist 3dB Peak [mm]		4.8



**Meas.26 Limbs Plane with Back Side 0mm on 47 Channel in IEEE802.11ax160 mode with Antenna Main**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
IDEAPAD 5 2-IN-1 16AHP9	355.0 x 258.0 x 14.0	Laptop

**Exposure Conditions**

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	BACK, 0.00	U- NII-5	WLAN, 10743- AAC	6185.0, 47	5.38	5.53	35.4	22.3	21.1

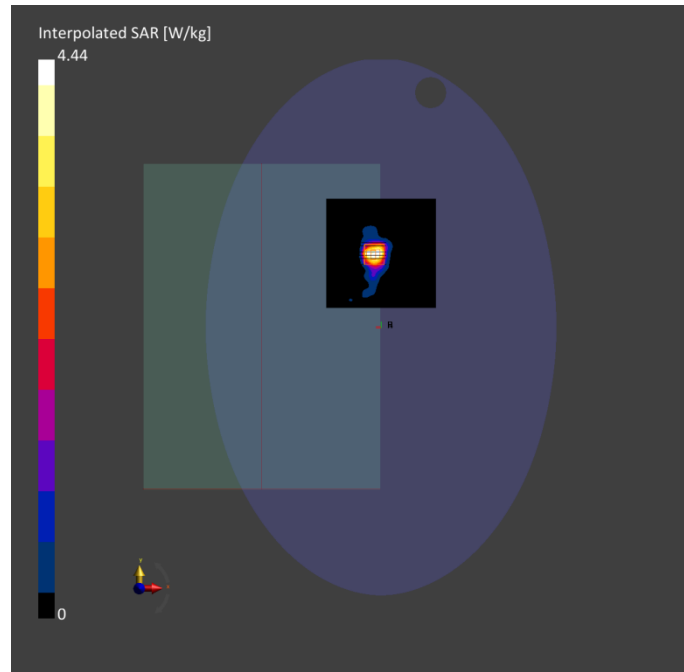
**Hardware Setup**

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2023-12-13	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

**Measurement Results**

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	119.0 x 119.0	22.0 x 22.0 x 22.0	Date	2023-12-13	2023-12-13
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4	psSAR1g [W/kg]	0.863	0.995
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.317	0.351
Graded Grid	Yes	Yes	APD 4cm <sup>2</sup> [W/m <sup>2</sup> ]		8.00
Grading Ratio	1.5	1.4	Power Drift [dB]	-0.01	-0.11
MAIA	N/A	N/A	Power Scaling	Disabled	Disabled
Surface Detection	VMS + 6p	VMS + 6p	Scaling Factor [dB]		
Scan Method	Measured	Measured	TSL Correction	No correction	No correction
			M2/M1 [%]		56.0
			Dist 3dB Peak [mm]		5.2



## **ANNEX D EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ23B0215-AW.pdf”.

## **ANNEX E SAR TEST SETUP PHOTOS**

Please refer the document “BL-SZ23B0215-AS-2.pdf”.

## **ANNEX F CALIBRATION REPORT**

Please refer the document “BL-SZ23B0215-AC-2.pdf”.

## **ANNEX G TUNE-UP PROCEDURE**

Please refer the document “BL-SZ23B0215-AT-7.pdf”.

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